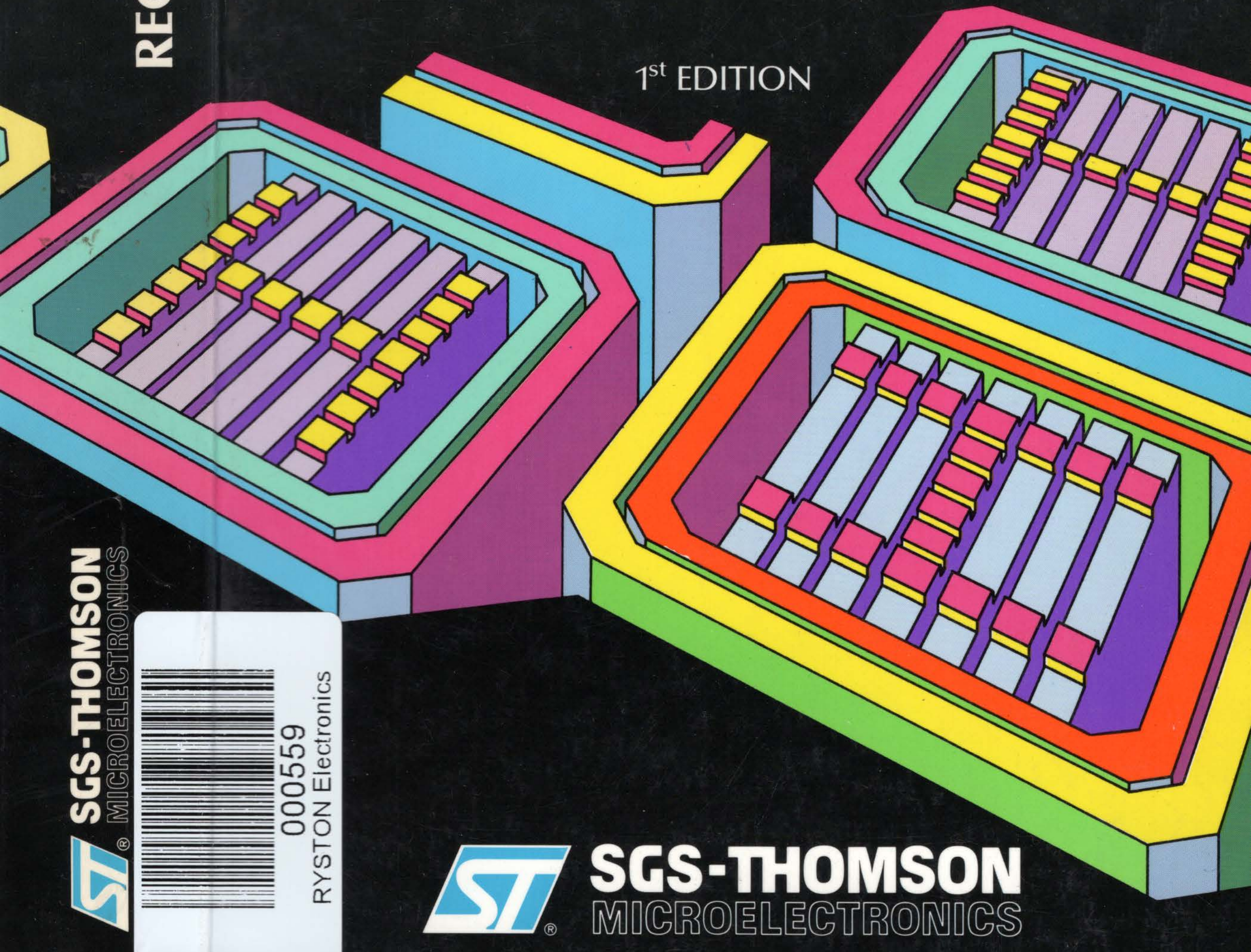
ZENER SCHOTTKY & RECTIFIER DIODES

DATABOOK

1st EDITION



SGS-THOMSON
MICROELECTRONICS

ZENER
SCHOTTKY &
RECTIFIER DIODES

SGS-THOMSON
MICROELECTRONICS

3326 D

ZENER SCHOTTKY & RECTIFIER DIODES

DATABOOK

1st EDITION

JANUARY 1990

USE IN LIFE SUPPORT DEVICES FOR SYSTEMS MUST BE EXPRESSLY AUTHORIZED

SGS-THOMSON PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF SGS-THOMSON Microelectronics. As used herein:

1. Life support devices or systems are those which (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided with the product, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can reasonably be expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

TABLE OF CONTENTS

ALPHANUMERICAL INDEX

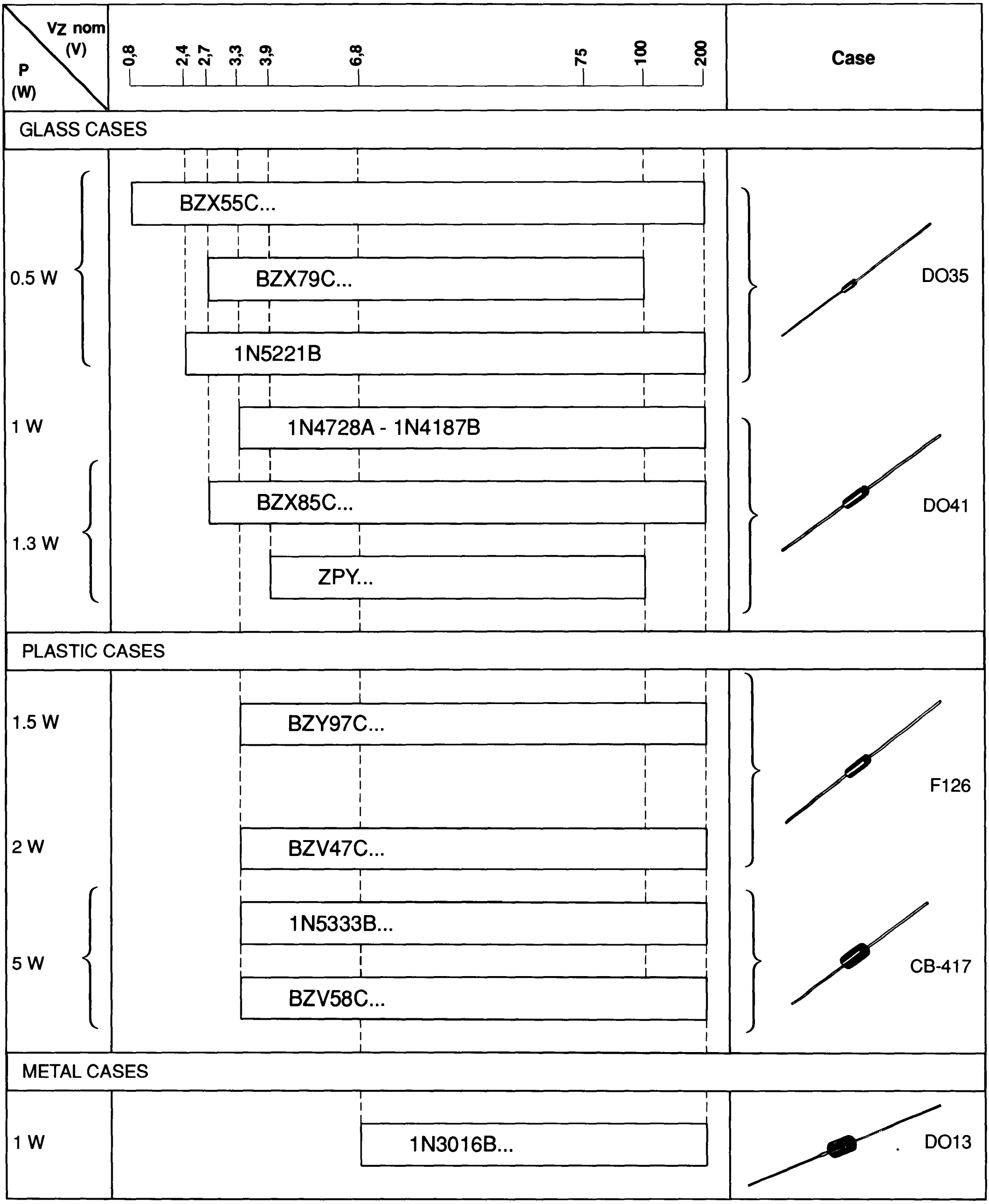
ALPHANUMERICAL INDEX

C	Overvoltage coefficient
C_o	Junction capacitance
di/dt	Rate of decrease of forward current
F	Frequency
I_F	Forward continuous current
$I_{F(AV)}$, I_o	Average forward current
$I_{F(RMS)}$	RMS forward current
I_{FM}	Peak forward current
I_{FRM}	Repetitive peak forward current
I_{FSM}	Surge non repetitive forward current
I_{HI}, I_{LO}	Test current ΔV_Z at high and low levels for T-LVA series
I_M	Maximum peak forward current
I_R	Continuous reverse current
I_{RM}	Peak reverse recovery current
I_{rr}	Test point of reverse recovery time on reverse recovery current
I_Z	Regulation current
I_{ZK}	Regulation current in the breakdown knee region
I_{ZM}	Peak regulation current
I_{ZSM}	Surge non repetitive peak reverse current
I_{ZT}	Regulation voltage test current
P	Power dissipation
P_{ZSM}	Surge non repetitive power dissipation
P_{TOT}	Total power dissipation
Q_{rr}	Reverse recovery charge
Q_S	Stored charge
R_L	Load resistance
$R_{thl(c)}$	Coupling thermal resistance
$R_{th(j-a)}$	Junction-ambient thermal resistance
$R_{th(j-c)}$	Junction-case thermal resistance
$R_{th(j-l)}$	Junction-leads thermal resistance
$R_{th(j-SR)}$	Junction-substratec thermal resistance
r_{ZK}	Small signal resistance in the breakdown knee region
r_{ZT}	Small signal resistance for the test reverse current
T_{amb}	Ambient temperature
T_c, T_{case}	Case temperature
t_{fr}	Forward recovery time
T_{IRM}	Time after I_{RM} is reached
T_J	Junction temperature
T_L	Maximum lead temperature for soldering
T_{oper}	Operating temperature (at zero dissipation)
t_p	Pulse width
t_{rr}	Reverse recovery time
T_{stg}	Storage temperature
V_{BR}	Breakdown voltage
V_F	Forward voltage
V_{FM}	Peak forward voltage
V_{FP}	Transient peak forward voltage
V_R	Continuous reverse voltage
V_{RP}	Transient peak reverse voltage
V_{RRM}	Repetitive peak reverse voltage

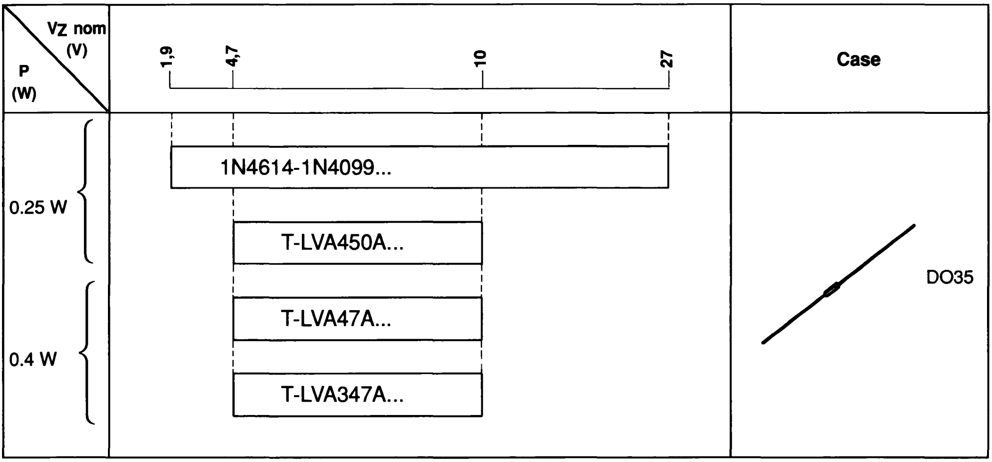
V_{RSM}	Non repetitive peak reverse voltage
V_{RWM}	Peak working reverse voltage
V_Z	Continuous reverse voltage in the breakdown region
V_{ZT}	Test continuous reverse voltage
Z_{th}	Thermal impedance
α_{rz}	Temperature coefficient of differential resistance
α_{vz}	Temperature coefficient of working voltage
δ	Duty cycle
ΔV, ΔV_Z	Regulation voltage variation
D	Detection efficiency
θV_Z	Temperature coefficient in mV/°C
τ	Minority carrier life time

ZENER DIODES

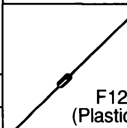
GENERAL PURPOSE



LOW NOISE AND LOW LEVEL ZENER DIODES



LOW VOLTAGE REGULATOR

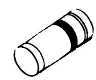
Forward Reference Voltage (V)		I_F Test Current (mA)	Maximum Leakage Current		Device type	Case
Min	Max		µA	Volt		 F126 (Plastic)
0.65	0.75	5	10	5	PLE 0.7	
1.35	1.55	5	10	5	PLE 1.5	

SURFACE MOUNT DEVICES

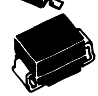
GENERAL PURPOSE AND LOW NOISE ZENER DIODES

P (W)	Vz nom (V): 0,8 – 1.8 – 2.4 – 2.7 – 3.3 – 27 – 75 – 100	Case
GLASS CASES		
.25	TMM4614-TMM4099 (1.8 – 27)	MINIMELF
.5	BZV55C... (0,8 – 100)	MINIMELF
.5	TM5221B... (2.4 – 100)	MINIMELF
1	TM4728A... (3.3 – 100)	MELF
1.3	BZM85C... (2.7 – 100)	MELF
PLASTIC CASES		
.3	BZX84C... (2.7 – 75)	SOT23
5	SM573V3A... (3.3 – 100)	SOD6


MINIMELF


MELF

SOT23


SOD6

TEMPERATURE COMPENSATED ZENER DIODE

V_{ZT} (V)	I_{ZT} (mA)	Test temp. points	100 ppm/°C Type	100 ppm/°C ΔV_Z (mV)	50 ppm/°C Type	50 ppm/°C ΔV_Z (mV)
6.2						
	7.5	B	TMM 821(1)	96	TMM 823(1)	48
	7.5	B	TMM 821A(1)	96	TMM 823A(1)	48
6.4	0.5	A	TMM 4565	48	TMM 4566	24
	2	A	TMM 4575	48	TMM 4576	24
	0.5	B	TMM 4565A	99	TMM 4566A	50
	2	B	TMM 4575A	99	TMM 4576A	50

αVz average temperature coefficient

	Test Temperature Points
A	0°C, 25°C, 75°C,
B	—55°C, 0°C, 25°C, 75°C, 100°C

Note: 1 A suffix: RZT max = 10Ω
no A suffix: R_{ZT} max = 15Ω

Note: 2 ESA qualified products.

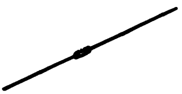
Case
 MINIMELF PF (Glass)

TEMPERATURE COMPENSATED

V_{ZT} (V)	I_{ZT} (mA)	Test temp. points	αV_Z average temperature coefficient										Prefered Series
			100 ppm/°C		50 ppm/°C		20 ppm/°C		10 ppm/°C		5 ppm/°C		
			Type	ΔV_Z (mV)	Type	ΔV_Z (mV)	Type	ΔV_Z (mV)	Type	ΔV_Z (mV)	Type	ΔV_Z (mV)	
6.2	7.5	B	1N 821(1)	96	1N 823(1)	48	1N 825(1)	19	1N 827(1)	9	1N 829(1)	5	P
	7.5	B	1N 821A(1)(2)	96	1N 823A(1)(2)	48	1N 825A(1)(2)	19	1N 827A(1)(2)	9	1N 829A(1)	5	P
6.4	0.5	A	1N 4565	48	1N 4566	24	1N 4567	10	1N 4568	5	1N 4569	2	P
	1	A	1N 4570	48	1N 4571	24	1N 4572	10	1N 4573	5	1N 4574	2	
	2	A	1N 4575	48	1N 4576	24	1N 4577	10	1N 4578	5	1N 4579	2	P
	4	A	1N 4580	48	1N 4581	24	1N 4582	10	1N 4583	5	1N 4584	2	
	0.5	B	1N 4565A(2)	99	1N 4566A(2)	50	1N 4567A(2)	20	1N 4568A(2)	10	1N 4569A	5	P
	1	B	1N 4570A	99	1N 4571A	50	1N 4572A	20	1N 4573A	10	1N 4574A	5	
	2	B	1N 4575A	99	1N 4576A	50	1N 4577A	20	1N 4578A	10	1N 4579A	5	P
	4	B	1N 4580A	99	1N 4581A	50	1N 4582A	20	1N 4583A	10	1N 4584A	5	
8.4	10	B	1N 3154	130	1N 3155	65	1N 3156	26	1N 3157	13			P
	10	C	1N 3154A	172	1N3155A	86	1N 3156A	34	1N 3157A	17			
8.5	0.5	A	1N 4775	64	1N 4776	32	1N 4777	13	1N 4778	6	1N 4779	3	
	1	A	1N 4780	64	1N 4781	32	1N 4782	13	1N 4783	6	1N 4784	3	
	0.5	B	1N 4775A	132	1N 4776A	66	1N 4777A	26	1N 4778A	13	1N 4779A	7	
	1	B	1N 4780A	132	1N 4781A	66	1N 4782A	26	1N 4783A	13	1N 4784A	7	
9	7.5	A	1N 935	67	1N 936	33	1N 937	13	1N 938	6	1N 939	3	
	7.5	B	1N 936A	139	1N 936A	69	1N 937A	27	1N 938A	13	1N 939A	7	P
	7.5	C	1N 935B	184	1N 936B	92	1N 937B	37	1N 938B	18	1N 939B	9	
9.1	0.5	A	1N 4765	68	1N 4766	34	1N 4767	14	1N 4768	7	1N 4769	3	
	1	A	1N 4770	68	1N 4771	34	1N 4772	14	1N 4773	7	1N 4774	3	
	0.5	B	1N 4765A	141	1N 4766A	70	1N 4767A	28	1N 4768A	14	1N 4769A	7	
	1	B	1N 4770A	141	1N 4771A	70	1N 4772A	28	1N 4773A	14	1N 4774A	7	

	Test Temperature Points
A	0°C, 25°C, 75°C,
B	—55°C, 0°C, 25°C, 75°C, 100°C
C	—55°C, 0°C, 25°C, 75°C, 100°C, 150°C

Case



DO35 (Glass)

Note: 1 A suffix= R_{ZT} max = 10Ω
no A suffix= R_{ZT} max = 15Ω

Note: 2 ESA Qualified products.

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1/4M2.4AZ10	1N5221B
1/4M2.7AZ10	1N5223B
1/4M3.0AZ10	1N5225B
1/4M3.3AZ10	1N5226B
1/4M3.6AZ10	1N5227B
1/4M3.6AZ10	1N5227B
1/4M3.9AZ10	1N5228B
1/4M4.3AZ10	1N5229B
1/4M4.7AZ10	1N5230B
1/4M5.1AZ10	1N5231B
1/4M5.6AZ10	1N5232B
1/4M6.2AZ10	1N5234B
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1/4M7.5AZ10	1N5236B
1/4M8.2AZ10	1N5237B
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1/4M10AZ10	1N5240B
1/4M11AZ10	1N5241B
1/4M12AZ10	1N5242B
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1/4M14AZ10	1N5244B
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1EZ120D5	C120
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1EZ160D5	C160
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INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
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1N2001	1N5279B
1N2032	1N4732A
1N2033	1N4734A
1N2034	1N4736A
1N2035	1N4739A
1N2036	1N4740A
1N2037	1N4743A
1N2038	1N4745A
1N2039	1N4747A
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1N2625	1N937
1N2625A	1N937A
1N2625B	1N937B
1N2626	1N938
1N2626A	1N938A
1N2626B	1N938B
1N2765	1N823A
1N2765A	1N825A
1N2766	1N1736A
1N2766A	1N1736A
1N2783	1N3000A
1N2790	1N3156
1N3020A	1N3020A
1N3021A	1N3021A
1N3022A	1N3022A
1N3023A	1N3023A
1N3024A	1N3024A
1N3025A	1N3025A
1N3026A	1N3026A
1N3027A	1N3027A
1N3028A	1N3028A
1N3029A	1N3029A
1N3030A	1N3030A
1N3031A	1N3031A
1N3032A	1N3032A
1N3033A	1N3033A
1N3034A	1N3034A
1N3035A	1N3035A
1N3036A	1N3036A
1N3037A	1N3037A
1N3038A	1N3038A
1N3039A	1N3039A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N3040A	1N3040A
1N3041A	1N3041A
1N3042A	1N3042A
1N3043A	1N3043A
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1N3048A	1N3048A
1N3049A	1N3049A
1N3050A	1N3050A
1N3051A	1N3051A
1N3098A	1N3046A
1N3099A	1N3048A
1N3100A	1N3050A
1N3101A	1N3051A
1N3112	1N4737A
1N3148	1N3155A
1N3154	1N3154
1N3154A	1N3154A
1N3155	1N3155
1N3155A	1N3155A
1N3156	1N3156
1N3156A	1N3156A
1N3157	1N3157
1N3157A	1N3157A
1N3199	1N3155
1N3200	1N3156
1N3201	1N3156
1N3202	1N3157
1N3411	1N5234B
1N3412	1N5235B
1N3413	1N5236B
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1N3416	1N5242B
1N3417	1N5245B
1N3418	1N5248B
1N3419	1N5251B
1N3420	1N5254B
1N3421	1N5256B
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1N3426	1N5266B
1N3427	1N5268B
1N3428	1N5271B
1N3429	1N5273B
1N3430	1N5276B
1N3431	1N5279B
1N3432	1N5281B
1N3433	1N4738A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
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1N3435	1N4742A
1N3436	1N4744A
1N3437	1N4746A
1N3438	1N4748A
1N3439	1N4750A
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1N3442	1N4756A
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1N3445	1N4738A
1N3446	1N4740A
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1N3452	1N4751A
1N3453	1N4752A
1N3454	1N4754A
1N3455	1N4756A
1N3456	1N4758A
1N3457	1N4760A
1N3458	1N4762A
1N3459	1N4764A
1N3460	1N4188B
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1N3462	1N4192B
1N3463	1N4193B
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1N3496	1N823
1N3497	1N825
1N3498	1N827
1N3499	1N829
1N3500	1N821
1N3506	1N5226B
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1N3508	1N5228B
1N3509	1N5229B
1N3510	1N5230B
1N3511	1N5231B
1N3512	1N5232B
1N3513	1N5234B
1N3514	1N5235B
1N3515	1N5236B
1N3516	1N5237B
1N3517	1N5239B
1N3518	1N5240B
1N3519	1N5241B
1N3520	1N5242B
1N3521	1N5243B
1N3522	1N5245B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N3523	1N5246B
1N3524	1N5248B
1N3525	1N5250B
1N3526	1N5251B
1N3527	1N5252B
1N3528	1N5254B
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1N3531	1N5258B
1N3532	1N5259B
1N3533	1N5260B
1N3534	1N5261B
1N3553	1N821
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1N3677B	1N4738A*
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1N3679B	1N4740A*
1N3680B	1N4741A*
1N3681B	1N4742A*
1N3682B	1N4743A*
1N3683B	1N4744A*
1N3684B	1N4745A*
1N3685B	1N4746A*
1N3686B	1N4747A*
1N3687B	1N4748A*
1N3688B	1N4749A*
1N3689B	1N4750A*
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1N3693B	1N4754A*
1N3694B	1N4755A*
1N3695B	1N4756A*
1N3696B	1N4757A*
1N3697B	1N4758A*
1N3700B	1N4761A*
1N3701B	1N4762A*
1N3702B	1N4763A*
1N3703B	1N4764A*
1N3704B	1N4187B
1N3705B	1N4188B
1N3706B	1N4189B
1N3707B	1N4190B
1N3709B	1N4192B
1N3710B	1N4193B
1N3779	1N821A
1N3780	1N821A
1N3781	1N823A
1N3782	1N825A
1N3783	1N827A
1N3784	1N829A
1N4010	1N821

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4095	1N5231A
1N4096	1N4763A
1N4097	1N4764A
1N4099	1N4099
1N4100	1N4100
1N4101	1N4101
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1N4105	1N4105
1N4106	1N4106
1N4107	1N4107
1N4108	1N4108
1N4109	1N4109
1N4110	1N4110
1N4111	1N4111
1N4112	1N4112
1N4113	1N4113
1N4114	1N4114
1N4115	1N4115
1N4116	1N4116
1N4117	1N4117
1N4118	1N4118
1N4167B	1N4745A
1N4168B	1N4746A
1N4169B	1N4747A
1N4170B	1N4748A
1N4171B	1N4749A
1N4172B	1N4750A
1N4173B	1N4751A
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1N4176B	1N4754A
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1N4179B	1N4757A
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1N4181B	1N4759A
1N4182B	1N4760A
1N4183B	1N4761A
1N4184B	1N4762A
1N4185B	1N4763A
1N4186B	1N4764A
1N4187B	1N4187B
1N4188B	1N4188B
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1N4191B	1N4191B
1N4192B	1N4192B
1N4193B	1N4193B
1N4323B	1N4736A
1N4324B	1N4737A
1N4325B	1N4738A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4326B	1N4739A
1N4327B	1N4740A
1N4328B	1N4741A
1N4329B	1N4742A
1N4330B	1N4743A
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1N4333B	1N4746A
1N4334B	1N4747A
1N4335B	1N4748A
1N4336B	1N4749A
1N4337B	1N4750A
1N4338B	1N4751A
1N4339B	1N4752A
1N4340B	1N4753A
1N4341B	1N4754A
1N4342B	1N4755A
1N4343B	1N4756A
1N4344B	1N4757A
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1N4346B	1N4759A
1N4347B	1N4760A
1N4348B	1N4761A
1N4349B	1N4762A
1N4350B	1N4763A
1N4351B	1N4764A
1N4352B	1N4187B
1N4353B	1N4188B
1N4354B	1N4189B
1N4355B	1N4190B
1N4357B	1N4192B
1N4358B	1N4193B
1N4370	1N5221B
1N4371	1N5223B
1N4372	1N5225B
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1N4402	1N4738A
1N4403	1N4739A
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1N4406	1N4742A
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1N4411	1N4747A
1N4412	1N4748A
1N4413	1N4749A
1N4414	1N4750A
1N4415	1N4751A
1N4416	1N4752A
1N4417	1N4753A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4418	1N4754A
1N4419	1N4755A
1N4420	1N4756A
1N4421	1N4757A
1N4422	1N4758A
1N4423	1N4759A
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1N4427	1N4763A
1N4428	1N4764A
1N4429	1N4187B
1N4430	1N4188B
1N4431	1N4189B
1N4432	1N4190B
1N4434	1N4192B
1N4435	1N4193B
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1N4462	1N4737A
1N4463	1N4738A
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1N4482	1N4757A
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1N4484	1N4759A
1N4485	1N4760A
1N4486	1N4761A
1N4487	1N4762A
1N4488	1N4763A
1N4489	1N4764A
1N4490	1N4187B
1N4491	1N4188B
1N4492	1N4189B
1N4493	1N4190B
1N4494	1N4191B
1N4495	1N4192B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4496	1N4193B
1N4499	1N4735A
1N4503	1N4752A
1N4504	1N5388B
1N4565	1N4565
1N4565A	1N4565A
1N4566	1N4566
1N4566A	1N4566A
1N4567	1N4567
1N4567A	1N4567A
1N4568	1N4568
1N4568A	1N4568A
1N4569	1N4569
1N4569A	1N4569A
1N4570	1N4570
1N4570A	1N4570A
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1N4571A	1N4571A
1N4572	1N4572
1N4572A	1N4572A
1N4573	1N4573
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1N4574	1N4574
1N4574A	1N4574A
1N4575	1N4575
1N4575A	1N4575A
1N4576	1N4576
1N4576A	1N4576A
1N4577	1N4577
1N4577A	1N4577A
1N4578	1N4578
1N4578A	1N4578A
1N4579	1N4579
1N4579A	1N4579A
1N4580	1N4580
1N4580A	1N4580A
1N4581	1N4581
1N4581A	1N4581A
1N4582	1N4582
1N4582A	1N4582A
1N4583	1N4583
1N4583A	1N4583A
1N4584	1N4584
1N4584A	1N4584A
1N4611	1N4576A
1N4611A	1N4577A
1N4611B	1N4578A
1N4611C	1N4579A
1N4612	1N4581A
1N4612A	1N4582A
1N4612B	1N4583A
1N4612C	1N4584A
1N4613	1N4581A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4613A	1N4582A
1N4613B	1N4583A
1N4613C	1N4584A
1N4614	1N4614
1N4615	1N4615
1N4616	1N4616
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1N4623	1N4623
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1N4627	1N4627
1N4628	1N4736A
1N4629	1N4737A
1N4630	1N4738A
1N4631	1N4739A
1N4632	1N4740A
1N4633	1N4741A
1N4634	1N4742A
1N4635	1N4743A
1N4636	1N4744A
1N4637	1N4745A
1N4638	1N4746A
1N4639	1N4747A
1N4640	1N4748A
1N4641	1N4749A
1N4642	1N4750A
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1N4644	1N4752A
1N4645	1N4753A
1N4646	1N4754A
1N4647	1N4755A
1N4648	1N4756A
1N4649	1N4728A
1N4650	1N4729A
1N4651	1N4730A
1N4652	1N4731A
1N4653	1N4732A
1N4654	1N4733A
1N4655	1N4734A
1N4656	1N4735A
1N4657	1N4736A
1N4658	1N4737A
1N4659	1N4738A
1N4660	1N4739A
1N4661	1N4740A
1N4662	1N4741A
1N4663	1N4742A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4664	1N4743A
1N4665	1N4744A
1N4666	1N4745A
1N4667	1N4746A
1N4668	1N4747A
1N4669	1N4748A
1N4670	1N4749A
1N4671	1N4750A
1N4672	1N4751A
1N4673	1N4752A
1N4674	1N4753A
1N4675	1N4754A
1N4676	1N4755A
1N4677	1N4756A
1N4728A	1N4728A
1N4729A	1N4729A
1N4730A	1N4730A
1N4731A	1N4731A
1N4732A	1N4732A
1N4733A	1N4733A
1N4734A	1N4734A
1N4735A	1N4735A
1N4736A	1N4736A
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1N4738A	1N4738A
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1N4753A	1N4753A
1N4754A	1N4754A
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1N4756A	1N4756A
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1N4758A	1N4758A
1N4760A	1N4760A
1N4761A	1N4761A
1N4762A	1N4762A
1N4763A	1N4763A
1N4764A	1N4764A
1N4831B	1N4739A
1N4832B	1N4740A
1N4833B	1N4741A
1N4834B	1N4742A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
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1N4836B	1N4744A
1N4837B	1N4745A
1N4838B	1N4746A
1N4839B	1N4747A
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1N4841B	1N4749A
1N4842B	1N4750A
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1N4844B	1N4752A
1N4845B	1N4753A
1N4846B	1N4754A
1N4847B	1N4755A
1N4848B	1N4756A
1N4849B	1N4757A
1N4850B	1N4758A
1N4851B	1N4759A
1N4852B	1N4760A
1N4853B	1N4761A
1N4854B	1N4762A
1N4855B	1N4763A
1N4857B	1N4187B
1N4858B	1N4188B
1N4859B	1N4189B
1N4860B	1N4190B
1N4881	1N4747A
1N4882	1N4753A
1N4883	1N4742A
1N4884	1N4747A
1N4954	1N5342B
1N4955	1N5343B
1N4956	1N5344B
1N4957	1N5346B
1N4958	1N5347B
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1N4962	1N5352B
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1N4972	1N5366B
1N4973	1N5367B
1N4974	1N5368B
1N4975	1N5369B
1N4976	1N5370B
1N4977	1N5372B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N4978	1N5373B
1N4979	1N5374B
1N4980	1N5375B
1N4981	1N5377B
1N4982	1N5378B
1N4983	1N5379B
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1N4987	1N5384B
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1N5009A	1N4729A
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1N5013A	1N4733A
1N5014A	1N4734A
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1N5017A	1N4737A
1N5018A	1N4738A
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1N5050A	1N4763A
1N5051A	1N4764A
1N5063	1N4736A
1N5064	1N4737A
1N5065	1N4738A
1N5066	1N4739A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N5067	1N4740A
1N5068	1N4741A
1N5069	1N4743A
1N5071	1N4744A
1N5072	1N4745A
1N5073	1N4746A
1N5074	1N4748A
1N5075	1N4749A
1N5076	1N4750A
1N5077	1N4751A
1N5078	1N4752A
1N5079	1N4753A
1N5080	1N4754A
1N5082	1N4755A
1N5084	1N4756A
1N5086	1N4757A
1N5087	1N4758A
1N5089	1N4759A
1N5090	1N4760A
1N5092	1N4761A
1N5094	1N4762A
1N5095	1N4763A
1N5118	1N5341B
1N5122	1N5371B
1N5126	1N5382B
1N5127	1N5385B
1N5128	1N5387B
1N5221B	1N5221B
1N5223B	1N5223B
1N5225B	1N5225B
1N5226B	1N5226B
1N5227B	1N5227B
1N5228B	1N5228B
1N5229B	1N5229B
1N5230B	1N5230B
1N5231B	1N5231B
1N5232B	1N5232B
1N5234B	1N5234B
1N5236B	1N5236B
1N5237B	1N5237B
1N5238B	1N5238B
1N5239B	1N5239B
1N5240B	1N5240B
1N5241B	1N5241B
1N5242B	1N5242B
1N5243B	1N5343B
1N5244B	1N5244B
1N5245B	1N5245B
1N5246B	1N5246B
1N5247B	1N5247B
1N5248B	1N5248B
1N5249B	1N5249B
1N5250B	1N5250B
1N5251B	1N5251B
1N5252B	1N5252B
1N5253B	1N5253B
1N5253B	1N5253B
1N5254B	1N5254B
1N5255B	1N5255B
1N5256B	1N5256B
1N5257B	1N5257B
1N5258B	1N5258B
1N5259B	1N5259B
1N5260B	1N5260B
1N5261B	1N5261B
1N5262B	1N5262B
1N5263B	1N5263B
1N5264B	1N5264B
1N5265B	1N5265B
1N5266B	1N5266B
1N5267B	1N5267B
1N5268B	1N5268B
1N5269B	1N5269B
1N5270B	1N5270B
1N5271B	1N5271B
1N5272B	1N5272B
1N5273B	1N5273B
1N5274B	1N5274B
1N5275B	1N5275B
1N5276B	1N5276B
1N5277B	1N5277B
1N5278B	1N5278B
1N5279B	1N5279B
1N5281B	1N5281B
1N5334B	1N5334B
1N5335B	1N5335B
1N5336B	1N5336B
1N5337B	1N5337B
1N5338B	1N5338B
1N5339B	1N5339B
1N5341B	1N5341B
1N5342B	1N5342B
1N5343B	1N5343B
1N5344B	1N5344B
1N5345B	1N5345B
1N5346B	1N5346B
1N5347B	1N5347B
1N5348B	1N5348B
1N5349B	1N5349B
1N5350B	1N5350B
1N5351B	1N5351B
1N5352B	1N5352B
1N5353B	1N5353B
1N5354B	1N5354B
1N5355B	1N5355B
1N5356B	1N5356B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N5357B	1N5357B
1N5358B	1N5358B
1N5359B	1N5359B
1N5360B	1N5360B
1N5361B	1N5361B
1N5362B	1N5362B
1N5363B	1N5363B
1N5364B	1N5364B
1N5365B	1N5365B
1N5366B	1N5366B
1N5367B	1N5367B
1N5368B	1N5368B
1N5369B	1N5369B
1N5370B	1N5370B
1N5371B	1N5371B
1N5372B	1N5372B
1N5373B	1N5373B
1N5374B	1N5374B
1N5375B	1N5375B
1N5376B	1N5376B
1N5377B	1N5377B
1N5378B	1N5378B
1N5379B	1N5379B
1N5380B	1N5380B
1N5381B	1N5381B
1N5383B	1N5383B
1N5384B	1N5384B
1N5385B	1N5385B
1N5386B	1N5386B
1N5388B	1N5388B
1N5522A,B	T-LVA47A
1N5523A,B	T-LVA51A
1N5524A,B	T-LVA56A
1N5525A,B	T-LVA62A
1N5526A,B	T-LVA68A
1N5527A,B	T-LVA75A
1N5528A,B	T-LVA82A
1N5529A,B	T-LVA91A
1N5530A,B	T-LVA100A
1N5728	1N5230B
1N5729	1N5231B
1N5730	1N5232B
1N5731	1N5234B
1N5732B	1N5235B
1N5733B	1N5236B
1N5734B	1N5237B
1N5735B	1N5239B
1N5736B	1N5240B
1N5738B	1N5242B
1N5739B	1N5243B
1N5740B	1N5245B
1N5741B	1N5246B
1N5742B	1N5248B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N5743B	1N5250B
1N5744B	1N5251B
1N5745B	1N5252B
1N5746B	1N5254B
1N5747B	1N5256B
1N5748B	1N5257B
1N5749	1N5258B
1N5750	1N5259B
1N5751	1N5760B
1N5752	1N5261B
1N5753	1N5262B
1N5837	1N5221B
1N5839	1N5223B
1N5841	1N5225B
1N5842	1N5226B
1N5843	1N5227B
1N5844	1N5228B
1N5845	1N5229B
1N5846	1N5230B
1N5847	1N5231B
1N5848	1N5232B
1N5850	1N5234B
1N5851	1N5235B
1N5852	1N5236B
1N5853	1N5237B
1N5855	1N5239B
1N5856	1N5240B
1N5858	1N5242B
1N5859	1N5243B
1N5861	1N5245B
1N5862	1N5246B
1N5864	1N5248B
1N5866	1N5250B
1N5867	1N5251B
1N5868	1N5252B
1N5870	1N5254B
1N5872	1N5256B
1N5873	1N5257B
1N5874	1N5258B
1N5875	1N5259B
1N5876	1N5260B
1N5877	1N5261B
1N5878	1N5262B
1N5879	1N5263B
1N5881	1N5265B
1N5882	1N5266B
1N5883	1N5267B
1N5884	1N5268B
1N5886	1N5270B
1N5887	1N5271B
1N5888	1N5272B
1N5889	1N5273B
1N5890	1N5274B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N5892	1N5276B
1N5893	1N5277B
1N5895	1N5279B
1N5897	1N5281B
1N5914A	BZY97C3V6
1N5915A	BZY97C3V9
1N5916A	BZY97C4V3
1N5917A	BZY97C4V7
1N5918A	BZY97C5V1
1N5919A	BZY97C5V6
1N5920A	BZY97C6V2
1N5921A	BZY97C6V8
1N5922A	BZY97C7V5
1N5923A	BZY97C8V2
1N5924A	BZY97C9V1
1N5925A	BZY97C10
1N5926A	BZY97C11
1N5927A	BZY97C12
1N5928A	BZY97C13
1N5929A	BZY97C15
1N5930A	BZY97C16
1N5931A	BZY97C18
1N5932A	BZY97C20
1N5933A	BZY97C22
1N5934A	BZY97C24
1N5935A	BZY97C27
1N5936A	BZY97C30
1N5937A	BZY97C33
1N5938A	BZY97C36
1N5939A	BZY97C39
1N5940A	BZY97C43
1N5941A	BZY97C47
1N5942A	BZY97C51
1N5943A	BZY97C56
1N5944A	BZY97C62
1N5945A	BZY97C68
1N5946A	BZY97C75
1N5947A	BZY97C82
1N5948A	BZY97C91
1N5949A	BZY97C100
1N5950A	BZY97C110
1N5951A	BZY97C120
1N5952A	BZY97C130
1N5953A	BZY97C150
1N5954A	BZY97C160
1N5955A	BZY97C180
1N5956A	BZY97C200
1N5985A	1N5221B
1N5986A	1N5223B
1N5987A	1N5225B
1N5988A	1N5226B
1N5969A	1N5227B
1N5990A	1N5228B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
1N5991A	1N5229B
1N5992A	1N5230B
1N5993A	1N5231B
1N5994A	1N5232B
1N5995A	1N5234B
1N5996A	1N5235B
1N5997A	1N5236B
1N5998A	1N5237B
1N5999A	1N5239B
1N6000A	1N5240B
1N6001A	1N5241B
1N6002A	1N5242B
1N6003A	1N5243B
1N6004A	1N5245B
1N6005A	1N5246B
1N6006A	1N5248B
1N6007A	1N5250B
1N6008A	1N5251B
1N6009A	1N5252B
1N6010A	1N5254B
1N6011A	1N5256B
1N6012A	1N5257B
1N6013A	1N5258B
1N6014A	1N5259B
1N6015A	1N5260B
1N6016A	1N5261B
1N6017A	1N5262B
1N6018A	1N5263B
1N6019A	1N5265B
1N6020A	1N5266B
1N6021A	1N5267B
1N6022A	1N5268B
1N6023A	1N5270B
1N6024A	1N5271B
1N6025A	1N5272B
1N6026A	1N5273B
1N6027	1N5274B
1N6028	1N5276B
1N6029	1N5277B
1N6030	1N5279B
1N6031	1N5281B
3EZ6.8D,10,5	1M5342B.
↓	↓
3EZ200D,10,5	1N5388B
3R7.5,A,B	1N5343B
↓	↓
3R200,A,B	1N5388B
3TZ7.5,A,B,C,D	1N5343B
↓	↓
3TZ200.A,B,C,D	1N5388B.
3VR6.A	1N5340B
↓	↓
3VR150,A	1N53838

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
5EZ3,6D,10,5	1N5334B
↓	↓
5EZ200D,10,5	1N5388B
5Z5338	1N5338B
↓	↓
5Z5364	1N5364B
5ZS3.6,A,B	1N5334B
↓	↓
5ZS100,A,B	1N5378B
BZM85C2V7	
↓	
BZM85C200	
BZV40C3V6	1N5334B
↓	↓
BZV40C200	1N5388B
BZV47C3V9	
↓	
BZV47C200	
BZV48C3V6	1N5334B
↓	↓
BZV48C200	1N5388B
BZV58C3V6	BZV58C3V6
↓	↓
BZV58C200	BZV58C200
BZV27	1N821
BZV28	1N823
BZV29	1N825
BZV30	1N827
BZV31	1N829
BZV27A	1N821A
BZV28A	1N823A
BZV29A	1N825A
BZV30A	1N827A
BZV31A	1N829A
BZV32,A,B	1N935,A,B
BZV33,A,B	1N936,A,B
BZV34,A,B	1N937,A,B
BZV35,A,B	1N938,A,B
BZV36,A,B	1N939,A,B
BZX46 C2V7	BZX55C2V7
↓	↓
BZX46 C91	BZX55C91
BZX55 C2V7	
↓	
BZX55 C200	
BZX61 C7V5	BZV47C7V5
↓	↓
BZX61 C75	BZV47C75
BZX70 C7V5	1N5343B
↓	↓
BZX70 C75	1N5374B
BZX79 C2V4	
↓	

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
BZX79 C91	
BZX83 C2V7	BZX55 C2V7
↓	↓
BZX83C75	BZX55 C75
BZX84C2V4	
↓	
BZX84C75	
BZX85 C3V3	
↓	
BZX85 C200	
BZX97 C2V7	BZX55 C2V7
↓	↓
BZX97 C47	BZX55 C47
BZY88 C2V7	BZX55C2V7
↓	↓
BZY88 C33	BZX55C33
BZY96 C6V8	1N3016B
↓	↓
BZY96 C75	1N3041B
BZY97 C3V9	
↓	
BZY97 C200	
CD4112	1N3154
↓	↓
CD4115	1N3137
CD3100001	1N4728A
↓	↓
CD3100025	1N4753A
CD3112016	1N4736A
↓	↓
CD3112032	1N4752A
DSZ3006	1N5340B
↓	↓
DSZ3100	1N5378B
MC6400,MC6401	1N821
MC6402,MC6403	1N823
MC6404,MC6405	1N825
MC6406,M6407	
MC6416	1N935
MC6417	1N935A
MC6418	1N936
MC6419	1N936A
MC6420	1N937
MC6421	1N937A
MC6422	1N938
MC6423	1N939A
MC6424,MC6425	1N829
MC6428	1N937
MC6429	1N939A
MLL5221	TMM5221B
↓	↓
MLL5270	TMM5270B
MLL4728	TM4728A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
↓	↓
MLL4764	TM4764A
MLV746A	1N5226B
↓	↓
MLV759A	1N5242B
MLV4370A	1N5221B
↓	↓
MLV4372A	1N5225B
MTC821,A SERIES	1N821,A SERIES
MTC935,A,B SERIES	1N935,A,B SERIES
MTC940,A,B SERIES	1N940,A,B SERIES
MZ92-2.7	1N5223B
MZ92-2.8	1N5223B
MZ92-3.0	1N5223B
MZ92-3.3	1N5223B
MZ92-3.6	1N5223B
MZ92-3.9	1N5223B
MZ92-4.3	1N5223B
MZ92-4.7	1N5223B
MZ92-5.1	1N5223B
MZ92-5.6	1N5232B
MZ92-6.0	1N5233B
MZ92-6.2	1N5233B
MZ92-6.8	1N5233B
MZ92-7.5	1N5233B
MZ92-8.2	1N5233B
MZ92-8.7	1N5233B
MZ92-9.1	1N5233B
MZ92-10	1N5233B
MZ92-11	1N5233B
MZ92-12	1N5242B
MZ92-13	1N5243B
MZ92-14	1N5243B
MZ92-15	1N5243B
MZ92-16	1N5243B
MZ92-17	1N5243B
MZ92-18	1N5243B
MZ92-19	1N5243B
MZ92-20	1N5243B
MZ92-22	1N5243B
MZ92-24	1N5252B
MZ92-25	1N5253B
MZ92-27	1N5253B
MZ92-28	1N5253B
MZ92-30	1N5253B
MZ92-33	1N5253B
MZ92-36	1N5253B
MZ92-39	1N5253B
MZ92-43	1N5253B
MZ92-47	1N5253B
MZ92-51	1N5262B
MZ92-56	1N5263B
MZ92-60	1N5263B
MZ92-62	1N5263B
MZ92-68	1N5263B
MZ92-75	1N5263B
MZ92-82	1N5263B
MZ92-87	1N5263B
MZ92-91	1N5263B
MZ92-100	1N5263B
MZ92-110	1N5272B
MZ92-120	1N5273B
MZ92-130	1N5273B
MZ92-140	1N5273B
MZ92-150	1N5273B
MZ92-160	1N5273B
MZ92-170	1N5273B
MZ92-180	1N5273B
MZ92-190	1N5273B
MZ92-200	1N5281B
MZ500-1	1N5221B
MZ500-2	1N5223B
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MZ500-6	1N5228B
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MZ500-8	1N5230B
MZ500-9	1N5231B
MZ500-10	1N5232B
MZ500-11	1N5234B
MZ500-12	1N5235B
MZ500-13	1N5236B
MZ500-14	1N5237B
MZ500-15	1N5239B
MZ500-16	1N5240B
MZ500-17	1N5241B
MZ500-18	1N5242B
MZ500-19	1N5243B
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MZ500-21	1N5246B
MZ500-22	1N5248B
MZ500-23	1N5250B
MZ500-24	1N5251B
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MZ500-26	1N5254B
MZ500-27	1N5256B
MZ500-28	1N5257B
MZ500-29	1N5258B
MZ500-30	1N5259B
MZ500-31	1N5260B
MZ500-32	1N5261B
MZ500-33	1N5262B
MZ500-34	1N5263B
MZ500-35	1N5265B
MZ500-36	1N5266B

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
MZ500-37	1N5267B
MZ500-38	1N5268B
MZ500-39	1N5270B
MZ500-40	1N5271B
MZ623-9	1N4743A
MZ623-9A	1N4743A
MZ623-9B	1N4743A
MZ623-12	1N4745A
MZ623-12A	1N4745A
MZ623-12B	1N4745A
MZ623-14	1N4746A
MZ623-14A	1N4746A
MZ623-14B	1N4746A
MZ623-18	1N4749A
MZ623-18A	1N4749A
MZ623-18B	1N4749A
MZ623-25	1N4755A
MZ623-25A	1N4755A
MZ1000-1	1N4728A
MZ1000-2	1N4729A
MZ1000-3	1N4730A
MZ1000-4	1N4731A
MZ1000-5	1N4732A
MZ1000-6	1N4733A
MZ1000-7	1N4734A
MZ1000-8	1N4735A
MZ1000-9	1N4736A
MZ1000-10	1N4737A
MZ1000-11	1N4738A
MZ1000-12	1N4739A
MZ1000-13	1N4740A
MZ1000-14	1N4741A
MZ1000-15	1N4742A
MZ1000-16	1N4743A
MZ1000-17	1N4744A
MZ1000-18	1N4745A
MZ1000-19	1N4746A
MZ1000-20	1N4747A
MZ1000-21	1N4748A
MZ1000-22	1N4749A
MZ1000-23	1N4750A
MZ1000-24	1N4751A
MZ1000-25	1N4752A
MZ1000-26	1N4753A
MZ1000-27	1N4754A
MZ1000-28	1N4755A
MZ1000-29	1N4756A
MZ1000-30	1N4757A
MZ1000-31	1N4758A
MZ1000-32	1N4759A
MZ1000-33	1N4760A
MZ1000-34	1N4761A
MZ1000-36	1N4763A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
MZ1000-37	1N4764A
MZD2.7	BZY97C2V7
↓	↓
MZD33	BZY97C200
MZD2.7	BZX83C2V7
↓	↓
MZPD33	BZX83C33
MZPY3.9	ZPY3.9
↓	↓
MZPY100	ZPY100
MZP4728A	BZV47C3V3
↓	↓
MZP4764A	BZV47C100
T-LVA347A	
↓	
T-LVA3100A	
T-LVA450A	
↓	
T-LVA498A	
T-LVA47A	
T-LVA51A	
T-LVA56A	
T-LVA62A	
T-LVA68A	
T-LVA75A	
T-LVA82A	
T-LVA91A	
T-LVA100A	
TMM4614	
↓	
TMM4627	
TMM52218	
↓	
TMM5270B	
TM4187B	
↓	
TM4193B	
TM4728A	
↓	
TM4764A	
↓	
ZD6,8	1N3016B
↓	↓
ZD200	1N3051B
ZMM2,7	BZV55C2V7
↓	↓
ZMM51	BZV55C51
ZMM5226B	TMM5226B
↓	↓
ZMM52578	TMM5257B
ZM4729	TM4729A
↓	↓
ZM4752	TM4752A

INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT
ZM4100	TM4764A
ZMY3,9 ↓ ZMY100	TM4730A ↓ TM4764A
ZPD2.7 ↓ ZPD33	BZX85C2V7 ↓ BZX85C33
ZP4100	
ZP4120	
ZP4150	
ZP4180	
ZPY3.9 ↓ ZPY100	
ZY3,9 ↓ ZY200	BZV47C3V9 ↓ BZV47C200

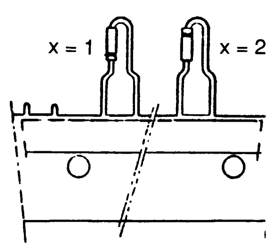
INDUSTRY PART NUMBER	SGS-THOMSON SIMILAR REPLACEMENT

	FILM 8 mm	FILM 12 mm	FILM 16 mm	AXIAL TAPING	RADIAL TAPING	BULK	BAND WIDTH 26 mm	BAND WIDTH 53 mm	BAND WIDTH 63 mm	REE	AMMOPAK	Q.ty per unit packaging	SUFFIXES	REMARKS
0.5 W Devices														
DO 35				•				•		•		5000		
				•			•				•	5000	B 2	
					•					•		4000	ARX*	
					•						•	3500	AZX*	
DO 35 Low Efficiency				•				•				5000		
Temp. compensated Zener						•						500	V	
DO 35 High Efficiency				•				•				1000		
Temp. compensated Zener						•						100	V	
DO 35				•				•				5000		
Low Noise						•						500	V	
Minimelf SMD	•									•		2500	Film	
SOT 23 SMD	•											3000	Film	
1.0 W Devices														
DO 41				•				•		•		3000		
MELF SMD		•										1500	Film	
DO 13						•						100		Box on request
				•					•	•		1000	B3	
1.5/2 W Devices														
F 126				•				•		•		6000		
5 W Devices														
CB 417				•				•		•		5000		
SOD6 SMD			•							•		2500		

Axial taping and reeling per IEC 286-1 norm (issue 1980) in compliance with IAE RS 296D norm
Radial taping and reeling per Avisert TDK Universal norm (ATU norm) in compliance to IEC 286-2 and EIA RS 468.

Taping of leadless component for automatic placement in compliance to IEC 286-3 and EIA 481

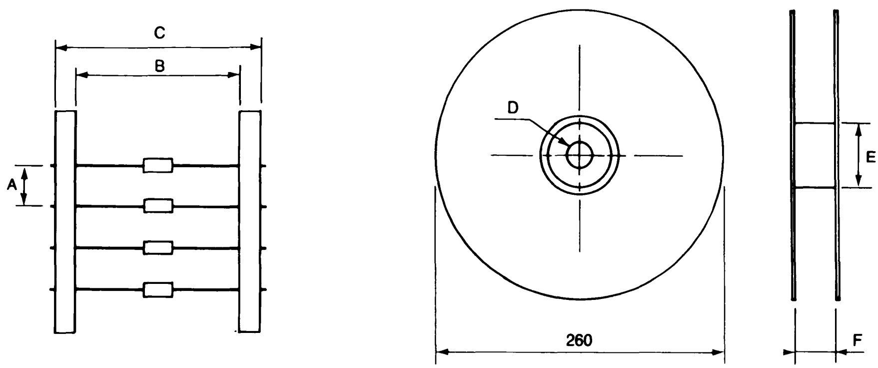
Designation example:
BZX 55C 2V4: Axial taping 53 mm. 5000 pieces per reel.
BZX 55C 2V4 AZ1: radial taping on ammopack (zig-zag), 3500 pieces taped as per figure X=1.



AXIAL TAPING

Case	Suffixes	Component spacing	Tape spacing		Reel dimensions		
		A	B	C	D	E	F
DO35	–	5 ± 0.5	53 ± 2	65 ± 2	20	40	70
DO35	B2	5 ± 0.5	26 ± 2	65 ± 2	20	40	70
DO41	–	± 0.5	53 ± 2	65 ± 2	20	40	70

Note: Sizes are given in millimeters

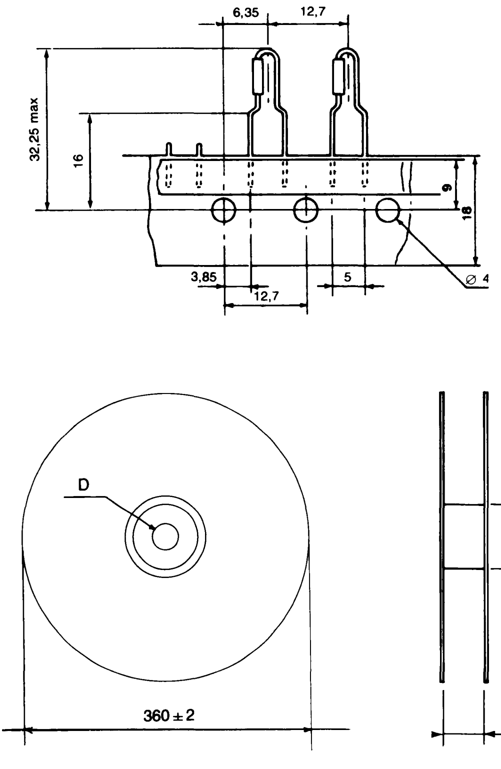


Note: All polarized components must be oriented in one direction
The Cathode lead lape shall be red and the anode tape shall be while

RADIAL TAPING

Case	Suffixes	Reel dimensions		
		D	E	F
DO35	ARX and AZX	30	80	40

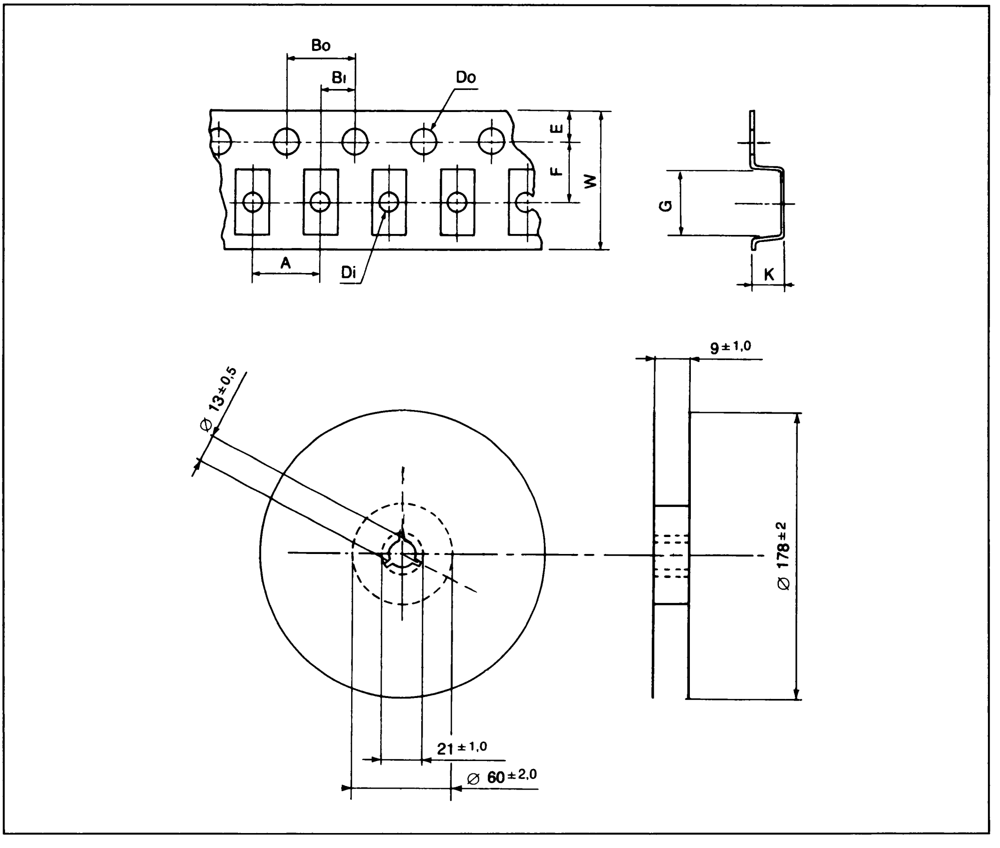
Note: Sizes are given in millimeters



SURFACE MOUNT

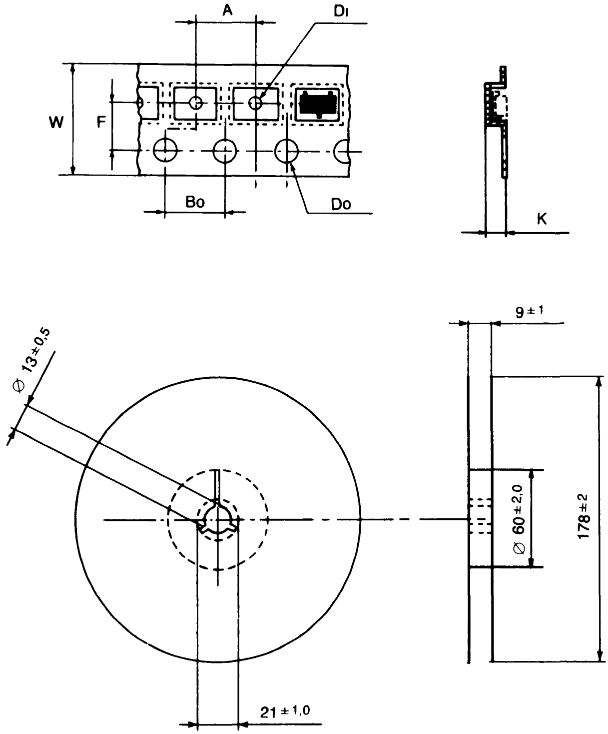
	Component Spacing	Holes Spacing		Holes Diameter		Holes Position		Compartment dimension	Compartment depth	Tape width
	A	Bo	Bi	Do	Di	E	F	G	K	W
Minimelf	4 ± 0,1	4 ± 0,1	2 ± 0,1	1,5	1	1,75	3,5	3,8	2,05	8
Melf	4 ± 0,1	4 ± 0,1	2 ± 0,1	1,5	1,5	1,75	5,5	5,3	2,9	12
SOT23	4 ± 0,1	4 ± 0,1		1,5	1		3,5		1,55	8

MINIMELF AND MELF:



All Polarised components have Cathode lead oriented towards the perfored side of the film.

SOT 23

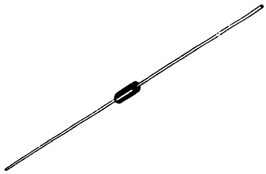


ZENER DIODES DATASHEETS

1N 821,A→1N 829,A

TEMPERATURE COMPENSATED ZENER DIODES

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 55 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 821	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	96	100
1N 823	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	48	50
1N 825	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	19	20
1N 827	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	9	10
1N 829	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	5	5
1N 821 A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	96	100
1N 823 A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	48	50
1N 825 A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	19	20
1N 827 A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	9	10
1N 829 A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	5	5

* On infinite heatsink with d = 4mm

** The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range Tests are performed at the indicated temperatures and the specified current

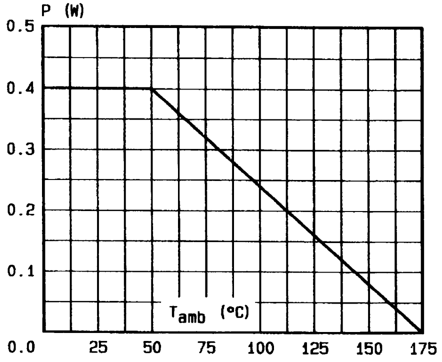


Fig.1 - Power dissipation versus ambient temperature.

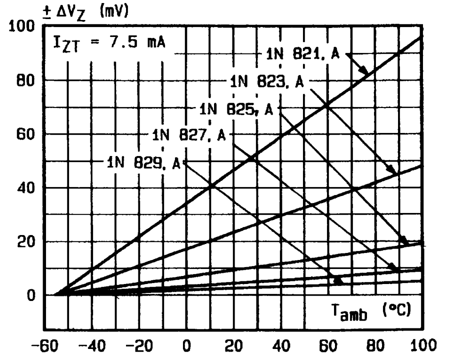
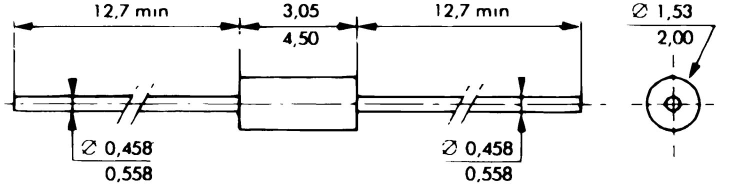


Fig.2 - Regulation voltage variation versus ambient temperature.

PACKAGE MECHANICAL DATA

DO 35 Glass



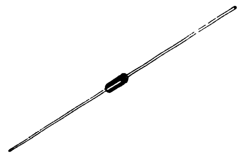
Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0 15g

SGS-THOMSON
MICROELECTRONICS

1N 935,A,B
1N 939,A,B

TEMPERATURE COMPENSATED ZENER DIODES

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
P_{tot}	Power Dissipation*	0.5	W
T_{stg} T_j	Storage and Junction Temperature Range	– 65 to 175 – 55 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case	230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)	ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 935	9	20	7.5	0 + 25 + 75	67	100
1N 936	9	20	7.5	0 + 25 + 75	33	50
1N 937	9	20	7.5	0 + 25 + 75	13	20
1N 938	9	20	7.5	0 + 25 + 75	6	10
1N 939	9	20	7 5	0 + 25 + 75	3	5
1N 935 A	9	20	7.5	– 55 0 + 25 + 75 + 100	139	100
1N 936 A	9	20	7.5	– 55 0 + 25 + 75 + 100	69	50
1N 937 A	9	20	7.5	– 55 0 + 25 + 75 + 100	27	20
1N 938 A	9	20	7.5	– 55 0 + 25 + 75 + 100	13	10
1N 939 A	9	20	7.5	– 55 0 + 25 + 75 + 100	7	5
1N 935 B	9	20	7.5	– 55 0 + 25 + 75 + 100 + 150	184	100
1N 936 B	9	20	7.5	– 55 0 + 25 + 75 + 100 + 150	92	50
1N 937 B	9	20	7.5	– 55 0 + 25 + 75 + 100 + 150	37	20
1N 938 B	9	20	7.5	– 55 0 + 25 + 75 + 100 + 150	18	10
1N 939 B	9	20	7.5	– 55 0 + 25 + 75 + 100 + 150	9	5

* On infinite heatsink with d = 4mm
* * The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range Tests are performed at the indicated temperatures and the specified current.

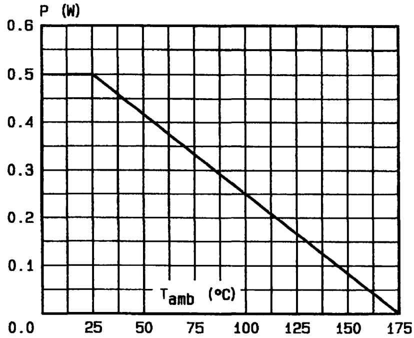


Fig.1 - Power dissipation versus ambient temperature.

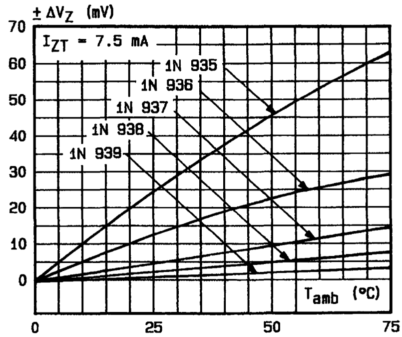


Fig.2a - Regulation voltage variation versus ambient temperature.

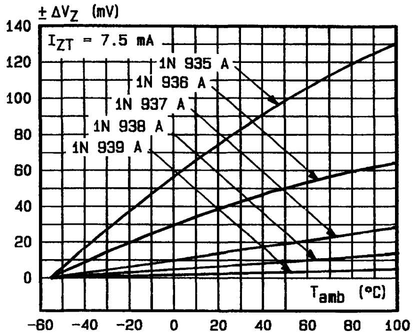


Fig.2b - Regulation voltage variation versus ambient temperature.

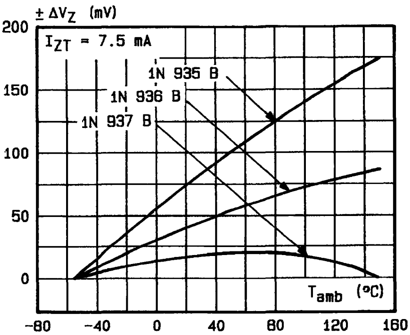
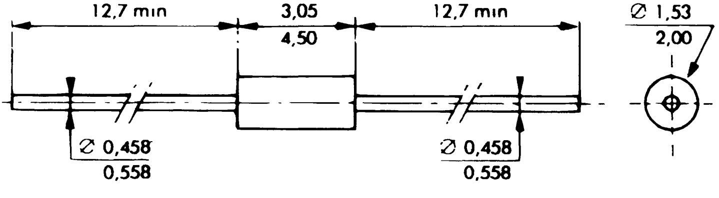


Fig.2c - Regulation voltage variation versus ambient temperature.

PACKAGE MECHANICAL DATA

DO 35 Glass



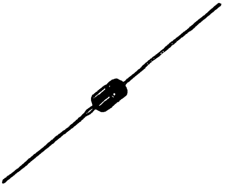
Cooling method : by convection and conduction.
Marking : clear, ring at cathode end.
Weight : 0.15g

SGS-THOMSON MICROELECTRONICS

1N 3016 B→1N 3051 B

ZENER DIODES

- VOLTAGE RANGE : 6.8V TO 200V
- WELDED, HERMETICALLY SEALED METAL CASE
- PACKAGE ACCORDING TO NORMALIZATION CCTU : F61 AND JEDEC DO-13



DO 13
(Metal)

DESCRIPTION

1W silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	1	W
I_{ZM}	Continuous Reverse Current*	T_{amb} = 50°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	125	°C/W

* On printed circuit : d = 25mm.

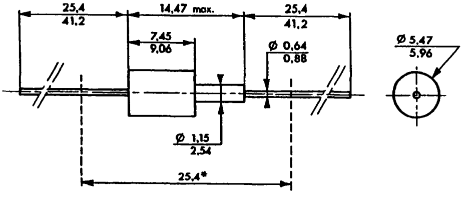
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

	Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT}* max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω)	(mA)	$\propto V_Z$ typ (10^{-4}/°C)	I_R/V_R max (μA)	V_R (V)	I_{ZM}* T_{amb} 50°C (mA)
P	1N 3016 B	6 8	3 5	37	700	1 0	4	150	5 2	140
	1N 3017 B	7 5	4	34	700	0 5	4 5	100	5 7	130
	1N 3018 B	8 2	4 5	31	700	0 5	4 8	50	6 2	110
	1N 3019 B	9 1	5	28	700	0 5	5 1	25	6.9	100
P	1N 3020 B	10	7	25	700	0 25	5 5	25	7 6	94
	1N 3021 B	11	8	23	700	0.25	6	5	8 4	86
P	1N 3022 B	12	9	21	700	0 25	6 5	5	9.1	79
	1N 3023 B	13	10	19	700	0.25	6.5	5	9 9	71
	1N 3024 B	15	14	17	700	0.25	7	5	11 4	64
	1N 3025 B	16	16	15.5	700	0.25	7	5	12 2	59
	1N 3026 B	18	20	14	750	0 25	7 5	5	13 7	52
	1N 3027 B	20	22	12 5	750	0 25	7 5	5	15 2	47
	1N 3028 B	22	23	11 5	750	0 25	8	5	16 7	43
P	1N 3029 B	24	25	10 5	750	0 25	8	5	18 2	39
	1N 3030 B	27	35	9 5	750	0.25	8 5	5	20 6	35
	1N 3031 B	30	40	8 5	1000	0 25	8 5	5	22 8	31
	1N 3032 B	33	45	7 5	1000	0.25	8.5	5	25.1	29
	1N 3032 B	36	50	7	1000	0.25	8 5	5	27 4	26
	1N 3034 B	39	60	6.5	1000	0.25	9	5	29.7	24
	1N 3035 B	43	70	6	1500	0.25	9	5	32 7	22
	1N 3036 B	47	80	5 5	1500	0 25	9	5	35 8	20
	1N 3037 B	51	95	5	1500	0.25	9	5	38 8	19
	1N 3038 B	56	110	4 5	2000	0 25	9	5	42 6	17
	1N 3039 B	62	125	4	2000	0 25	9	5	47 1	15
	1N 3040 B	68	150	3 7	2000	0 25	9	5	51 7	14
	1N 3041 B	75	175	3.3	2000	0 25	9	5	56	13
	1N 3042 B	82	200	3	3000	0 25	9	5	62.2	12
	1N 3043 B	91	250	2.8	3000	0 25	9	5	69.2	10
	1N 3044 B	100	350	2.5	3000	0 25	9	5	76	9 4
	1N 3045 B	110	450	2.3	4000	0 25	9 5	5	83 6	8.6
	1N 3046 B	120	550	2	4500	0 25	9 5	5	91 2	7 8
	1N 3047 B	130	700	1 9	5000	0 25	9 5	5	98.8	7 0
	1N 3048 B	150	1000	1 7	6000	0 25	9.5	5	114	6.4
	1N 3049 B	160	1100	1 6	6500	0 25	9 5	5	121 6	5.8
	1N 3050 B	180	1200	1 4	7000	0 25	9.5	5	136 8	5 2
	1N 3051 B	200	1500	1.2	8000	0 25	10	5	152	4 7

* Measure under thermal equilibrium and DC current test conditions
* * on printed circuit · d = 25mm.
Tolerance on nominal V_{ZT} values · ± 5%
P Preferred voltages.
Forward voltage drop . $V_F \leq$ 1 5V (T_{amb} = 25°C, I_F = 200mA).

PACKAGE MECHANICAL DATA

DO 13 Metal

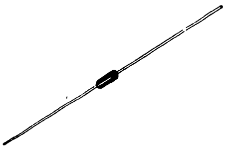


* The minimum axial length in which the device with its outputs bent at right angles can be placed is 25.4mm
Cooling method : by convection (method A)
Marking : type number.
Weight : 1.5g

1N 3154,A→1N 3157,A

TEMPERATURE COMPENSATED ZENER DIODES

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
P_{tot}	Power Dissipation*	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range	– 65 to 175 – 55 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case	230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	375	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)						ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 3154	8.4	15	10	– 55	0	+ 25	+ 75	+100		130	100
1N 3155	8.4	15	10	– 55	0	+ 25	+ 75	+100		65	50
1N 3156	8.4	15	10	– 55	0	+ 25	+ 75	+100		26	20
1N 3157	8.4	15	10	– 55	0	+ 25	+ 75	+100		13	10
1N 3154 A	8.4	15	10	– 55	0	+ 25	+ 75	+100	+150	172	100
1N 3155 A	8.4	15	10	– 55	0	+ 25	+ 75	+100	+150	86	50
1N 3156 A	8.4	15	10	– 55	0	+ 25	+ 75	+100	+150	34	20
1N 3157 A	8.4	15	10	– 55	0	+ 25	+ 75	+100	+150	17	10

* On infinite heatsink with d = 4mm

** The voltage reference diodes are characterized by the box method. The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range. Tests are performed at the indicated temperatures and the specified current.

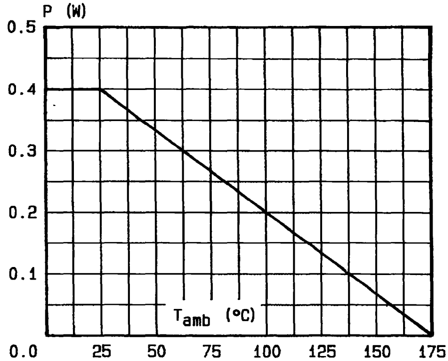


Fig.1 - Power dissipation versus ambient temperature.

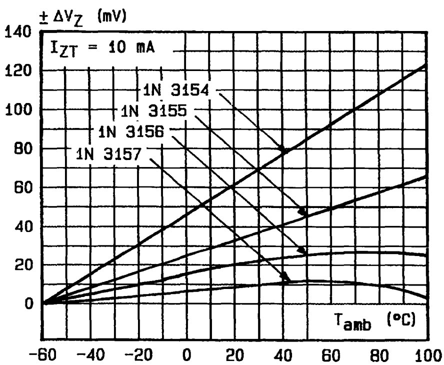


Fig.2a - Regulation voltage variation versus ambient temperature.

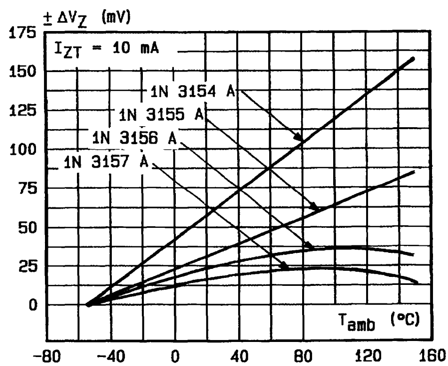
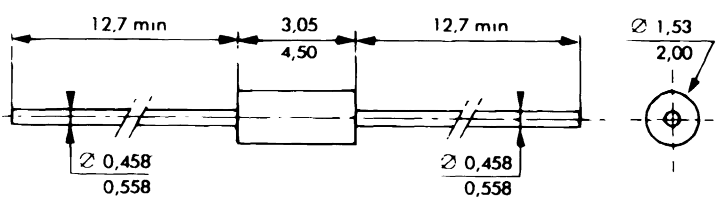


Fig.2b - Regulation voltage variation versus ambient temperature.

PACKAGE MECHANICAL DATA

DO 35 Glass



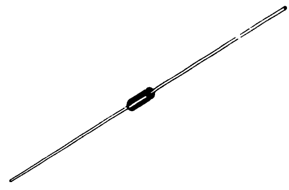
Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0 15g

SGS-THOMSON
MICROELECTRONICS

1N 4565,A → 1N 4584,A

TEMPERATURE COMPENSATED ZENER DIODES

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 65 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction - ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} @ max. (Ω)	I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 4565	6.4	200	0.5		0	+ 25	+ 75		48	100
1N 4566	6.4	200	0.5		0	+ 25	+ 75		24	50
1N 4567	6.4	200	0.5		0	+ 25	+ 75		10	20
1N 4568	6.4	200	0.5		0	+ 25	+ 75		5	10
1N 4569	6.4	200	0.5		0	+ 25	+ 75		2	5
1N 4565 A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	99	100
1N 4566 A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	50	50
1N 4567 A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	20	20
1N 4568 A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	10	10
1N 4569 A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	5	5

* On infinite heatsink with d = 4mm

** The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range Tests are performed at the indicated temperatures and the specified current.

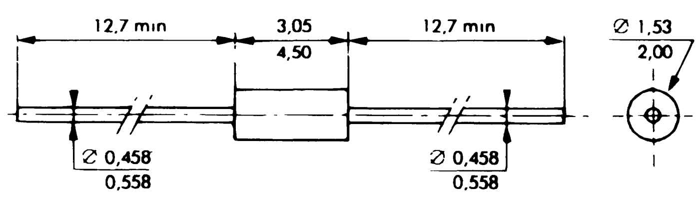
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified) (continued)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 4570	6.4	100	1		0	+ 25	+ 75		48	100
1N 4571	6.4	100	1		0	+ 25	+ 75		24	50
1N 4572	6.4	100	1		0	+ 25	+ 75		10	20
1N 4573	6.4	100	1		0	+ 25	+ 75		5	10
1N 4574	6.4	100	1		0	+ 25	+ 75		2	5
1N 4570 A	6.4	100	1	– 55	0	+ 25	+ 75	+ 100	99	100
1N 4571 A	6.4	100	1	– 55	0	+ 25	+ 75	+ 100	50	50
1N 4572 A	6.4	100	1	– 55	0	+ 25	+ 75	+ 100	20	20
1N 4573 A	6.4	100	1	– 55	0	+ 25	+ 75	+ 100	10	10
1N 4574 A	6.4	100	1	– 55	0	+ 25	+ 75	+ 100	5	5
1N 4575	6.4	50	2		0	+ 25	+ 75		48	100
1N 4576	6.4	50	2		0	+ 25	+ 75		24	50
1N 4577	6.4	50	2		0	+ 25	+ 75		10	20
1N 4578	6.4	50	2		0	+ 25	+ 75		5	10
1N 4579	6.4	50	2		0	+ 25	+ 75		2	5
1N 4575 A	6.4	50	2	– 55	0	+ 25	+ 75	+ 100	99	100
1N 4576 A	6.4	50	2	– 55	0	+ 25	+ 75	+ 100	50	50
1N 4577 A	6.4	50	2	– 55	0	+ 25	+ 75	+ 100	20	20
1N 4578 A	6.4	50	2	– 55	0	+ 25	+ 75	+ 100	10	10
1N 4579 A	6.4	50	2	– 55	0	+ 25	+ 75	+ 100	5	5
1N 4580	6.4	25	4		0	+ 25	+ 75		48	100
1N 4581	6.4	25	4		0	+ 25	+ 75		24	50
1N 4582	6.4	25	4		0	+ 25	+ 75		10	20
1N 4583	6.4	25	4		0	+ 25	+ 75		5	10
1N 4584	6.4	25	4		0	+ 25	+ 75		2	5
1N 4580 A	6.4	25	4	– 55	0	+ 25	+ 75	+ 100	99	100
1N 4581 A	6.4	25	4	– 55	0	+ 25	+ 75	+ 100	50	50
1N 4582 A	6.4	25	4	– 55	0	+ 25	+ 75	+ 100	20	20
1N 4583 A	6.4	25	4	– 55	0	+ 25	+ 75	+ 100	10	10
1N 4584 A	6.4	25	4	– 55	0	+ 25	+ 75	+ 100	5	5

** The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range. Tests are performed at the indicated temperatures and the specified current

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method : by convection and conduction
Marking : clear, ring at cathode end.
Weight : 0.15g.

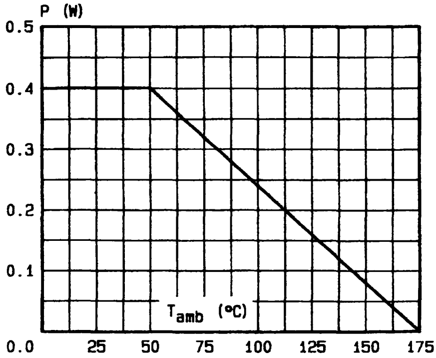


Fig.1 - Power dissipation versus ambient temperature.

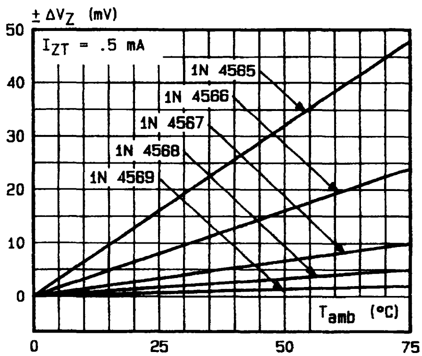


Fig.2a - Regulation voltage variation versus ambient temperature.

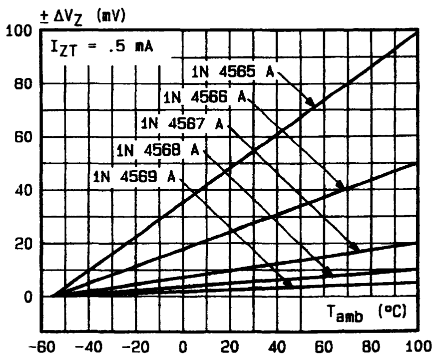


Fig.2b - Regulation voltage variation versus ambient temperature.

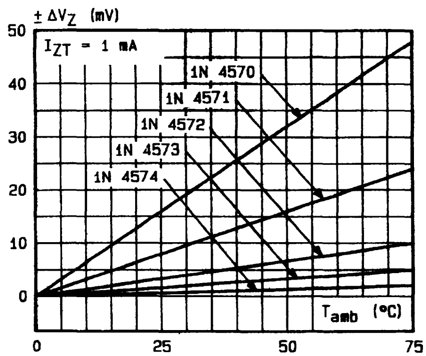


Fig.2c - Regulation voltage variation versus ambient temperature.

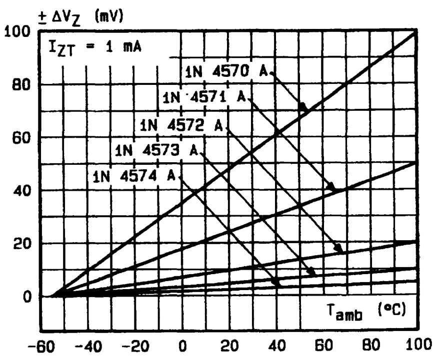


Fig.2d - Regulation voltage variation versus ambient temperature.

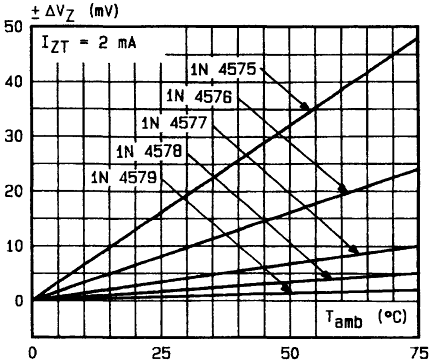


Fig.2e - Regulation voltage variation versus ambient temperature.

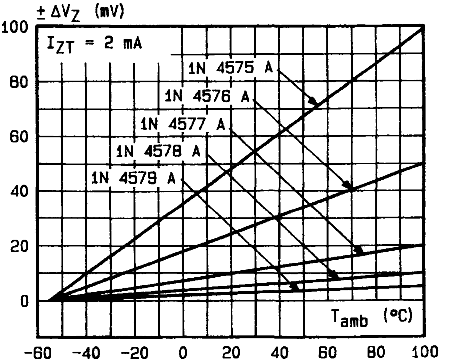


Fig.2f - Regulation voltage variation versus ambient temperature.

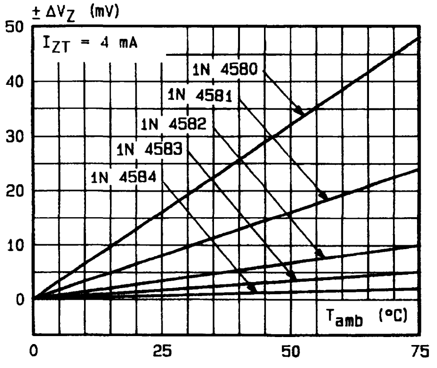


Fig.2g - Regulation voltage variation versus ambient temperature.

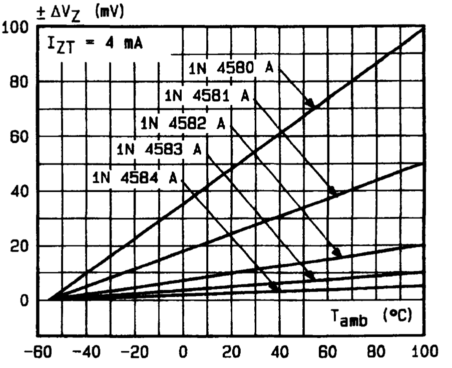
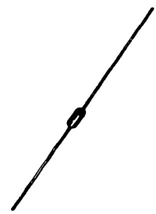


Fig.2h - Regulation voltage variation versus ambient temperature.

1N 4614→1N 4627
1N 4099→1N 4118

ZENER DIODES

- VOLTAGE RANGE : 1.8V TO 27V



DO 35
(Glass)

DESCRIPTION

Designed for 250mW applications requiring low leakage low noise. Zener impedance and Zener voltage specified for low level operation at I_{zt} = 250µA.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{amb} = 25°C	250	mW
I_{ZM}	Continuous Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for soldering during 10s at 4mm from case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	250	°C/W

* On infinite heatsink with 4mm lead length.

July 1989

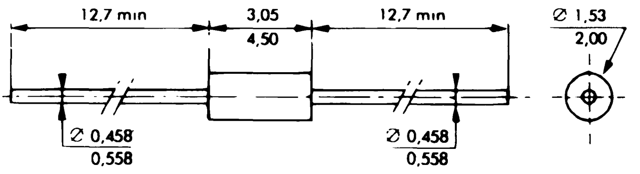
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C)

Type	V_{ZT}/I_{ZT} (1) nom (V)	I_{ZT} (μA)	r_{ZT}/I_{ZT} (2) (Ω)	I_R / (μA)	V_R (V)	Noise Density @ 250μA max (μV/√Hz)	I_{ZM} max (mA)
1N4614	1.8	250	1200	7.5	1.0	1 0	120
1N4615	2.0	250	1250	5.0	1.0	1 0	110
P 1N4616	2.2	250	1300	4.0	1 0	1.0	100
1N4617	2 4	250	1400	2 0	1 0	1 0	95
1N4618	2.7	250	1500	1 0	1.0	1 0	90
1N4619	3 0	250	1600	0 8	1 0	1 0	85
P 1N4620	3.3	250	1650	7.5	1 5	1.0	80
P 1N4621	3 6	250	1700	7 5	2 0	1.0	75
P 1N4622	3.9	250	1650	5.0	2.0	1.0	70
P 1N4623	4.3	250	1600	4 0	2 0	1 0	65
P 1N4624	4.7	250	1550	10	3 0	1.0	60
P 1N4625	5.1	250	1500	10	3 0	2 0	55
1N4626	5 6	250	1400	10	4 0	4 0	50
1N4627	6 2	250	1200	10	5 0	5.0	45
1N4099	6 8	250	200	10	5 2	40	35
1N4100	7 5	250	200	10	5.7	40	31 8
1N4101	8.2	250	200	1 0	6.3	40	29.0
1N4102	8 7	250	200	1 0	6 7	40	27.4
1N4103	9.1	250	200	1 0	7 0	40	26 2
1N4104	10	250	200	1 0	7 6	40	24.8
1N4105	11	250	200	0 05	3 5	40	21 6
1N4106	12	250	200	0 05	9.2	40	20 4
1N4107	13	250	200	0.05	9.9	40	19 0
1N4108	14	250	200	0.05	10.7	40	17.5
1N4109	15	250	100	0 05	11 4	40	16.3
1N4110	16	250	100	0.05	12.2	40	15 4
1N4111	17	250	100	0.05	13 0	40	14 5
1N4112	18	250	100	0 05	13.7	40	13 2
1N4113	19	250	150	0 05	14.5	40	12 5
1N4114	20	250	150	0 01	15.2	40	11 9
1N4115	22	250	150	0.01	16.8	40	10 8
1N4116	24	250	150	0.01	18 3	40	9 9
1N4117	25	250	150	0.01	19.0	40	9 5
1N4118	27	250	150	0.01	20.5	40	8 8

(1) Tolerance on nominal V_{ZT} : ± 5%
(2) Measured @ DC test current with 10% AC superimposed (50Hz).
P . Preferred voltages
Forward voltage drop $V_F \leq 1V$ (T_{amb} = 25°C, I_F = 0.2A)

PACKAGE MECHANICAL DATA

DO 35 Glass



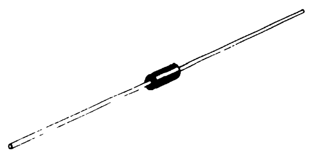
Cooling method : by convection and conduction.
Marking . clear, ring at cathode end
Weight : 0.15g

SGS-THOMSON
MICROELECTRONICS

1N 4728 A→1N 4764 A
1N 4187 B→1N 4193 B

ZENER DIODES

- LARGE VOLTAGE RANGE : 3.3V TO 200V
- DOUBLE SLUG TYPE CONSTRUCTION



DO 41
(Glass)

DESCRIPTION

1W hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	1	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 50°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction–ambient*	150	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT}* max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω)	(mA)	∝ V_Z typ (10^{-4}/°C)	I_R/V_R max (μA)	V_R (V)	I_{ZM} T_{amb} 50°C (mA)	I_{ZSM}** (mA)
P 1N 4728 A	3,3	10	76	400	1	– 6	100	1.0	276	2381
1N 4729 A	3,6	10	69	400	1	– 6	100	1.0	252	2193
P 1N 4730 A	3,9	9	64	400	1	– 5	50	1.0	234	2033
1N 4731 A	4,3	9	58	400	1	– 3	10	1.0	217	1812
P 1N 4732 A	4,7	8	53	500	1	– 1	10	1.0	193	1667
P 1N 4733 A	5,1	7	49	550	1	1	10	1.0	178	1543
P 1N 4734 A	5,6	5	45	600	1	3	10	2.0	162	1389
P 1N 5135 B	6,2	2	41	700	1	4	10	3.0	146	1263
P 1N 4736 A	6,8	3.5	37	700	1	5	10	4.0	133	1157
P 1N 4737 A	7,5	4	34	700	0.5	5	10	5.0	121	1055
P 1N 4738 A	8,2	4.5	31	700	0.5	6	10	6.0	110	958
P 1N 4739 A	9,1	5	28	700	0.5	6	10	7.0	100	868
P 1N 4740 A	10	7	25	700	0.25	7	10	7.6	91	786
1N 4741 A	11	8	23	700	0.25	7	5	8.4	83	718
P 1N 4742 A	12	9	21	700	0.25	7	5	9.1	76	656
1N 4743 A	13	10	19	700	0.25	7	5	9.9	69	591
P 1N 4744 A	15	14	17	700	0.25	8	5	11.4	61	534
P 1N 4745 A	16	16	15.5	700	0.25	8	5	12.2	57	487
P 1N 4746 A	18	20	14	750	0.25	8	5	13.7	50	436
P 1N 4747 A	20	22	12.5	750	0.25	8	5	15.2	45	393
P 1N 4748 A	22	23	11.5	750	0.25	8	5	16.7	41	358
P 1N 4749 A	24	25	10.5	750	0.25	8	5	18.2	38	326
P 1N 4750 A	27	35	9.5	750	0.25	9	5	20.6	34	288
P 1N 4751 A	30	40	8.5	1000	0.25	9	5	22.8	30	260
P 1N 4752 A	33	45	7.5	1000	0.25	9	5	25.1	27	238
P 1N 4753 A	36	50	7.0	1000	0.25	9	5	27.4	25	219
1N 4754 A	39	60	6.5	1000	0.25	9	5	29.7	23	203
1N 4755 A	43	70	6.0	1500	0.25	9	5	32.7	22	181
1N 4756 A	47	80	5.5	1500	0.25	9	5	35.8	19	167
1N 4757 A	51	95	5.0	1500	0.25	9	5	38.8	18	154
1N 4758 A	56	110	4.5	2000	0.25	9	5	42.6	16	139
P 1N 4759 A	62	125	4.0	2000	0.25	9	5	47.1	14	126
1N 4760 A	68	150	3.7	2000	0.25	9	5	51.7	13	116
1N 4761 A	75	175	3.3	2000	0.25	9	5	56	12	104
1N 4762 A	82	200	3.0	3000	0.25	9	5	62.2	11	96
1N 4763 A	91	250	2.8	3000	0.25	9	5	69.2	10	87
1N 4764 A	100	350	2.5	3000	0.25	9	5	76	9	79
1N 4187 B	110	450	2.3	4000	0.25	10	5	83.6	8.6	72
1N 4188 B	120	550	2.0	4500	0.25	10	5	91.2	7.8	66
1N 4189 B	130	700	1.9	5000	0.25	10	5	98.8	7	59
1N 4190 B	150	1000	1.7	6000	0.25	10	5	114	6.4	53
1N 4191 B	160	1100	1.6	6500	0.25	10	5	121.6	5.8	49
1N 4192 B	180	1200	1.4	7000	0.25	10	5	136.8	5.2	44
1N 4193 B	200	1500	1.2	8000	0.25	10	5	152	4.7	39

* Measure under thermal equilibrium and DC current test conditions
* * Rectangular waveform (t_p = 10ms).
Tolerance on nominal V_{ZT} value : ± 5%.
P . Preferred voltages
Tight tolerances on preferred voltages · 1N 47. C ± 2% – 1N 47 D · ± 1%
Forward voltage drop : $V_F \leq 1.2V$ (T_{amb} = 25°C, I_F = 0.2A).

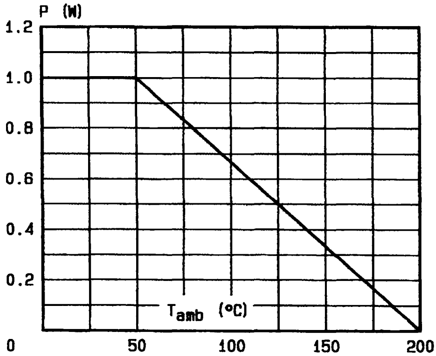


Fig.1 - Power dissipation versus ambient temperature on infinite heatsink.

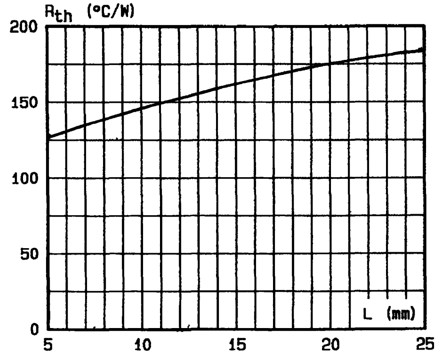


Fig.2 - Thermal resistance versus lead length on infinite heatsink.

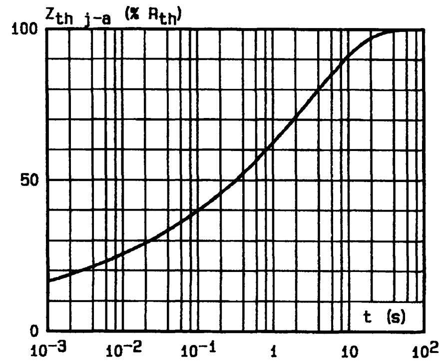
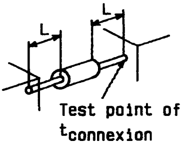


Fig.3 - Transient thermal impedance junction-ambient versus pulse duration.

INFINITE HEATSINK



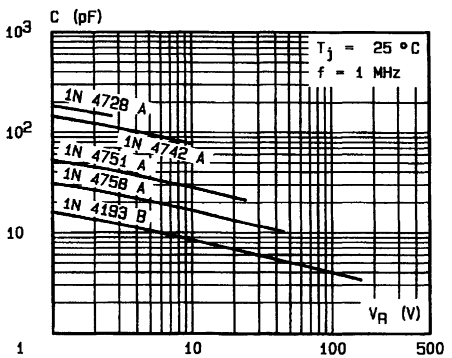


Fig.4 - Capacitance versus reverse applied voltage.

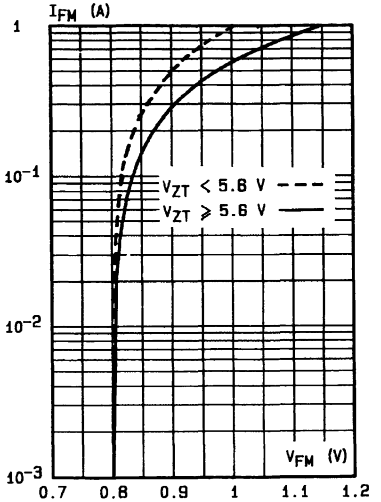


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

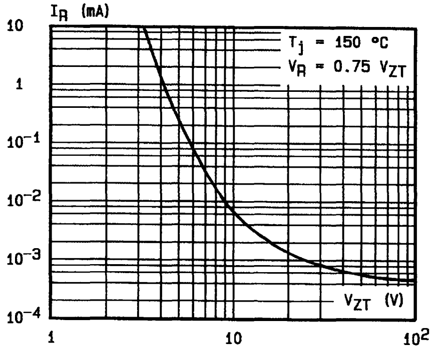


Fig.6 – Reverse current versus regulation voltage (maximum values).

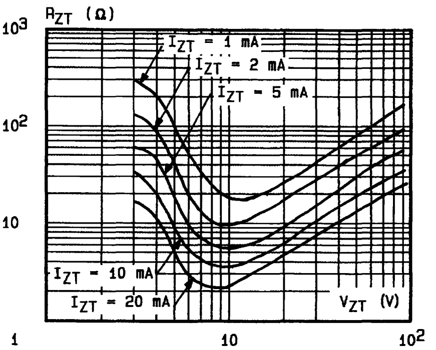


Fig.7 – Differential resistance versus regulation voltage (maximum values).

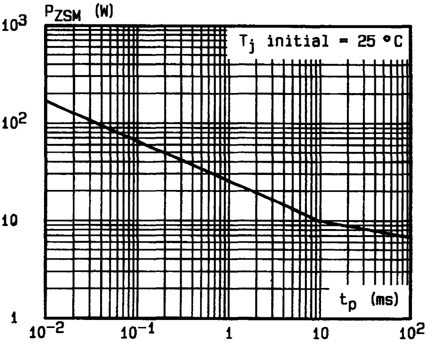
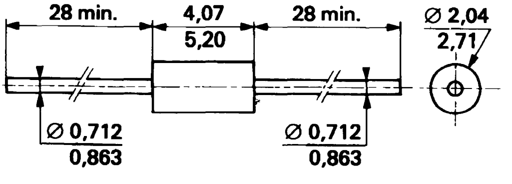


Fig.8 – Peak pulse power versus pulse duration (rectangular wave form).

PACKAGE MECHANICAL DATA

DO 41 Glass



Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight . 0 34g

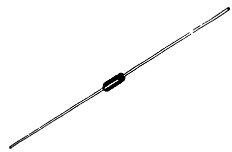
SGS-THOMSON MICROELECTRONICS

1N 4765,A → 1N 4774,A

TEMPERATURE COMPENSATED ZENER DIODES

NEW SERIE

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 65 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 4765	9.1	350	0.5		0	+ 25	+ 75		68	100
1N 4766	9.1	350	0.5		0	+ 25	+ 75		34	50
1N 4767	9.1	350	0.5		0	+ 25	+ 75		14	20
1N 4768	9.1	350	0.5		0	+ 25	+ 75		7	10
1N 4769	9.1	350	0.5		0	+ 25	+ 75		3	5
1N 4765 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	141	100
1N 4766 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	70	50
1N 4767 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	28	20
1N 4768 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	14	10
1N 4769 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	7	5

* On infinite heatsink with d = 4mm

* * The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range Tests are performed at the indicated temperatures and the specified current.

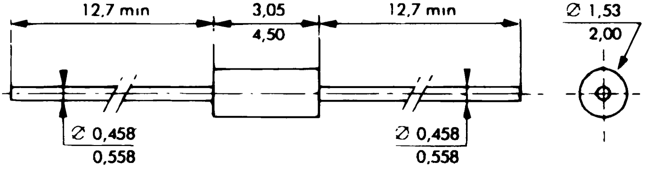
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified) (continued)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z* max. (mV)	αV_Z (10^{-6}/°C)
1N 4770	9.1	350	0.5		0	+ 25	+ 75		68	100
1N 4771	9.1	350	0.5		0	+ 25	+ 75		34	50
1N 4772	9.1	350	0.5		0	+ 25	+ 75		14	20
1N 4773	9.1	350	0.5		0	+ 25	+ 75		7	10
1N 4774	9.1	350	0.5		0	+ 25	+ 75		3	5
1N 4770 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	141	100
1N 4771 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	70	50
1N 4772 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	28	20
1N 4773 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	14	10
1N 4774 A	9.1	350	0.5	– 55	0	+ 25	+ 75	+ 100	7	5

* The voltage reference diodes are characterized by the box method. The maximum allowable voltage change ΔV_Z is guaranteed any two-temperature within the range Tests are performed at the indicated temperatures and the specified current.

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method . by convection and conduction
Marking clear, ring at cathode end.
Weight . 0.15g

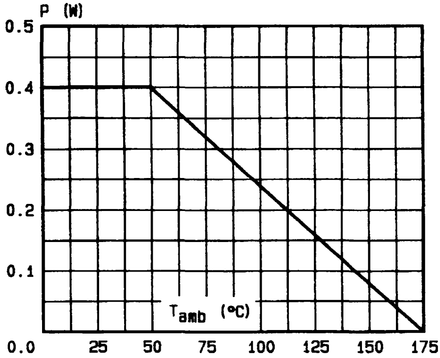


Fig.1 - Power dissipation versus ambient temperature.

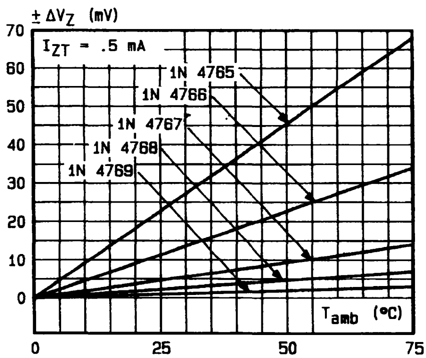


Fig.2a - Regulation voltage variation versus ambient temperature.

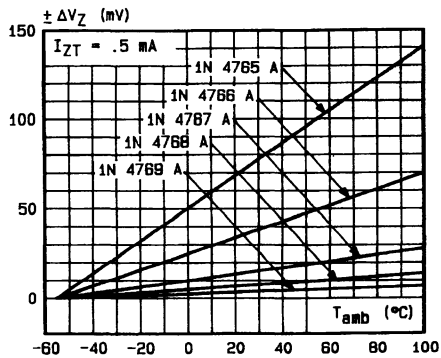


Fig.2b - Regulation voltage variation versus ambient temperature.

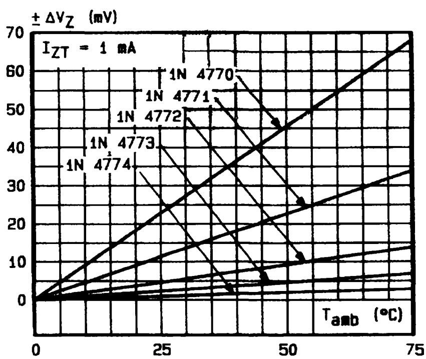


Fig.2c - Regulation voltage variation versus ambient temperature.

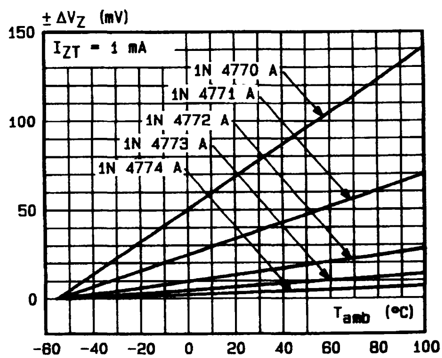
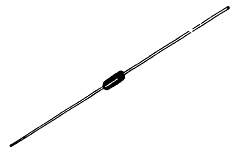


Fig.2d - Regulation voltage variation versus ambient temperature.

TEMPERATURE COMPENSATED ZENER DIODES

NEW SERIE

- SEMICONDUCTOR MATERIAL : SILICON
- TECHNOLOGY : LOCAL EPITAXY + GUARD RING



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 65 to 175	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction to Ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 4775	8.5	200	0.5		0	+ 25	+ 75		64	100
1N 4776	8.5	200	0.5		0	+ 25	+ 75		32	50
1N 4777	8.5	200	0.5		0	+ 25	+ 75		13	20
1N 4778	8.5	200	0.5		0	+ 25	+ 75		6	10
1N 4779	8.5	200	0.5		0	+ 25	+ 75		3	5
1N 4775 A	8.5	200	0.5	– 55	0	+ 25	+ 75	+ 100	132	100
1N 4776 A	8.5	200	0.5	– 55	0	+ 25	+ 75	+ 100	66	50
1N 4777 A	8.5	200	0.5	– 55	0	+ 25	+ 75	+ 100	26	20
1N 4778 A	8.5	200	0.5	– 55	0	+ 25	+ 75	+ 100	13	10
1N 4779 A	8.5	200	0.5	– 55	0	+ 25	+ 75	+ 100	7	5

* On infinite heatsink with d = 4mm

* * The voltage reference diodes are characterized by the box method. The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range. Tests are performed at the indicated temperatures and the specified current

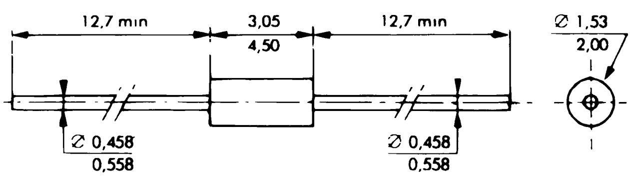
ELECTRICAL CHARACTERISTICS (continued)

Types	V_{ZT} typ. (V)	R_{ZT} @ max. (Ω)	I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
1N 4780	8.5	100	1		0	+ 25	+ 75		64	100
1N 4781	8.5	100	1		0	+ 25	+ 75		32	50
1N 4782	8.5	100	1		0	+ 25	+ 75		13	20
1N 4783	8.5	100	1		0	+ 25	+ 75		6	10
1N 4784	8.5	100	1		0	+ 25	+ 75		3	5
1N 4780 A	8.5	100	1	– 55	0	+ 25	+ 75	+ 100	132	100
1N 4781 A	8.5	100	1	– 55	0	+ 25	+ 75	+ 100	66	50
1N 4782 A	8.5	100	1	– 55	0	+ 25	+ 75	+ 100	26	20
1N 4783 A	8.5	100	1	– 55	0	+ 25	+ 75	+ 100	13	10
1N 4784 A	8.5	100	1	– 55	0	+ 25	+ 75	+ 100	7	5

* The voltage reference diodes are characterized by the box method The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method · by convection and conduction
Marking . clear, ring at cathode end
Weight · 0 15g

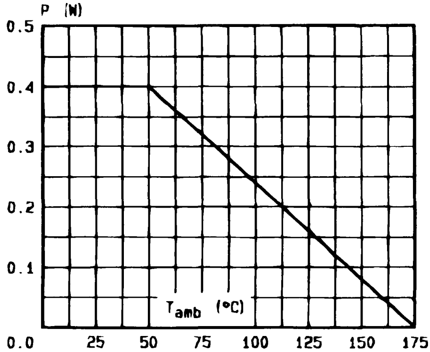


Fig.1 - Power dissipation versus ambient temperature.

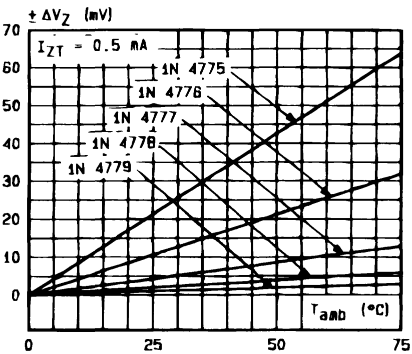


Fig.2a - Regulation voltage variation versus ambient temperature.

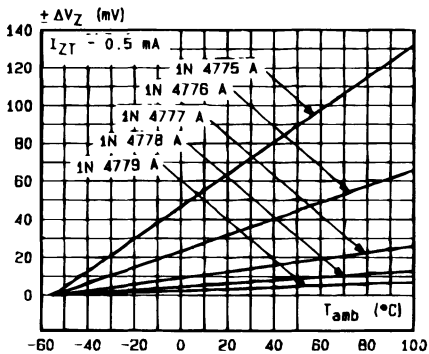


Fig.2b - Regulation voltage variation versus ambient temperature.

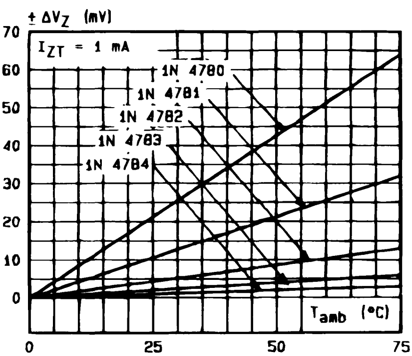


Fig.2c - Regulation voltage variation versus ambient temperature

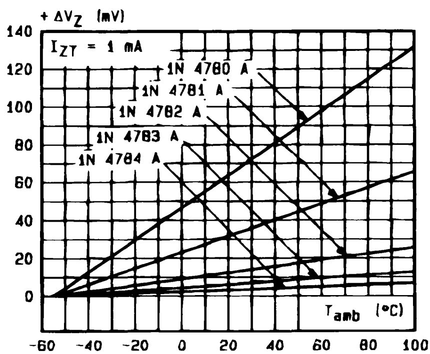


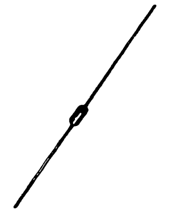
Fig.2d - Regulation voltage variation versus ambient temperature.

SGS-THOMSON MICROELECTRONICS

1N 5221 B → 1N 5281 B

ZENER DIODES

- LARGE VOLTAGE RANGE : 2.4V TO 200V
- DOUBLE SLUG TYPE CONSTRUCTION



DO 35
(Glass)

DESCRIPTION

500mW hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 75°C	0.5	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 75°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction–ambient*	250	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT} max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω) (mA)	∝ V_Z max (10^{-4}/°C)	I_R/V_R max (µA)	V_R (V)	I_{ZM} T_{amb} 75°C (mA)	I_{ZSM}** (mA)
1N 5221 B	2 4	30	20	1200 0 25	− 8 5	100	1 0	191	1984
1N 5222 B	2.5	30	20	1250 0 25	− 8 5	100	1 0	182	1905
1N 5223 B	2.7	30	20	1300 0 25	− 8.0	75	1 0	168	1764
1N 5224 B	2 8	30	20	1400 0 25	− 8 0	75	1.0	162	1701
1N 5225 B	3.0	29	20	1600 0 25	− 7 5	50	1 0	151	1587
1N 5226 B	3.3	28	20	1600 0.25	− 7.0	25	1.0	138	1443
1N 5227 B	3 6	24	20	1700 0 25	− 6 5	15	1.0	126	1323
P 1N 5228 B	3.9	23	20	1900 0.25	− 6 0	10	1.0	115	1221
P 1N 5229 B	4.3	22	20	2000 0 25	± 5 5	5	1 0	106	1107
P 1N 5230 B	4 7	19	20	1900 0.25	± 3 0	5	2 0	97	1013
P 1N 5231 B	5 1	17	20	1600 0 25	± 3 0	5	2 0	89	934
P 1N 5232 B	5.6	11	20	1600 0.25	+ 3.8	5	3 0	81	850
1N 5233 B	6 0	7 0	20	1600 0.25	+ 3.8	5	3 5	76	794
P 1N 5234 B	6 2	7.0	20	1000 0 25	+ 4 5	5	4 0	73	768
P 1N 5235 B	6.8	5.0	20	750 0 25	+ 5.0	3	5 0	67	700
P 1N 5236 B	7.5	6.0	20	500 0 25	+ 5 8	3	6.0	61	635
P 1N 5237 B	8.2	8 0	20	500 0 25	+ 6 2	2	6.5	55	581
1N 5238 B	8.7	8.0	20	600 0 25	+ 6 5	3	6.5	52	547
P 1N 5239 B	9.1	10	20	600 0 25	+ 6.8	3	7.0	50	523
P 1N 5240 B	10	17	20	600 0.25	+ 7 5	3	8.0	45	476
1N 5241 B	11	22	20	600 0 25	+ 7.6	2	8 4	41	433
P 1N 5242 B	12	30	20	600 0 25	+ 7 7	1	9.1	38	397
P 1N 5243 B	13	13	9 5	600 0.25	+ 7 9	0 5	9.9	35	397
P 1N 5244 B	14	15	9 0	600 0 25	+ 8 2	0 1	10	32	340
P 1N 5245 B	15	16	8 5	600 0 25	+ 8 2	0 1	11	30	317
P 1N 5246 B	16	17	7 8	600 0 25	+ 8 3	0 1	12	28	298
1N 5247 B	17	19	7.4	600 0 25	+ 8.4	0 1	13	27	280
P 1N 5248 B	18	21	7.0	600 0 25	+ 8.5	0 1	14	25	265
1N 5249 B	19	23	6.6	600 0.25	+ 8.6	0 1	14	24	251
1N 5250 B	20	25	6.2	600 0 25	+ 8.6	0.1	15	23	238
P 1N 5251 B	22	29	5.6	600 0 25	+ 8 7	0 1	17	21	216
P 1N 5252 B	24	33	5.2	600 0.25	+ 8 8	0 1	18	19 1	198
1N 5253 B	25	35	5 0	600 0 25	+ 8.9	0 1	19	18 2	190
1N 5254 B	27	41	4 6	600 0 25	+ 9 0	0 1	21	16.8	176
1N 5255 B	28	44	4 5	600 0 25	+ 9 1	0 1	21	16.2	170
1N 5256 B	30	49	4 2	600 0 25	+ 9 1	0 1	23	15 1	159
1N 5257 B	33	58	3 8	700 0 25	+ 9 2	0 1	25	13.8	144
1N 5258 B	36	70	3 4	700 0.25	+ 9.3	0 1	27	12 6	132
1N 5259 B	39	80	3 2	800 0 25	+ 9 4	0 1	30	11.5	122
1N 5260 B	43	93	3 0	900 0 25	+ 9.5	0.1	33	10 6	111
1N 5261 B	47	105	2.7	1000 0.25	+ 9.5	0.1	36	9 7	101
1N 5262 B	51	125	2 5	1100 0 25	+ 9.6	0 1	39	8 9	93
1N 5263 B	56	150	2.2	1300 0 25	+ 9.6	0 1	43	8 1	85
1N 5264 B	60	170	2 1	1400 0 25	+ 9 7	0 1	46	7 6	79
1N 5265 B	62	185	2 0	1400 0 25	+ 9.7	0 1	47	7 3	77
1N 5266 B	68	230	1 8	1600 0 25	+ 9 7	0.1	52	6.7	70
1N 5267 B	75	270	1 7	1700 0 25	+ 9 8	0 1	56	6 1	63
1N 5268 B	82	330	1 5	2000 0 25	+ 9 8	0 1	62	5 5	58
1N 5269 B	87	370	1 4	2200 0 25	+ 9.9	0 1	68	5 2	55
1N 5270 B	91	400	1 4	2300 0.25	+ 9.9	0.1	69	5 0	52
1N 5271 B	100	500	1 3	2600 0.25	+ 11 0	0.1	76	4.5	48
1N 5272 B	110	750	1 1	3000 0 25	+ 11 0	0.1	84	4 1	43
1N 5273 B	120	900	1 0	4000 0 25	+ 11 0	0 1	91	3 8	40

* Measure under thermal equilibrium and DC current test conditions
** Rectangular waveform (tp = 10ms)
Tolerance on nominal V_{ZT} value ± 5%
P Preferred voltages
Tight tolerances on preferred voltages 1N52 C ± 2% − 1N52 D ± 1%
Forward voltage drop $V_F \leq$ 1 1V (T_{amb} = 25°C, I_F = 200mA)

ELECTRICAL CHARACTERISTICS (continued)

Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT} max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω) (mA)	∝ V_Z max (10^{-4}/°C)	I_R/V_R max (µA)	V_R (V)	I_{ZM} T_{amb} 75°C (mA)	I_{ZSM}** (mA)
1N 5274 B	130	1100	0.95	4500 0.25	+ 11 0	0 1	99	3.5	37
1N 5275 B	140	1300	0 90	4500 0.25	+ 11.0	0.1	106	3.2	34
1N 5276 B	150	1500	0.85	5000 0 25	+ 11 0	0 1	114	3.0	32
1N 5277 B	160	1700	0.80	5500 0.25	+ 11.0	0 1	122	2.8	30
1N 5278 B	170	1900	0.74	5500 0.25	+ 11 0	0 1	129	2.7	28
1N 5279 B	180	2200	0 68	6000 0.25	+ 11 0	0 1	137	2 5	26
1N 5280 B	190	2400	0 66	6500 0.25	+ 11 0	0 1	144	2 4	25
1N 5281 B	200	2500	0.65	7000 0 25	+ 11 0	0 1	152	2 3	24

* Measure under thermal equilibrium and DC current test conditions.
** Rectangular waveform (tp = 10ms).
Tolerance on nominal V_{ZT} value ± 5%
P · Preferred voltages.
Tight tolerances on preferred voltages · 1N52. .C. ± 2% – 1N52 . D : ± 1%.
Forward voltage drop . $V_F \leq 1.1V$ (T_{amb} = 25°C, I_F = 200mA)

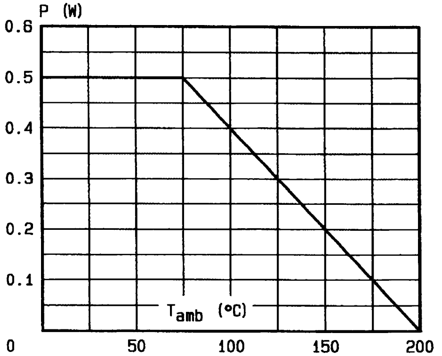


Fig.1 - Power dissipation versus ambient temperature on infinite heatsink.

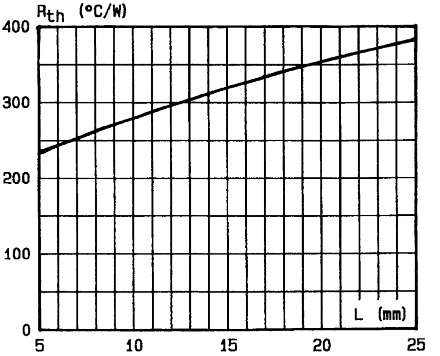


Fig.2 - Thermal resistance versus lead length on infinite heatsink.

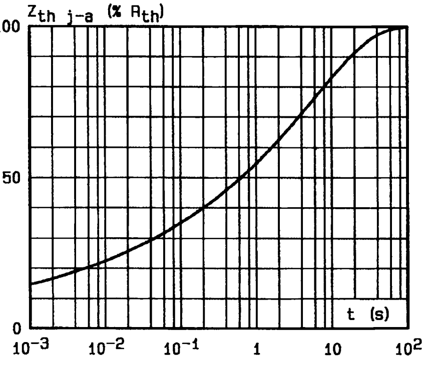
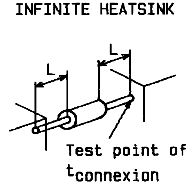


Fig.3 - Transient thermal impedance junction-ambient versus pulse duration.



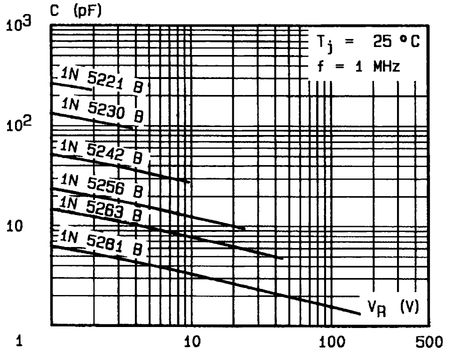


Fig.4 - Capacitance versus reverse applied voltage.

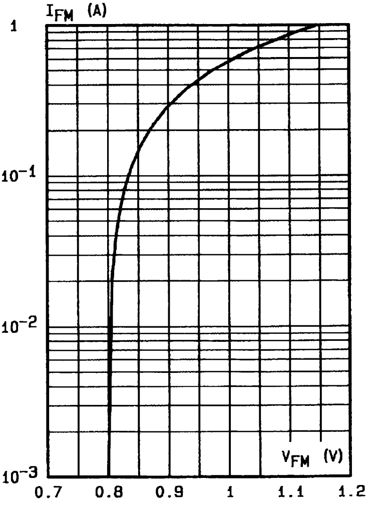


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

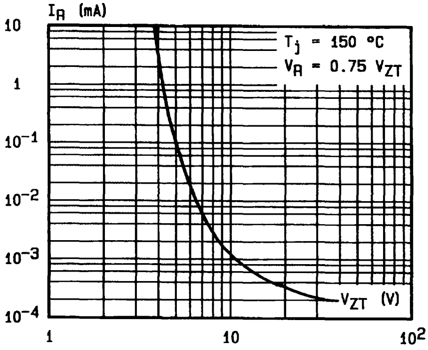


Fig.6 - Reverse current versus regulation voltage (Typical values).

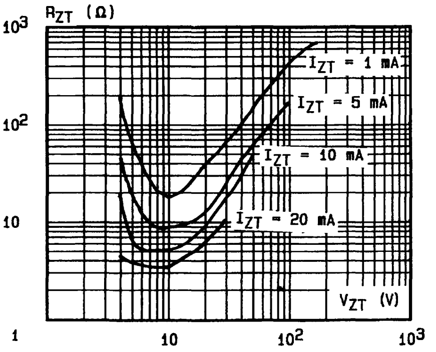


Fig.7 - Differential resistance versus regulation voltage (Typical values).

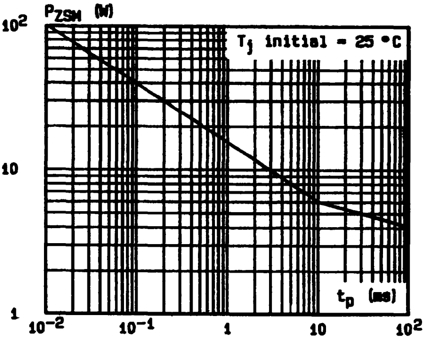
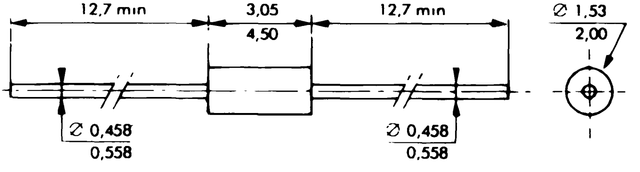


Fig.8 - Peak pulse power versus pulse duration (rectangular waveform) (maximum values).

PACKAGE MECHANICAL DATA

DO 35 Glass

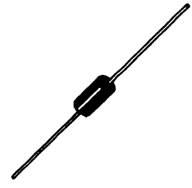


Cooling method . by convection and conduction
Marking . clear, ring at cathode end
Weight 0 15g

1N 5333 B → 1N 5388 B

ZENER DIODES

- VOLTAGE RANGE : 3.3V TO 200V
- HERMETICALLY SEALED PLASTIC CASE
- HIGH SURGE CAPABILITY (up to 180W @ 8.3ms)



CB 417
(Plastic)

DESCRIPTION

5W silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 75°C	5	W
I_{ZM}	Continuous Reverse Current*	T_{amb} = 75°C	See page 2	A
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 65 to 200	°C
T_L	Maximum Temperature for Soldering during 10s at 4mm from case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	25	°C/W

* On infinite heatsink with 10mm lead length.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* nom. (V) (1)	I_{ZT}* (mA) (1)	r_{ZT}/I_{ZT}* max. (Ω) (1)	r_{ZK}/I_{ZK} max. 1.0mA (Ω)	I_R / V_R max. (µA)	(V)	∝VZ typ. (10^{-4}/°C)	I_{ZM} max. T_{amb}=75°C (mA) (2)	ΔV_Z max. (V) (3)	I_{ZSM} max. (A) (4)
1N 5333 B	3,3	380	3.0	400	300	1.0	− 6	1440	0.85	22.2
1N 5334 B	3,6	350	2.5	500	150	1.0	− 5.5	1320	0.80	20.4
1N 5335 B	3,9	320	2.0	500	50	1.0	− 5	1220	0.54	18.8
1N 5336 B	4,3	290	2.0	500	10	1.0	− 4	1100	0.49	17.0
1N 5337 B	4,7	260	2.0	450	5.0	1.0	− 2	1010	0.44	15.6
P 1N 5338 B	5,1	240	1.5	400	1.0	1.0	1	930	0.39	14.4
P 1N 5339 B	5,6	220	1.0	400	1.0	2.0	2.5	865	0.25	13.1
1N 5340 B	6,0	200	1.0	300	1.0	3.0	2.8	790	0.19	12.2
P 1N 5341 B	6,2	200	1.0	200	1.0	3.0	3.2	765	0.10	11.8
P 1N 5342 B	6,8	175	1.0	200	10	5.2	4	700	0.15	10.8
1N 5343 B	7,5	175	1.5	200	10	5.7	4.5	630	0.15	9.8
1N 5344 B	8,2	150	1.5	200	10	6.2	4.8	580	0.20	8.9
1N 5345 B	8,7	150	2.0	200	10	6.6	4.9	545	0.20	8.4
1N 5346 B	9,1	150	2.0	150	7.5	6.9	5.1	520	0.22	8.1
1N 5347 B	10	125	2.0	125	5.0	7.6	5.5	475	0.22	7.3
1N 5348 B	11	125	2.5	125	5.0	8.4	6	430	0.25	11.0
P 1N 5349 B	12	100	2.5	125	2.0	9.1	6.5	395	0.25	10.1
1N 5350 B	13	100	2.5	100	1.0	9.9	6.5	365	0.25	9.3
1N 5351 B	14	100	2.5	75	1.0	10.6	7	340	0.25	8.6
P 1N 5352 B	15	75	2.5	75	1.0	11.5	7	315	0.25	8.1
P 1N 5353 B	16	75	2.5	75	1.0	12.2	7	295	0.30	7.6
1N 5354 B	17	70	2.5	75	0.5	12.9	7	280	0.35	7.1
P 1N 5355 B	18	65	2.5	75	0.5	13.7	7.5	264	0.40	6.7
1N 5356 B	19	65	3.0	75	0.5	14.4	7.5	250	0.40	6.4
1N 5357 B	20	65	3.0	75	0.5	15.2	7.5	237	0.40	6.0
P 1N 5358 B	22	50	3.5	75	0.5	16.7	8	216	0.45	5.5
P 1N 5359 B	24	50	3.5	100	0.5	18.2	8	198	0.55	5.0
1N 5360 B	25	50	4.0	110	0.5	19.0	8	190	0.55	4.8
P 1N 5361 B	27	50	5.0	120	0.5	20.6	8.5	176	0.60	4.5
1N 5362 B	28	50	6.0	130	0.5	21.2	8.5	170	0.60	4.3
P 1N 5363 B	30	40	8.0	140	0.5	22.8	8.5	158	0.60	4.0
1N 5364 B	33	40	10	150	0.5	25.1	8.5	144	0.60	3.7
P 1N 5365 B	36	30	11	160	0.5	27.4	9	132	0.65	3.4
1N 5366 B	39	30	14	170	0.5	29.7	9	122	0.65	3.1
1N 5367 B	43	30	20	190	0.5	32.7	9	110	0.70	2.8
1N 5368 B	47	25	25	210	0.5	35.8	9	100	0.80	2.6
1N 5369 B	51	25	27	230	0.5	38.8	9	93	0.90	2.4
1N 5370 B	56	20	35	280	0.5	42.6	9	86	1.00	2.2
1N 5371 B	60	20	40	350	0.5	45.5	9	79	1.20	2.0
P 1N 5372 B	62	20	42	400	0.5	47.1	9	76	1.35	1.9
1N 5373 B	68	20	44	500	0.5	51.7	9	70	1.50	1.8
1N 5374 B	75	20	45	620	0.5	56.0	9	63	1.60	1.6
1N 5375 B	82	15	65	720	0.5	62.2	9	58	1.80	1.5
1N 5376 B	87	15	75	760	0.5	66.0	9	54.5	2.00	1.4
1N 5377 B	91	15	75	760	0.5	69.2	9	52.5	2.20	1.3
P 1N 5378 B	100	12	90	800	0.5	76.0	9.5	47.5	2.50	1.2
1N 5379 B	110	12	125	1000	0.5	83.6	9.5	43	2.50	1.1
1N 5380 B	120	10	170	1150	0.5	91.2	9.5	39.5	2.50	1.0
1N 5381 B	130	10	190	1250	0.5	98.8	9.5	36.5	2.50	0.93
1N 5382 B	140	8.0	230	1500	0.5	106	9.5	34	2.50	0.86

(1) Pulse test $t_p \leq 50ms$ $\delta < 2\%$
(2) On infinite heatsink . d = 10mm
(3) Measured between 10% and 50% of I_{ZM}.
(4) Rectangular waveform (t_p = 10ms)

Tolerance on nominal V_{ZT} ± 5%.
P Preferred voltages.
Forward voltage drop . $V_F \leq 1.2V$ (T_{amb} = 25°C, I_F = 1A)

ELECTRICAL CHARACTERISTICS (continued)

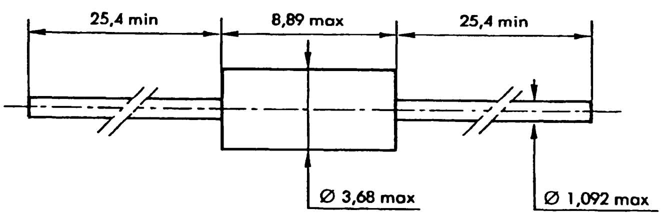
Types	V_{ZT}/I_{ZT}* nom. (V) (1)	I_{ZT}* (mA) (1)	r_{ZT}/I_{ZT}* max. (Ω) (1)	r_{ZK}/I_{ZK} max. 1.0mA (Ω)	I_R / V_R max. (µA)	(V)	∝VZ typ. (10^{-4}/°C)	I_{ZM} max. T_{amb}=75°C (mA) (2)	ΔV_Z max. (V) (3)	I_{ZSM} max. (A) (4)
P 1N 5383 B	150	8 0	330	1500	0 5	114	9.5	31 6	3.00	0.81
1N 5384 B	160	8 0	350	1650	0.5	122	9.5	29.4	3 00	0.76
1N 5385 B	170	8 0	380	1750	0.5	129	9.5	28	3.00	0.71
P 1N 5386 B	180	5.0	430	1750	0.5	137	9 5	26.4	4.00	0.67
1N 5387 B	190	5.0	450	1850	0.5	144	9.5	25	5 00	0.64
P 1N 5388 B	200	5 0	480	1850	0 5	152	10	23 6	5 00	0.60

(1) Pulse test : $t_p \leq$ 50ms $\delta < 2\%$
(2) On infinite heatsink · d = 10mm
(3) Measured between 10% and 50% of I_{ZM}
(4) Rectangular waveform (t_p = 10ms)

Tolerance on nominal V_{ZT} : ± 5%
P . Preferred voltages.
Forward voltage drop $V_F \leq$ 1.2V (T_{amb} = 25°C, I_F = 1A)

PACKAGE MECHANICAL DATA

CB-417 Plastic



Cooling method by convection (method A)
Marking · clear, ring at cathode end
Weight : 0 6g

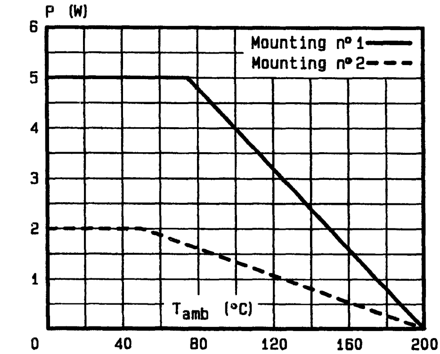


Fig.1 - Power dissipation versus ambient temperature.

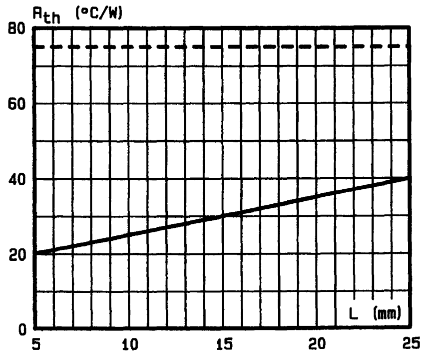


Fig.2 - Thermal resistance versus lead length.

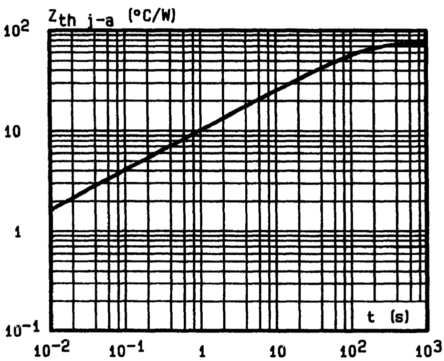
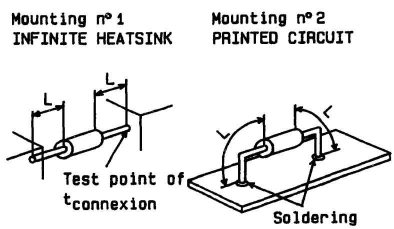


Fig.3 - Transient thermal impedance junction-ambient for mounting nº 2 versus pulse duration (L = 10 mm).



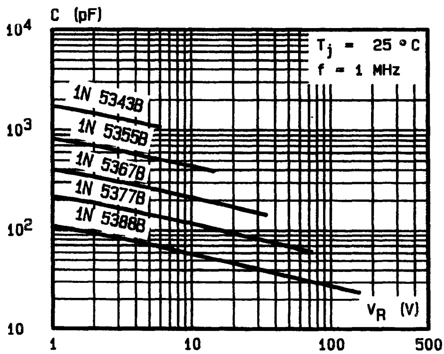


Fig.4 - Capacitance versus reverse applied voltage.

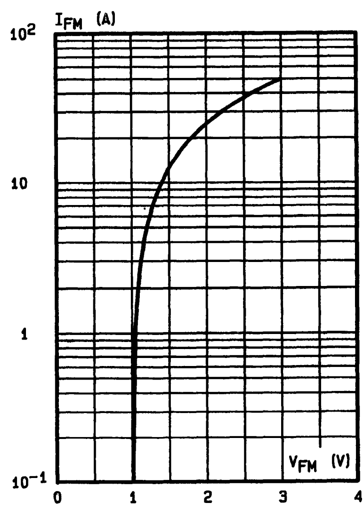


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

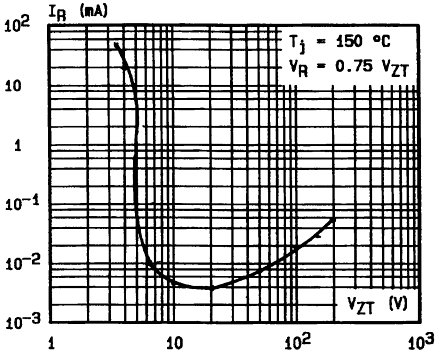


Fig.6 - Reverse current versus regulation voltage (typical values).

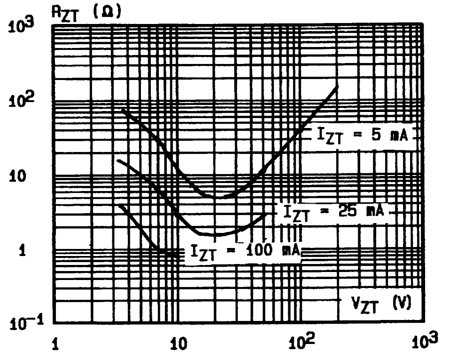


Fig.7 - Differential resistance versus regulation voltage (typical values).

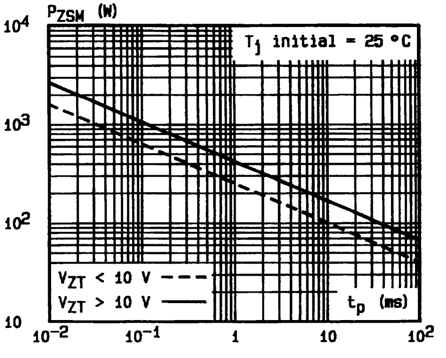


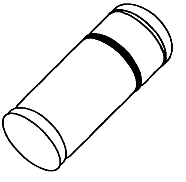
Fig.8 - Peak pulse power versus pulse duration (rectangular wave form) (maximum values).

SGS-THOMSON MICROELECTRONICS

BZM 85 C 2V7→100

ZENER DIODES

- VOLTAGE RANGE : 2.7V TO 100V



MELF
(Glass)

DESCRIPTION

1.3W hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{lead} = 25°C	1.3	W
I_{ZM}	Continuous Reverse Current	T_{lead} = 25°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 175	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction–leads	110	°C/W

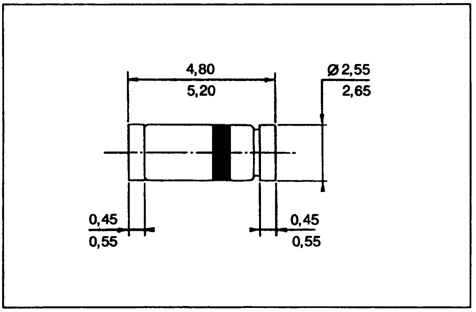
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

	Types	V_{ZT}/I_{ZT}*		r_{ZT}/I_{ZT}	I_{ZT}	r_{ZK}/I_{ZK}		∝ V_Z		I_R/V_R T_{amb}		V_R	I_{ZM}	I_{ZSM}**
		min	max	max		max		min	max	25°C max	150°C max			max
		(V)		(Ω)	(mA)	(Ω)	(mA)	(10^{-4}/°C)		(µA)		(V)	(mA)	(mA)
	BZM85 C 2V7	2.5	2.9	20	80	400	1	− 8	− 5	150	300	1	370	2874
	BZM85 C 3V0	2 8	3 2	20	80	400	1	− 8	− 5	100	300	1	340	2604
P	BZM85 C 3V3	3.1	3.5	20	80	400	1	− 8	− 5	40	300	1	320	2381
P	BZM85 C 3V6	3 4	3.8	20	60	500	1	− 8	− 5	20	50	1	290	2193
P	BZM85 C 3V9	3 7	4 1	15	60	500	1	− 7	− 2	10	20	1	280	2033
P	BZM85 C 4V3	4.0	4.6	13	50	500	1	− 5	1	3	10	1	250	1812
P	BZM85 C 4V7	4 4	5.0	13	45	500	1	− 3	4	3	10	1	215	1667
P	BZM85 C 5V1	4 8	5.4	10	45	500	1	− 1	4	1	10	1.5	200	1543
P	BZM85 C 5V6	5.2	6.0	7	45	400	1	0	4.5	1	10	2	190	1389
P	BZM85 C 6V2	5.8	6.6	4	35	300	1	1	5.5	1	10	3	170	1263
P	BZM85 C 6V8	6.4	7 2	3 5	35	300	1	1.5	6	1	10	4	155	1157
P	BZM85 C 7V5	7 0	7.9	3	35	200	0 5	2	6 5	1	10	4 5	140	1055
P	BZM85 C 8V2	7 7	8 7	5	25	200	0.5	3	7	1	10	6 2	130	958
P	BZM85 C 9V1	8.5	9 6	5	25	200	0 5	3.5	7.5	1	10	6.8	120	868
P	BZM85 C 10	9 4	10 6	7	25	200	0.5	4	8	0 5	10	7 5	105	786
	BZM85 C 11	10 4	11.6	8	20	300	0 5	4 5	8	0 5	10	8 2	97	718
P	BZM85 C 12	11 4	12.7	9	20	350	0.5	4.5	8 5	0 5	10	9.1	88	656
	BZM85 C 13	12.4	14.1	10	20	400	0 5	5	8.5	0.5	10	10	79	591
P	BZM85 C 15	13.8	15.6	15	15	500	0 5	5 5	9	0.5	10	11	71	534
	BZM85 C 16	15 3	17.1	15	15	500	0.5	5.5	9	0.5	10	12	66	487
	BZM85 C 18	16 8	19.1	20	15	500	0 5	6	9	0 5	10	13	62	436
	BZM85 C 20	18 8	21 2	24	10	600	0 5	6	9	0 5	10	15	56	393
	BZM85 C 22	20 8	23.3	25	10	600	0.5	6	9 5	0 5	10	16	52	358
	BZM85 C 24	22.8	25 6	25	10	600	0 5	6	9.5	0 5	10	18	47	326
	BZM85 C 27	25.1	28 9	30	8	750	0 25	6	9 5	0.5	10	20	41	288
	BZM85 C 30	28	32	30	8	1000	0.25	6	9.5	0 5	10	22	36	260
	BZM85 C 33	31	35	35	8	1000	0.25	6	9.5	0 5	10	24	33	238
	BZM85 C 36	34	38	40	8	1000	0.25	6	9.5	0.5	10	27	30	219
	BZM85 C 39	37	41	50	6	1000	0 25	6	9.5	0.5	10	30	28	203
	BZM85 C 43	40	46	50	6	1000	0.25	6	9.5	0 5	10	33	26	181
	BZM85 C 47	44	50	90	4	1500	0 25	6	9.5	0 5	10	36	23	167
	BZM85 C 51	48	54	115	4	1500	0.25	6	9.5	0.5	10	39	21	154
	BZM85 C 56	52	60	120	4	2000	0 25	6	9 5	0.5	10	43	19	139
	BZM85 C 62	58	66	125	4	2000	0.25	6	9.5	0.5	10	47	16	126
	BZM85 C 68	64	72	130	4	2000	0.25	6	9.5	0.5	10	51	15	116
	BZM85 C 75	70	80	135	4	2000	0.25	6	9 5	0.5	10	56	14	104
	BZM85 C 82	77	87	200	2.7	3000	0.25	7	12	0.5	10	62	12	96
	BZM85 C 91	85	96	250	2.7	3000	0.25	7	12	0.5	10	68	10	87
	BZM85 C 100	94	106	350	2.7	3000	0.25	7	12	0 5	10	75	9.4	79

* Pulse test · 20m ≤ t_p ≤ 50ms δ < 2%.
* * Rectangular wave form (t_p = 10ms).
The regulation voltage are defined according to the E24 series.
Voltages > 100V on request
P : Preferred voltages
Tight tolerances on preferred voltage : BZM85E. ± 3% – BZM85B ± 2%
Forward voltage drop : V_F ≤ 1V (T_{amb} = 25°C, I_F = 200mA).

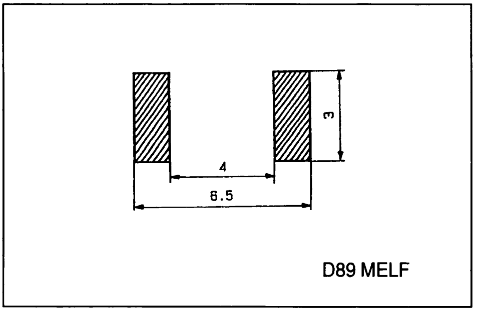
PACKAGE MECHANICAL DATA

MELF Glass



Marking . ring at cathode end
Weight . 0 15g

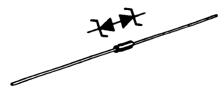
FOOT PRINT DIMENSIONS (millimeters)



SGS-THOMSON MICROELECTRONICS

BZV 37

SYMMETRICAL ZENER DIODE (PROTECTION)



DO 35
(Glass)

DESCRIPTION

BZV 37 is a dual diode, specially designed for ESD protection.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation**	T_{amb} = 50°C	0.5	W
P_P	Non Repetitive Surge Peak Power	T_p = 100µs Rectangular Waveform	40	W
I_{PP}	Peak Pulse Current*	8–20µs expo 10–1000µs expo	7 2	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

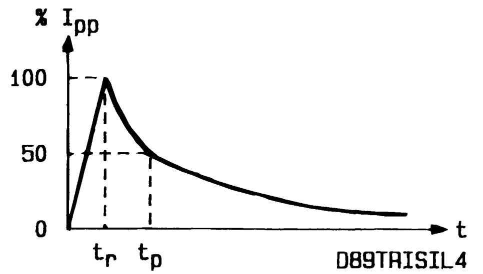
Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction–ambient**	300	°C/W

* Exponential pulse (see figure 1).
** On infinite heatsink with 4mm lead length.

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
V_{ZT}	T_{amb} = 25°C	I_{ZT} = 5mA	6.2		6.8	V
V_{CL}	T_{amb} = 25°C	I_{PP} = 7A (pulse 8 – 20µs expo) See Fig.1			25	V
	T_{amb} = 25°C	I_{PP} = 2A (pulse 10–1000µs expo) See Fig.1			15	
I_R	T_{amb} = 25°C	V_R = 2V			1	µA
	T_{amb} = 25°C	V_R = 4V			10	
	T_{amb} = 150°C	V_R = 4V			20	
r_{ZT}	T_j = 25°C	I_{ZT} = 5mA			20	Ω
C	T_j = 25°C	V_R = 0V f = 1MHz		90		pF

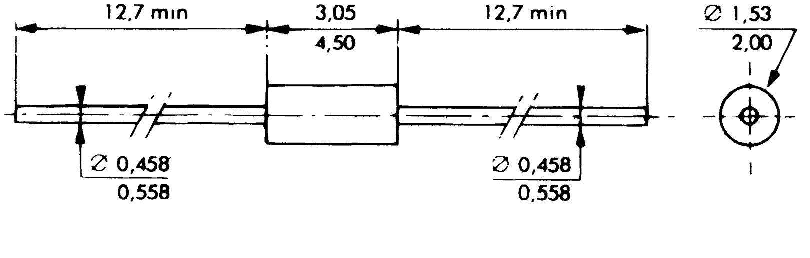
Figure 1 : Pulse Waveform.



The clamping voltage V_{CL} specified in the data-sheet is the maximum value for the "standard" pulse with a peak of I_{PP} specified.
Minimum duration between two surges : 30s

PACKAGE MECHANICAL DATA

DO 35 (Glass)



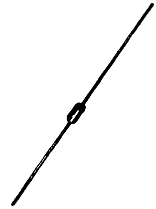
Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight · 0 15g

SGS-THOMSON MICROELECTRONICS

BZV 47 C 3V3 → 200

ZENER DIODES

- VOLTAGE RANGE : 3.3V TO 200V
- HERMETICALLY SEALED PLASTIC CASE
- PACKAGE ACCORDING TO NORMALIZATION CCTU : F 126
- PRO ELECTRON REGISTRATION
- HIGH SURGE CAPABILITY (55W @ 10ms)



F 126
(Plastic)

DESCRIPTION

2W silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 55°C	2	W
I_{ZM}	Continuous Reverse Current*	T_{amb} = 55°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 3s at 5mm from case		300	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	60	°C/W

* On infinite heatsink with 10mm lead length.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT} min (V) (1)	V_{ZT}/I_{ZT} max (V) (1)	r_{ZT}/I_{ZT} max (Ω) (1)	I_{ZT} (mA) (1)	$\propto V_Z$ typ (10^{-4}/°C)	I_R/V_R max (μA)	V_R (V)	I_{ZM} T_{amb} = 55°C (mA) (2)	I_{ZSM} (A) (3)
BZV 47 C 3V3	3 1	3 5	10	100	− 6 0			570	12.1
BZV 47 C 3V6	3 4	3 8	10	100	− 5 5			525	11 1
BZV 47 C 3V9	3.7	4.1	7	100	− 5 0			485	10.3
BZV 47 C 4V3	4 0	4.6	7	100	− 4 0			435	9 2
BZV 47 C 4V7	4 4	5 0	7	100	− 2 0			400	8 5
P BZV 47 C 5V1	4 8	5 4	5	100	1 0			370	7 8
P BZV 47 C 5V6	5 2	6 0	2	100	2 5	5	1	330	7 1
P BZV 47 C 6V2	5 8	6 6	2	100	3 2	5	1	300	6 4
P BZV 47 C 6V8	6 4	7 2	2	100	4 0	5	1	275	5 9
BZV 47 C 7V5	7 0	7 9	2	100	4 5	5	2	250	5 4
BZV 47 C 8V2	7 7	8 7	2	100	4 8	5	3 5	230	4 9
BZV 47 C 9V1	8 5	9 6	4	50	5.1	5	3 5	205	4 4
BZV 47 C 10	9 4	10 6	4	50	5 5	5	7 6	185	4 0
BZV 47 C 11	10 4	11 6	7	50	6 0	1	8 3	170	3 6
P BZV 47 C 12	11 4	12.7	7	50	6 5	1	9 1	155	3 3
BZV 47 C 13	12 4	14 1	10	50	6 5	1	9 9	140	3 0
P BZV 47 C 15	13 8	15 6	10	50	7 0	1	11 4	130	2 7
BZV 47 C 16	15.3	17 1	15	25	7 0	0 5	12 2	115	2 5
P BZV 47 C 18	16 8	19 1	15	25	7 5	0 5	13 7	105	2 2
P BZV 47 C 20	18 8	21 2	15	25	7 5	0 5	15 2	94	2 0
P BZV 47 C 22	20 8	23 3	15	25	8 0	0 5	16 7	86	1 8
P BZV 47 C 24	22 8	25 6	15	25	8 0	0 5	18 2	78	1 7
P BZV 47 C 27	25 1	28 9	15	25	8 5	0 5	20 5	69	1 5
P BZV 47 C 30	28	32	15	25	8 5	0 5	22 8	62	1 3
BZV 47 C 33	31	35	15	25	8 5	0 5	25	57	1 2
P BZV 47 C 36	34	38	40	10	8 5	0 5	27 4	52	1 1
BZV 47 C 39	37	41	40	10	9 0	0 5	29 6	48	1 0
BZV 47 C 43	40	46	45	10	9 0	0 5	32 7	43	0 92
P BZV 47 C 47	44	50	45	10	9 0	0 5	35 7	40	0 85
BZV 47 C 51	48	54	60	10	9 0	0 5	38 8	37	0.78
BZC 47 C 56	52	60	60	10	9 0	0 5	42 5	33	0 71
P BZV 47 C 62	58	66	80	10	9 0	0 5	47 1	30	0 64
P BZV 47 C 68	64	72	80	10	9 0	0 5	51 7	27	0 59
BZV 47 C 75	70	79	100	10	9 0	0 5	57	25	0 53
BZV 47 C 82	77	87	100	10	9 0	0 5	62 4	23	0 49
BZV 47 C 91	85	96	200	5	9 0	0 5	69 2	20	0 44
P BZV 47 C 100	94	106	200	5	9.0	0 5	76	18	0 40
BZV 47 C 110	104	116	250	5	9 5	0 5	83 5	17	0 36
BZV 47 C 120	114	127	250	5	9 5	0 5	91 2	15	0.33
P BZV 47 C 130	124	141	300	5	9 5	0 5	98.2	14	0 30
P BZV 47 C 150	138	156	300	5	9.5	0 5	114	12 8	0 27
BZV 47 C 160	153	171	350	5	9 5	0.5	122	11.7	0.25
BZV 47 C 180	168	191	350	5	9 5	0.5	137	10.5	0 22
P BZV 47 C 200	188	212	350	5	9.5	0 5	152	9 4	0 20

(1) Pulse test $t_p \leq$ 50ms δ<2%
(2) On infinite heatsink · d = 10mm
(3) Rectangular waveform (t_p = 10ms)
The regulation voltages are defined according to the E24 series
P · Preferred voltages
Forward voltage drop $V_F \leq$ 1 2V (T_{amb} = 25°C, I_F = 500mA)

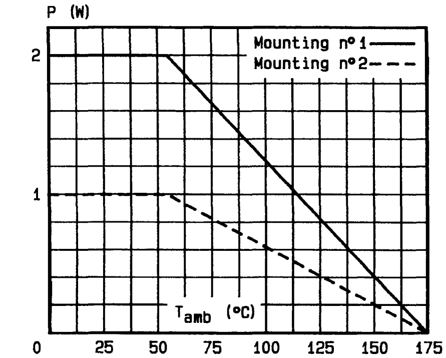


Fig.1 - Power dissipation versus ambient temperature.

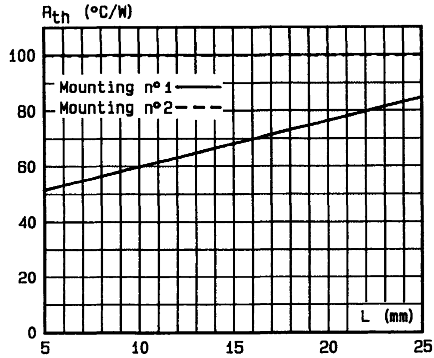


Fig.2 - Thermal resistance versus lead length.

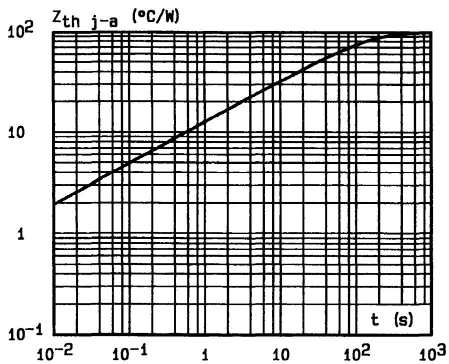
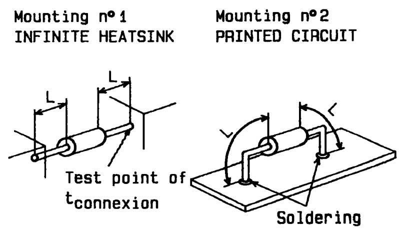


Fig.3 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).



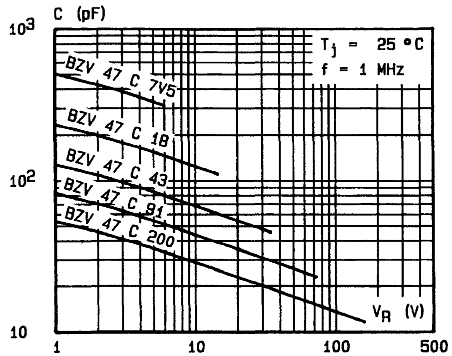


Fig.4 - Capacitance versus reverse applied voltage.

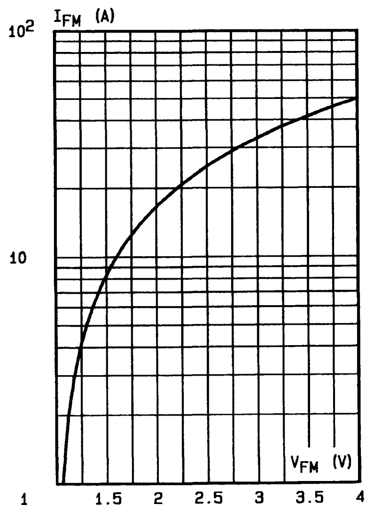


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

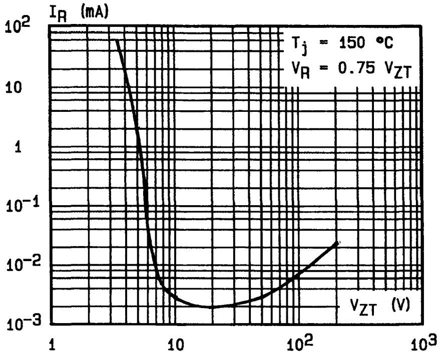


Fig.6 - Reverse current versus regulation voltage (typical values).

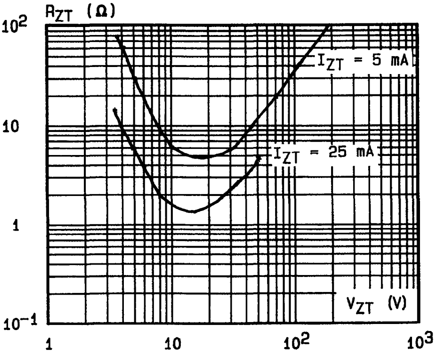


Fig.7 - Differential resistance versus regulation voltage (typical values).

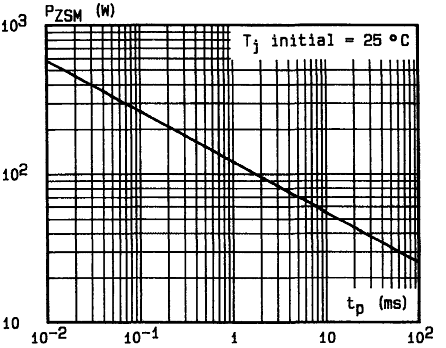
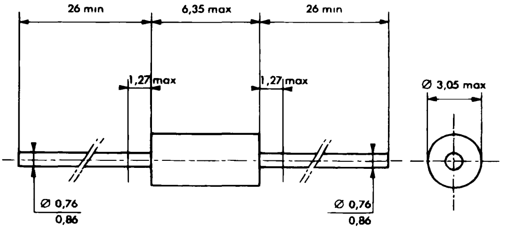


Fig.8 - Peak pulse power versus pulse duration (rectangular wave form) (maximum values).

PACKAGE MECHANICAL DATA

F 126 (Plastic)

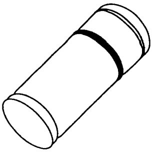


Cooling method by convection (method A)
Marking . clear, ring at cathode end.
Weight 0 4g

BZV 55C 2V4 → 100

ZENER DIODES

- VOLTAGE RANGE : 2.4V TO 100V



MINIMELF
(Glass)

DESCRIPTION

500mW hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{lead} = 25°C	0.5	W
I_{ZM}	Continuous Reverse Current	T_{lead} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 55 to 175	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction–leads	300	°C/W

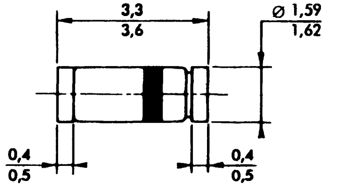
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

	Types	V_{ZT}/I_{ZT}* min (V)	V_{ZT}/I_{ZT}* max (V)	r_{ZT}/I_{ZT}* max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω)	r_{ZK}/I_{ZK} (mA)	∝ V_Z min (10^{-4}/°C)	∝ V_Z max (10^{-4}/°C)	I_R/V_R T_{amb} 25°C max (µA)	I_R/V_R T_{amb} 150°C max (µA)	V_R (V)	I_{ZM} (mA)
	BZV 55 C 2V4	2 28	2 56	85	5	600	1	– 8	– 6	50	100	1	155
	BZV 55 C 2V7	2 5	2 9	85	5	600	1	– 8	– 6	10	50	1	135
	BZV 55 C 3V0	2 8	3 2	85	5	600	1	– 8	– 6	4	40	1	125
P	BZV 55 C 3V3	3 1	3 5	85	5	600	1	– 8	– 5	2	40	1	115
P	BZV 55 C 3V6	3 4	3 8	85	5	600	1	– 8	– 4	2	40	1	105
P	BZV 55 C 3V9	3 7	4 1	85	5	600	1	– 7	– 3	2	40	1	95
P	BZV 55 C 4V3	4 0	4.6	75	5	600	1	– 4	– 1	1	20	1	90
P	BZV 55 C 4V7	4.4	5 0	60	5	600	1	– 3	1	0.5	10	1	85
P	BZV 55 C 5V1	4 8	5.4	35	5	550	1	– 2	5	0 1	2	1	80
P	BZV 55 C 5V6	5 2	6 0	25	5	450	1	– 1	6	0 1	2	1	70
P	BZV 55 C 6V2	5 8	6 6	10	5	200	1	0	7	0 1	2	2	64
P	BZV 55 C 6V8	6 4	7 2	8	5	150	1	1	8	0 1	2	3	58
P	BZV 55 C 7V5	7 0	7 9	7	5	50	1	1	9	0 1	2	5	53
P	BZV 55 C 8V2	7 7	8 7	7	5	50	1	1	9	0 1	2	6 2	47
P	BZV 55 C 9V1	8 5	9 6	10	5	50	1	2	10	0 1	2	6 8	43
P	BZV 55 C 10	9 4	10.6	15	5	70	1	3	11	0 1	2	7 5	40
	BZV 55 C 11	10 4	11.6	20	5	70	1	3	11	0 1	2	8.2	36
P	BZV 55 C 12	11.4	12 7	20	5	90	1	3	11	0 1	2	9 1	32
	BZV 55 C 13	12.4	14.1	26	5	110	1	3	11	0.1	2	10	29
P	BZV 55 C 15	13 8	15.6	30	5	110	1	3	11	0 1	2	11	27
	BZV 55 C 16	15 3	17 1	40	5	170	1	3	11	0 1	2	12	24
	BZV 55 C 18	16 8	19 1	50	5	170	1	3	11	0.1	2	13	21
	BZV 55 C 20	18 8	21 2	55	5	220	1	3	11	0 1	2	15	20
	BZV 55 C 22	20 8	23 3	55	5	220	1	3	11	0 1	2	16	18
	BZV 55 C 24	22 8	25 6	80	5	220	1	4	12	0 1	2	18	16
	BZV 55 C 27	25 1	28.9	80	5	220	1	4	12	0 1	2	20	14
	BZV 55 C 30	28	32	80	5	220	1	4	12	0 1	2	22	13
	BZV 55 C 33	31	35	80	5	220	1	4	12	0 1	2	24	12
	BZV 55 C 36	34	38	80	5	220	1	4	12	0 1	2	27	11
	BZV 55 C 39	37	41	90	2 5	500	0 5	4	12	0.1	5	30	10
	BZV 55 C 43	40	46	90	2 5	600	0 5	4	12	0 1	5	33	9.2
	BZV 55 C 47	44	50	110	2 5	700	0 5	4	12	0 1	5	36	8 5
	BZV 55 C 51	48	54	125	2 5	700	0 5	4	12	0 1	10	39	7 8
	BZV 55 C 56	52	60	135	2 5	1000	0 5	4	12	0 1	10	43	7 0
	BZV 55 C 62	58	66	150	2 5	1000	0 5	4	12	0 1	10	47	6 4
	BZV 55 C 68	64	72	200	2 5	1000	0 5	4	12	0 1	10	51	5 9
	BZV 55 C 75	70	80	250	2 5	1500	0 5	4	12	0 1	10	56	5 3
	BZV 55 C 82	77	87	300	2 5	2000	0 5	4	12	0 1	10	62	4 8
	BZV 55 C 91	85	96	450	1	5000	0 1	4	12	0 1	10	68	4.4
	BZV 55 C 100	94	106	450	1	5000	0.1	4	12	0.1	10	75	4.0

* Pulse test 20ms ≤ tp ≤ 50ms δ < 2%
The regulation voltages are defined according to the E24 series
Voltage > 100V on request
P Preferred voltages
Tight tolerances available on preferred voltages BZV 55 E · ± 3% – BZV 55 B · ± 2%
Forward voltage drop V_F ≤ 1 5V (T_{amb} = 25°C, I_F = 200mA)

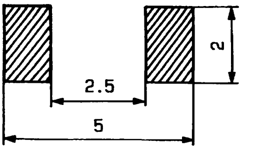
PACKAGE MECHANICAL DATA

MINIMELF (Glass)



Marking ring at cathode end
Weight 0 05g

FOOT PRINTER DIMENSIONS (millimeters)



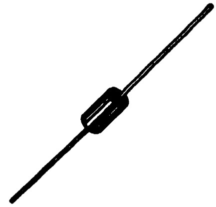
D89 MINIMELF

SGS-THOMSON
MICROELECTRONICS

BZV 58 C 3V3 → 200

ZENER DIODES

- VOLTAGE RANGE : 3.3V TO 200V
- HERMETICALLY SEALED PLASTIC CASE
- PRO ELECTRON REGISTRATION
- HIGH SURGE CAPABILITY (up to 110W @ 10ms)



CB-417
(Plastic)

DESCRIPTION

5W silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	5	W
I_{ZM}	Continuous Reverse Current*	T_{amb} = 50°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175	°C
T_L	Maximum Temperature for Soldering during 3s at 5mm from Case		300	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	25	°C/W

* On infinite heatsink with 10mm lead length.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

	Types	V_{ZT}/I_{ZT}* min (V) (1)	V_{ZT}/I_{ZT}* max (V) (1)	r_{ZT}/I_{ZT} max (Ω) (1)	I_{ZT} (mA) (1)	$\propto V_Z$ typ (10^{-4}/°C)	I_R/V_R max (μA)	V_R (V)	I_{ZM} T_{amb} = 50°C (mA) (2)	I_{ZSM} max (A) (3)
	BZV 58 C 3V3	3.1	3.5	3	380	− 6.0			1430	15.4
	BZV 58 C 3V6	3.4	3.8	2.5	350	− 5.5			1310	14.2
	BZV 58 C 3V9	3.7	4.1	2	320	− 5.0			1220	13.1
	BZV 58 C 4V3	4.0	4.6	2	290	− 4.0			1090	11.7
	BZV 58 C 4V7	4.4	5.0	2	260	− 2.0			1000	10.8
P	BZV 58 C 5V1	4.8	5.4	1.5	240	1.0			925	10.0
P	BZV 58 C 5V6	5.2	6.0	1	220	2.5	20	1	830	9.0
P	BZV 58 C 6V2	5.8	6.6	1	200	3.2	10	1	750	8.2
P	BZV 58 C 6V8	6.4	7.2	1	175	4.0	10	2	690	7.5
	BZV 58 C 7V5	7.0	7.9	1.5	175	4.5	10	2	630	6.8
	BZV 58 C 8V2	7.7	8.7	1.5	150	4.8	10	3	570	6.2
	BZV 58 C 9V1	8.5	9.6	2	150	5.1	10	6.6	520	5.6
	BZV 58 C 10	9.4	10.6	2	125	5.5	10	7.6	470	5.1
	BZV 58 C 11	10.4	11.6	2.5	125	6.0	5	8.3	430	8.0
P	BZV 58 C 12	11.4	12.7	2.5	100	6.5	2	9.1	390	7.3
	BZV 58 C 13	12.4	14.1	2.5	100	6.5	1	9.9	350	6.5
P	BZV 58 C 15	13.8	15.6	2.5	75	7.0	1	11.4	320	5.9
P	BZV 58 C 16	15.3	17.1	2.5	75	7.0	0.5	12.2	290	5.4
P	BZV 58 C 18	16.8	19.1	2.5	65	7.5	0.5	13.7	260	4.8
	BZV 58 C 20	18.8	21.2	3	65	7.5	0.5	15.2	235	4.4
P	BZV 58 C 22	20.8	23.3	3.5	50	8.0	0.5	16.7	215	4.0
P	BZV 58 C 24	22.8	25.6	3.5	50	8.0	0.5	18.2	195	3.6
P	BZV 58 C 27	25.1	28.9	5	50	8.5	0.5	20.5	170	3.2
P	BZV 58 C 30	28	32	8	40	8.5	0.5	22.8	155	2.9
	BZV 58 C 33	31	35	10	40	8.5	0.5	25	140	2.6
P	BZV 58 C 36	34	38	11	30	8.5	0.5	27.4	130	2.4
	BZV 58 C 39	37	41	14	30	9.0	0.5	29.6	120	2.3
	BZV 58 C 43	40	46	20	30	9.0	0.5	32.7	110	2.0
	BZV 58 C 47	44	50	25	25	9.0	0.5	35.7	100	1.8
	BZV 58 C 51	48	54	27	25	9.0	0.5	38.8	92	1.7
	BZV 58 C 56	52	60	35	20	9.0	0.5	42.5	83	1.5
P	BZV 58 C 62	58	66	42	20	9.0	0.5	47.1	75	1.4
	BZV 58 C 68	64	72	44	20	9.0	0.5	51.7	69	1.3
	BZV 58 C 75	70	79	45	20	9.0	0.5	57	63	1.2
	BZV 58 C 82	77	87	65	15	9.0	0.5	62.4	57	1.1
	BZV 58 C 91	85	96	75	15	9.0	0.5	69.2	52	1.0
P	BZV 58 C 100	94	106	90	12	9.0	0.5	76	47	0.87
	BZV 58 C 110	104	116	125	12	9.5	0.5	83.5	43	0.80
	BZV 58 C 120	114	127	170	10	9.5	0.5	91.2	39	0.73
	BZV 58 C 130	124	141	190	10	9.5	0.5	98.8	35	0.65
P	BZV 58 C 150	138	156	330	8	9.5	0.5	114	32	0.59
	BZV 58 C 160	153	171	350	8	9.5	0.5	122	29	0.54
P	BZV 58 C 180	168	191	430	5	9.5	0.5	137	26	0.48
P	BZV 58 C 200	188	212	480	5	10	0.5	152	23	0.44

(1) Pulse test $t_p \le 50ms$ $\delta < 2\%$
(2) On infinite heatsink : d = 10mm
(3) Rectangular waveform (t_p = 10ms)
The regulation voltages are defined according to the E24 series
P Preferred voltages
Forward voltage drop : $V_F \le 1.2V$ (T_{amb} = 25°C, I_F = 1A)

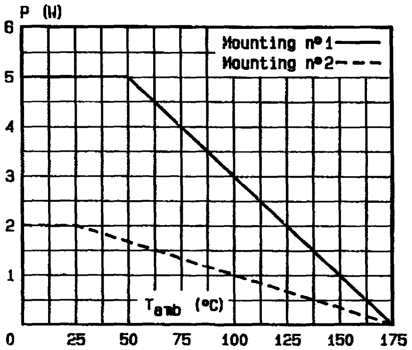


Fig.1 - Power dissipation versus ambient temperature.

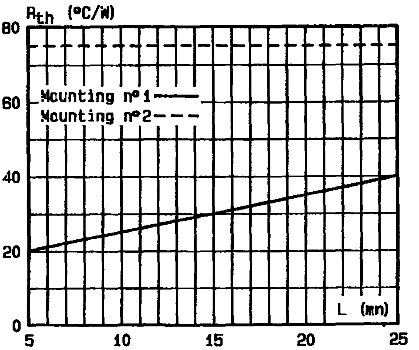


Fig.2 - Thermal resistance versus lead length.

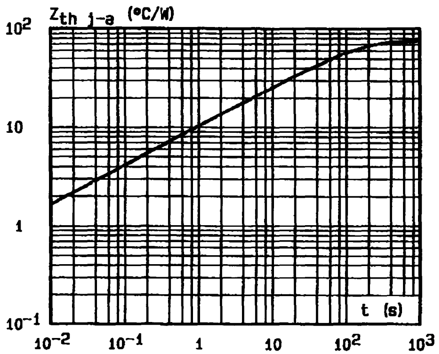
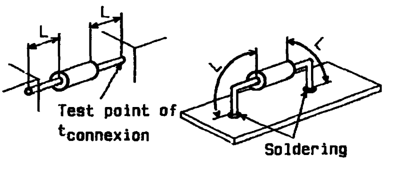


Fig.3 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

Mounting n°1
INFINITE HEATSINK

Mounting n°2
PRINTED CIRCUIT



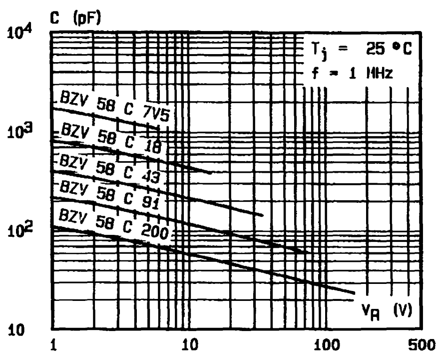


Fig.4 - Capacitance versus reverse applied voltage.

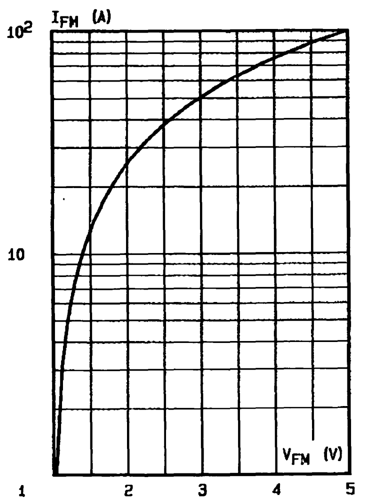


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

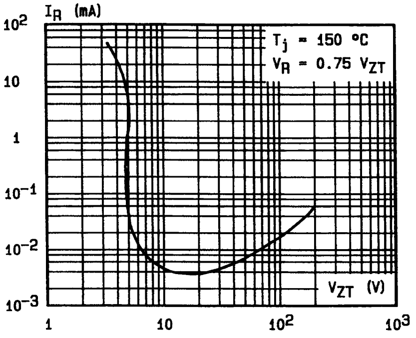


Fig.6 - Reverse current versus regulation voltage (typical values).

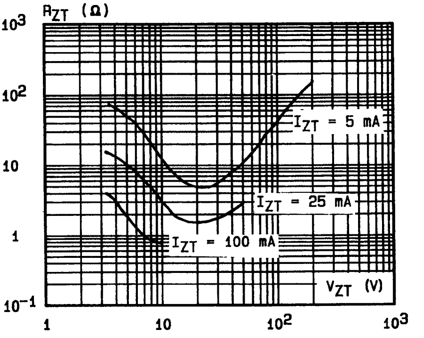


Fig.7 - Differential resistance versus regulation voltage (typical values).

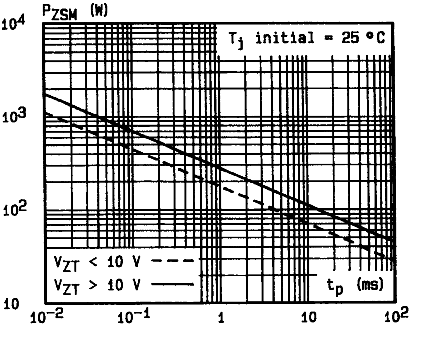
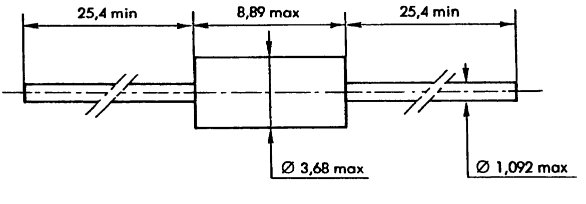


Fig.8 - Peak pulse power versus pulse duration (rectangular wave form) (maximum values).

PACKAGE MECHANICAL DATA

CB-417 Plastic

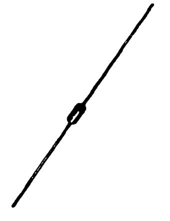


Cooling method · by convection (method A)
Marking · clear, ring at cathode end
Weight 0 6g

BZX 55 C 0V8 → 200

ZENER DIODES

- LARGE VOLTAGE RANGE : 0.8V TO 200V
- DOUBLE SLUG TYPE CONSTRUCTION
- PRO ELECTRON REGISTRATION
- CECC FOR TYPES : 2.7V TO 62V (level quality assessment : L)



DO 35
(Glass)

DESCRIPTION

500mW hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.5	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 50°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 55 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	250	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT} (1)		r_{ZT}/I_{ZT} (1)	I_{ZT} (1)	r_{ZK}/I_{ZK}		∝ V_Z		I_R/V_R T_{amb}		V_R	I_{ZM} T_{amb} 50°C
	min	max	max		max		min	max	25°C max	150°C max		
	(V)		(Ω)	(mA)	(Ω)	(mA)	(10^{-4}/°C)		(μA)		(V)	(mA)
BZX 55 C 0V8 (2)	0 73	0 83	8	5	600	1						
BZX 55 C 2V4	2 28	2 56	85	5	600	1	− 8	− 6	50	100	1	155
• Δ BZX 55 C 2V7	2 5	2 9	85	5	600	1	− 8	− 6	10	50	1	135
• Δ BZX 55 C 3V0	2 8	3 2	85	5	600	1	− 8	− 6	4	40	1	125
P • Δ BZX 55 V 3V3	3 1	3 5	85	5	600	1	− 8	− 5	2	40	1	115
P • Δ BZX 55 C 3V6	3.4	3 8	85	5	600	1	− 8	− 4	2	40	1	105
P • Δ BZX 55 C 3V9	3 7	4 1	85	5	600	1	− 7	− 3	2	40	1	95
P • Δ BZX 55 C 4V3	4.0	4 6	75	5	600	1	− 4	− 1	1	20	1	90
P • Δ BZX 55 C 4V7	4.4	5 0	60	5	600	1	− 3	1	0 5	10	1	85
P • Δ BZX 55 C 5V1	4 8	5 4	35	5	550	1	− 2	5	0 1	2	1	80
P • Δ BZX 55 C 5V6	5 2	6 0	25	5	450	1	− 1	6	0 1	2	1	70
P • Δ BZX 55 C 6V2	5 8	6 6	10	5	200	1	0	7	0 1	2	2	64
P • Δ BZX 55 C 6V8	6 4	7 2	8	5	150	1	1	8	0 1	2	3	58
P • Δ BZX 55 C 7V5	7 0	7 9	7	5	50	1	1	9	0 1	2	5	53
P • Δ BZX 55 C 8V2	7 7	8 7	7	5	50	1	1	9	0 1	2	6.2	47
P • Δ BZX 55 C 9V1	8 5	9 6	10	5	50	1	2	10	0 1	2	6 8	43
P • Δ BZX 55 C 10	9 4	10 6	15	5	70	1	3	11	0 1	2	7 5	40
• Δ BZX 55 C 11	10 4	11 6	20	5	70	1	3	11	0 1	2	8 2	36
P • Δ BZX 55 C 12	11.4	12 7	20	5	90	1	3	11	0 1	2	9 1	32
• Δ BZX 55 C 13	12 4	14 1	26	5	110	1	3	11	0 1	2	10	29
P • Δ BZX 55 C 15	13 8	15 6	30	5	110	1	3	11	0 1	2	11	27
• Δ BZX 55 C 16	15 3	17 1	40	5	170	1	3	11	0 1	2	12	24
P • Δ BZX 55 C 18	16 8	19 1	50	5	170	1	3	11	0 1	2	13	21
P • Δ BZX 55 C 20	18 8	21 2	55	5	220	1	3	11	0 1	2	15	20
P • Δ BZX 55 C 22	20 8	23 3	55	5	220	1	3	11	0 1	2	16	18
P • Δ BZX 55 C 24	22 8	25 6	80	5	220	1	4	12	0 1	2	18	16
P • Δ BZX 55 C 27	25 1	28.9	80	5	220	1	4	12	0 1	2	20	14
• Δ BZX 55 C 30	28	32	80	5	220	1	4	12	0 1	2	22	13
P • Δ BZX 55 C 33	31	35	80	5	220	1	4	12	0 1	2	24	12
• Δ BZX 55 C 36	34	38	80	5	220	1	4	12	0 1	2	27	11
• Δ BZX 55 C 39	37	41	90	2 5	500	0 5	4	12	0 1	5	30	10
• Δ BZX 55 C 43	40	46	90	2 5	600	0 5	4	12	0 1	5	33	9 2
• Δ BZX 55 C 47	44	50	110	2 5	700	0 5	4	12	0 1	5	36	8 5
• Δ BZX 55 C 51	48	54	125	2 5	700	0 5	4	12	0 1	10	39	7 8
• Δ BZX 55 C 56	52	60	135	2 5	1000	0 5	4	12	0 1	10	43	7 0
• Δ BZX 55 C 62	58	66	150	2 5	1000	0 5	4	12	0 1	10	47	6 4
• BZX 55 C 68	64	72	200	2 5	1000	0 5	4	12	0 1	10	51	5 9
• BZX 55 C 75	70	80	250	2 5	1500	0 5	4	12	0 1	10	56	5 3
• BZX 55 C 82	77	87	300	2 5	2000	0 5	4	12	0 1	10	62	4 8
• BZX 55 C 91	85	96	450	1	5000	0 1	4	12	0 1	10	68	4 4
BZX 55 C 100	94	106	450	1	5000	0 1	4	12	0 1	10	75	4 0
BZX 55 C 110	104	116	600	1	5000	0 1	4	12	0 1	10	82	3 6
BZX 55 C 120	114	127	800	1	5000	0 1	4	12	0 1	10	91	3 3
BZX 55 C 130	124	141	1000	1	5000	0 1	4	12	0 1	10	100	3 0
BZX 55 C 150	138	156	1200	1	5000	0 1	4	12	0 1	10	110	2 6
BZX 55 C 160	153	171	1500	1	5000	0 1	4	12	0 1	10	120	2 5
BZX 55 C 180	168	191	1800	1	5000	0 1	4	12	0 1	10	130	2 2
BZX 55 C 200	188	212	2000	1	5000	0 1	4	12	0 1	10	150	2 0

(1) Pulse test 20ms ≤ tp ≤ 50ms δ < 2%
(2) The BZX 55 C 0V8 is a diode used with a positive bias The lead which is marked by a ring should be connected to the negative terminal of the current source
Δ Devices under CCQ/CECC
• Esa qualified product
P Preferred voltages.
The regulation voltages are defined according to the E24 series
Tight tolerances on preferred voltages only BZX 55 B ± 2% – BZX 55 A ± 1%
Forward voltage drop V_F ≤ 1.5V (T_{amb} = 5°C, I_F = 200mA)

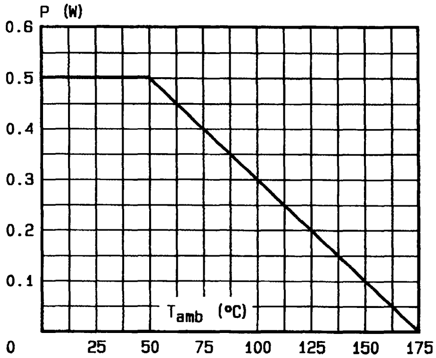


Fig.1 - Power dissipation versus ambient temperature on infinite heatsink.

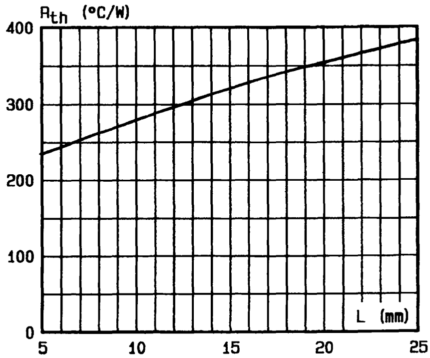


Fig.2 - Thermal resistance versus lead length on infinite heatsink.

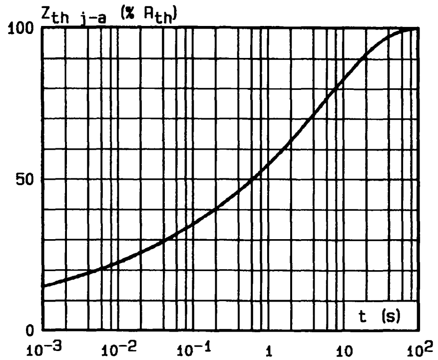
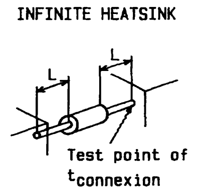


Fig.3 - Transient thermal impedance junction-ambient versus pulse duration.



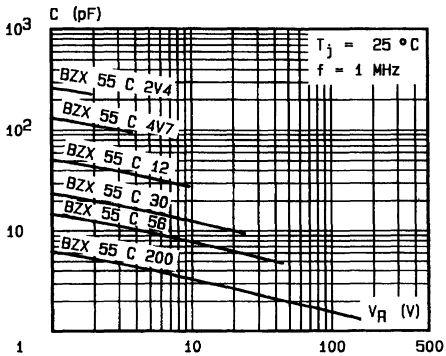


Fig.4 - Capacitance versus reverse applied voltage.

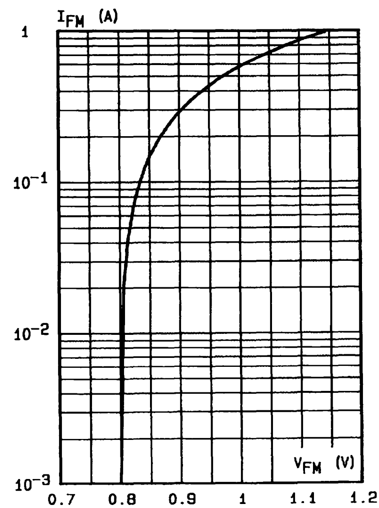


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

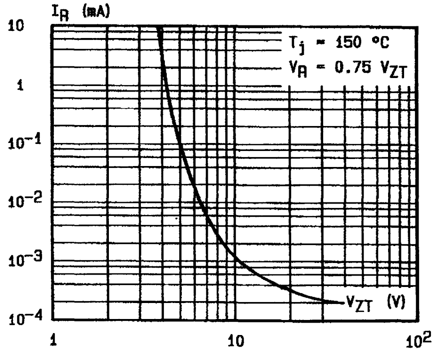


Fig.6 - Reverse current versus regulation voltage (maximum values).

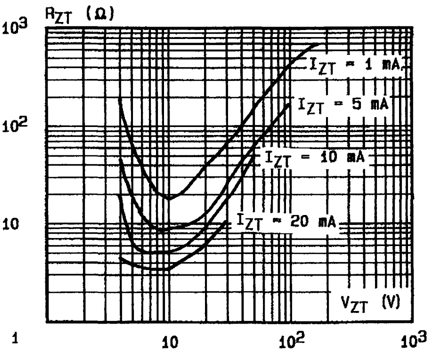
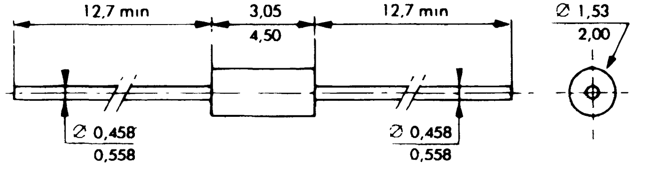


Fig.7 - Differential resistance versus regulation voltage (maximum values).

PACKAGE MECHANICAL DATA

DO 35 Glass



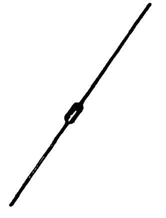
Cooling method : by convection and conduction
Marking clear, ring at cathode end
Weight · 0 15g

SGS-THOMSON
MICROELECTRONICS

BZX 79 C 2V4→100

ZENER DIODES

- VOLTAGE RANGE : 2.4V TO 100V
- DOUBLE SLUG TYPE CONSTRUCTION
- PRO ELECTRON REGISTRATION 2.4V TO 100V
- CECC FOR TYPES : 2.7V TO 62V (LEVEL QUALITY ASSESSMENT : L)



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 50°C	0.5	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 50°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	300	°C/W

* On infinite heatsink with 4mm lead length.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}*		r_{ZT}/I_{ZT}	I_{ZT}	r_{ZK}/I_{ZK}		∝ V_Z		I_R/V_R T_{amb}		V_R	I_{ZM}
									25°C	150°C		
	min	max	max		max		min	max	max	max		
	(V)		(Ω)	(mA)	(Ω)	(mA)	(mV/°C)		(µA)		(V)	(mA)
BZX 79 C 2V4	2.2	2.6	100	5	600	1	– 3 5	0	50	100	1	155
Δ BZX 79 C 2V7	2.5	2.9	100	5	600	1	– 3.5	0	20	50	1	135
Δ BZX 79 C 3V0	2 8	3 2	95	5	600	1	– 3 5	0	10	40	1	125
P Δ BZX 79 C 3V3	3 1	3 5	95	5	600	1	– 3 5	0	5	40	1	115
P Δ BZX 79 C 3V6	3 4	3 8	90	5	600	1	– 3 5	0	5	40	1	105
P Δ BZX 79 C 3V9	3 7	4 1	90	5	600	1	– 3 5	0	3	40	1	95
P Δ BZX 79 C 4V3	4 0	4 6	90	5	600	1	– 3 5	0	3	20	1	90
P Δ BZX 79 C 4V7	4 4	5 0	80	5	500	1	– 3 5	+ 0 2	3	10	2	85
P Δ BZX 79 C 5V1	4 8	5 4	60	5	480	1	– 2 7	+ 1 2	2	10	2	80
P Δ BZX 79 C 5V6	5.2	6.0	40	5	400	1	– 2 0	+ 2.5	1	10	2	70
P Δ BZX 79 C 6V2	5.8	6 6	10	5	150	1	0 4	3 7	3	10	4	64
P Δ BZX 79 C 6V8	6.4	7 2	15	5	80	1	1 2	4 5	2	5	4	58
P Δ BZX 79 C 7V5	7.0	7.9	15	5	80	1	2 5	5 3	1	5	5	53
Δ BZX 79 C 8V2	7 7	8 7	15	5	80	1	3 2	6 2	0 7	2	5	47
P Δ BZX 79 C 9V1	8 5	9 6	15	5	100	1	3 8	7 0	0 5	2	6	43
P Δ BZX 79 C 10	9 4	10 6	20	5	150	1	4 5	8 0	0 2	2	7	40
Δ BZX 79 C 11	10 4	11 6	20	5	150	1	5 4	9 0	0 1	2	8	36
P Δ BZX 79 C 12	11 4	12 7	25	5	150	1	6 0	10 0	0 1	2	8	32
Δ BZX 79 C 13	12.4	14 1	30	5	170	1	7 0	11.0	0 1	2	8	29
P Δ BZX 79 C 15	13 8	15 6	30	5	200	1	9 2	13.0	0 05	2	10	27
Δ BZX 79 C 16	15 3	17 1	40	5	200	1	10 4	14 0	0 05	2	11	24
P Δ BZX 79 C 18	16 8	19 1	45	5	225	1	12 4	16 0	0 05	2	13	21
P Δ BZX 79 C 20	18 8	21 2	55	5	225	1	14 4	18 0	0 05	2	14	20
P Δ BZX 79 C 22	20 8	23 3	55	5	250	1	16 4	20 0	0 05	2	15	18
P Δ BZX 79 C 24	22 8	25 6	70	5	250	1	18 4	22 0	0 05	2	17	16
P Δ BZX 79 C 27	25 1	28 9	80	2	300	0 5	21 4	25 3	0 05	2	19	14
Δ BZX 79 C 30	28	32	80	2	300	0 5	24 4	29 4	0 05	2	21	13
P Δ BZX 79 C 33	31	35	80	2	325	0 5	27 4	33 4	0 05	2	23	12
Δ BZX 79 C 36	34	38	90	2	350	0 5	30 4	37 4	0 05	2	25	11
Δ BZX 79 C 39	37	41	130	2	350	0 5	33 4	41.2	0.05	2	27	10
Δ BZX 79 C 43	40	46	150	2	375	0.5	37 6	46.6	0.05	2	29	9 2
Δ BZX 79 C 47	44	50	170	2	375	0.5	42 0	51 8	0 05	2	33	8.5
Δ BZX 79 C 51	48	54	180	2	400	0 5	46 6	57 2	0 05	2	36	7 8
Δ BZX 79 C 56	52	60	200	2	425	0 5	52 2	63 8	0 05	2	39	7 0
Δ BZX 79 C 62	58	66	215	2	450	0 5	58 8	71 6	0 05	2	43	6 4
BZX 79 C 68	64	72	240	2	475	0 5	65 6	79 8	0 05	2	48	5 9
BZX 79 C 75	70	79	255	2	500	0 5	73 4	88 6	0 05	2	52	5 3
BZX 79 C 82	77	87	280	2	525	0 5	80 4	97 6	0 05	2	62	4.9
BZX 79 C 91	85	96	300	2	550	0 5	89 4	109 2	0 05	2	69	4 4
BZX 79 C 100	94	106	500	2	600	0.5	99	121	0.05	2	76	4

* Pulse test $t_p \leq 300\mu s$ $\delta<2\%$.

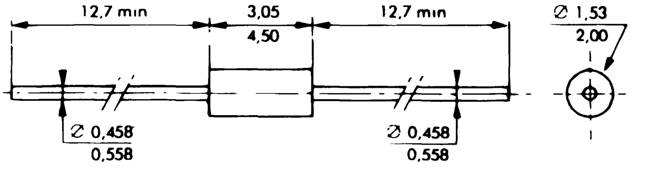
Δ Devices under CCQ/CECC.

P Preferred voltages

The regulation voltages are defined according to the E24 series

PACKAGE MECHANICAL DATA

DO 35 (Glass)

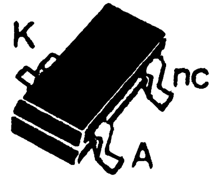


Cooling method . by convection and conduction
Marking clear, ring at cathode end
Weight 0 15g

SGS-THOMSON
MICROELECTRONICS

BZX 84 C 2V4 → 75

ZENER DIODES



SOT 23
(Plastic)

DESCRIPTION

350mW voltage regulator diodes designed for hybrid microcircuits and providing low dynamic resistance at low current.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 25°C	350	mW
I_{ZM}	Continuous Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175	°C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient**	625	°C/W
$R_{th\ (j-SR)}$	Junction to Substrate*	425	°C/W

* Substrate mounted on infinite heatsink.
* * Mounted on ceramic substrate · 7 x 5 x 0 5mm

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C)

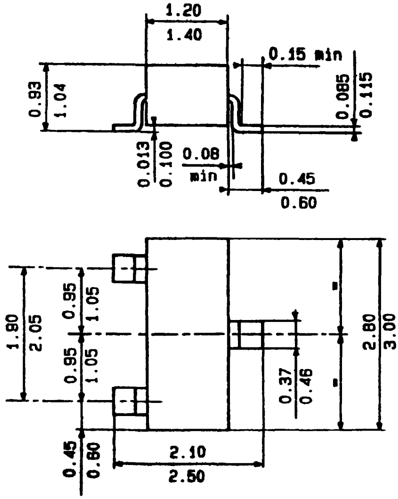
Type (1)	Marking	V_{ZT} min (V)	V_{ZT} max (V)	r_{ZT} max (Ω)	@ I_{ZT} (mA)	r_{ZK} max (Ω)	@ I_{ZK} (mA)	α V_Z typ (%/°C)	I_R max (μA)	@ V_R (V)	I_{ZM} (mA)
BZX 84 C 2V4	W 3	2.28	2.56	85	5	600	1	– 0.06	50	1	60
BZX 84 C 2V7	W 4	2.5	2.9	85	5	600	1	– 0.06	10	1	54
BZX 84 C 3V0	W 5	2 8	3.2	85	5	600	1	– 0.06	4	1	50
P BZX 84 C 3V3	W 6	3 1	3.5	85	5	600	1	– 0 06	2	1	47
P BZX 84 C 3V6	W 7	3 4	3 8	85	5	600	1	– 0 06	2	1	45
P BZX 84 C 3V9	W 8	3.7	4.1	85	5	600	1	– 0 06	2	1	43
P BZX 84 C 4V3	W 9	4 0	4.6	80	5	600	1	– 0 05	1	1	40
P BZX 84 C 4V7	Z 1	4 4	5 0	80	5	500	1	– 0 03	3	2	38
P BZX 84 C 5V1	Z 2	4 8	5 4	60	5	480	1	+ 0 02	2	2	35
P BZX 84 C 5V6	Z 3	5 2	6 0	40	5	400	1	+ 0 03	1	2	32
P BZX 84 C 6V2	Z 4	5 8	6.6	10	5	150	1	+ 0 04	3	4	28
P BZX 84 C 6V8	Z 5	6 4	7 2	15	5	80	1	+ 0 05	2	4	25
P BZX 84 C 7V5	Z 6	7 0	7 9	15	5	80	1	+ 0 05	1	5	23
P BZX 84 C 8V2	Z 7	7 7	8 7	15	5	80	1	+ 0.06	0 7	5	21
P BZX 84 C 9V1	Z 8	8 5	9 6	15	5	100	1	+ 0 06	0 5	6	18
BZX 84 C 10	Z 9	9 4	10 6	20	5	150	1	+ 0 07	0 2	7	16
BZX 84 C 11	Y 1	10 4	11.6	20	5	150	1	+ 0 07	0 1	8	15
P BZX 84 C 12	Y 2	11 4	12 1	25	5	150	1	+ 0 07	0 1	8	13
BZX 84 C 13	Y 3	12 4	14 1	30	5	170	1	+ 0 08	0 1	8	12
P BZX 84 C 15	Y 4	13.8	15.6	30	5	200	1	+ 0 08	0 05	0 7V_{ZT}	11
BZX 84 C 16	Y 5	15 3	17.1	40	5	200	1	+ 0.08	0.05	0.7V_{ZT}	10
BZX 84 C 18	Y 6	16.8	19.1	45	5	225	1	+ 0.08	0.05	0.7V_{ZT}	9 2
BZX 84 C 20	Y 7	18.8	21 2	55	5	225	1	+ 0.08	0 05	0 7V_{ZT}	8 3
BZX 84 C 22	Y 8	20 8	23 3	55	5	250	1	+ 0 09	0 05	0.7V_{ZT}	7 6
BZX 84 C 24	Y 9	22 8	25.6	70	5	250	1	+ 0 09	0 05	0 7V_{ZT}	7 0
BZX 84 C 27	Y 10	25 1	28.9	80	2	300	0 5	+ 0 09	0 05	0 7V_{ZT}	6 2
BZX 84 C 30	Y 11	28 0	32 0	80	2	300	0 5	+ 0 09	0 05	0 7V_{ZT}	5 6
BZX 84 C 33	Y 12	31 0	35 0	80	2	325	0.5	+ 0 09	0 05	0 7V_{ZT}	5 0
BZX 84 C 36	Y 13	34.0	38.0	90	2	350	0 5	+ 0 09	0 05	0 7V_{ZT}	4 6
BZX 84 C 39	Y 14	37 0	41 0	130	2	350	0 5	+ 0 09	0 05	0 7V_{ZT}	4 3
BZX 84 C 43	Y 15	40.0	46.0	150	2	375	0.5	+ 0.09	0 05	0 7V_{ZT}	3 9
BZX 84 C 47	Y 16	44.0	50.0	170	2	375	0.5	+ 0.09	0.05	0.7V_{ZT}	3.6
BZX 84 C 51	Y 17	48 0	54 0	180	2	400	0 5	+ 0.09	0 05	0.7V_{ZT}	3 3
BZX 84 C 56	Y 18	52 0	60 0	200	2	425	0 5	+ 0 09	0 05	0 7V_{ZT}	3 0
BZX 84 C 62	Y 19	58 0	66 0	215	2	450	0 5	+ 0.09	0 05	0 7V_{ZT}	2 7
BZX 84 C 68	Y 20	64 0	72 0	240	2	475	0 5	+ 0 09	0 05	0 7V_{ZT}	2 5
BZX 84 C 75	Y 21	70 0	80.0	255	2	500	0 5	+ 0 09	0 05	0 7V_{ZT}	2 2

P . Preferred voltages
Note 2% Tolerance available on preferred voltages only (with marking defined as per following table).

Part Number	Marking
BZX 84 B 3V3	DW6
BZX 84 B 3V6	DW7
BZX 84 B 3V9	DW8
BZX 84 B 4V3	DW9
BZX 84 B 4V7	DZ1
BZX 84 B 5V1	DZ2
BZX 84 B 5V6	DZ3
BZX 84 B 6V2	DZ4
BZX 84 B 6V8	DZ5
BZX 84 B 7V5	DZ6
BZX 84 B 8V2	DZ7
BZX 84 B 9V1	DZ8
BZX 84 B 12	DY2
BZX 84 B 15	DY4

PACKAGE MECHANICAL DATA

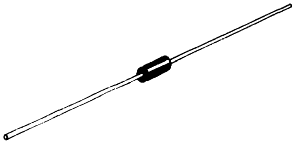
SOT 23 Plastic



BZX 85 C 2V7 → 200

ZENER DIODES

- LARGE VOLTAGE RANGE : 2.7V TO 200V
- DOUBLE SLUG TYPE CONSTRUCTION
- PRO ELECTRON REGISTRATION : 2.7V TO 110V
- CECC FOR TYPES : 2.7V TO 82V (LEVEL QUALITY ASSESSMENT : L)



DO 41
(Glass)

DESCRIPTION

1.3W hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 25°C	1.3	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 25°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction–ambient*	110	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}*		r_{ZT}/I_{ZT}	I_{ZT}	r_{ZK}/I_{ZK}		∝ V_Z		I_R/V_R T_{amb} 25°C	150°C	V_R	I_{ZM}	I_{ZSM}**
	min	max	max		max		min	max	max	max			
	(V)		(Ω)	(mA)	(Ω)	(mA)	(10^{-4}/°C)		(μA)		(V)	(mA)	(mA)
◊ • Δ BZX 85 C 2V7	2.5	2 9	20	80	400	1	– 8	– 5	150	300	1	370	2874
◊ • Δ BZX 85 C 3V0	2 8	3 2	20	80	400	1	– 8	– 5	100	300	1	340	2604
◊ • Δ BZX 85 C 3V3	3 1	3.5	20	80	400	1	– 8	– 5	40	200	1	320	2381
◊ • Δ BZX 85 C 3V6	3.4	3 8	20	70	500	1	– 8	– 5	20	50	1	290	2193
◊ • Δ BZX 85 C 3V9	3.7	4.1	15	60	500	1	– 7	– 2	10	20	1	280	2033
◊ • Δ BZX 85 C 4V3	4.0	4.6	13	50	500	1	– 5	1	3	10	1	250	1812
◊ • Δ BZX 85 C 4V7	4 4	5.0	13	45	500	1	– 3	4	3	10	1	215	1667
◊ • Δ BZX 85 C 5V1	4 8	5.4	10	45	500	1	– 1	4	1	10	1.5	200	1543
◊ • Δ BZX 85 C 5V6	5 2	6 0	7	45	400	1	0	4 5	1	10	2	190	1389
◊ • Δ BZX 85 C 6V2	5 8	6 6	4	35	300	1	1	5 5	1	10	3	170	1263
◊ • Δ BZX 85 C 6V8	6.4	7 2	3 5	35	300	1	1 5	6	1	10	4	155	1157
◊ • Δ BZX 85 C 7V5	7 0	7 9	3	35	200	0 5	2	6 5	1	10	4 5	140	1055
◊ • Δ BZX 85 C 8V2	7 7	8 7	5	25	200	0.5	3	7	1	10	6 2	130	958
◊ • Δ BZX 85 C 9V1	8.5	9 6	5	25	200	0 5	3 5	7 5	1	10	6 8	120	868
◊ • Δ BZX 85 C 10	9 4	10.6	7	25	200	0 5	4	8	0.5	10	7 5	105	786
◊ • Δ BZX 85 C 11	10 4	11.6	8	20	300	0.5	4.5	8	0.5	10	8 2	97	718
◊ • Δ BZX 85 C 12	11 4	12.7	9	20	350	0 5	4 5	8 5	0 5	10	9 1	88	656
◊ • Δ BZX 85 C 13	12 4	14 1	10	20	400	0 5	5	8 5	0 5	10	10	79	591
◊ • Δ BZX 85 C 15	13 8	15 6	15	15	500	0 5	5 5	9	0 5	10	11	71	534
◊ • Δ BZX 85 C 16	15 3	17 1	15	15	500	0 5	5 5	9	0 5	10	12	66	487
◊ • Δ BZX 85 C 18	16 8	19 1	20	15	500	0 5	6	9	0 5	10	13	62	436
◊ • Δ BZX 85 C 20	18.8	21 2	24	10	600	0 5	6	9	0 5	10	15	56	393
◊ • Δ BZX 85 C 22	20 8	23 3	25	10	600	0 5	6	9 5	0 5	10	16	52	358
◊ • Δ BZX 85 C 24	22.8	25.6	25	10	600	0 5	6	9 5	0 5	10	18	47	326
◊ • Δ BZX 85 C 27	25.1	28 9	30	8	750	0 25	6	9.5	0.5	10	20	41	288
◊ • Δ BZX 85 C 30	28	32	30	8	1000	0 25	6	9.5	0.5	10	22	36	260
◊ • Δ BZX 85 C 33	31	35	35	8	1000	0 25	6	9 5	0 5	10	24	33	238
◊ • Δ BZX 85 C 36	34	38	40	8	1000	0 25	6	9 5	0 5	10	27	30	219
◊ • Δ BZX 85 C 39	37	41	50	6	1000	0 25	6	9 5	0.5	10	30	28	203
◊ • Δ BZX 85 C 43	40	46	50	6	1000	0 25	6	9 5	0 5	10	33	26	181
◊ • Δ BZX 85 C 47	44	50	90	4	1500	0 25	6	9 5	0 5	10	36	23	167
◊ • Δ BZX 85 C 51	48	54	115	4	1500	0 25	6	9 5	0 5	10	39	21	154
◊ • Δ BZX 85 C 56	52	60	120	4	2000	0 25	6	9 5	0 5	10	43	19	139
◊ • Δ BZX 85 C 62	58	66	125	4	2000	0.25	6	9 5	0.5	10	47	16	126
◊ BZX 85 C 68	64	72	130	4	2000	0.25	6	9.5	0 5	10	51	15	116
◊ BZX 85 C 75	70	80	135	4	2000	0 25	6	9 5	0 5	10	56	14	104
BZX 85 C 82	77	87	200	2 7	3000	0 25	7	12	0 5	10	62	12	96
BZX 85 C 91	85	96	250	2 7	3000	0 25	7	12	0 5	10	68	10	87
BZX 85 C 100	94	106	350	2 7	3000	0 25	7	12	0 5	10	75	9 4	79
BZX 85 C 110	104	116	450	2 7	4000	0 25	7	12	0 5	10	82	8 6	72
BZX 85 C 120	114	127	550	2	4500	0 25	7	12	0 5	10	91	7 8	66
BZX 85 C 130	124	141	700	2	5000	0 25	7	12	0 5	10	100	7 0	59
BZX 85 C 150	138	156	1000	2	6000	0 25	7	12	0.5	10	110	6 4	53
BZX 85 C 160	153	171	1100	1.5	6500	0.25	7	12	0.5	10	120	5.8	49
BZX 85 C 180	168	191	1200	1 5	7000	0 25	7	12	0 5	10	130	5 2	44
BZX 85 C 200	180	212	1500	1.5	8000	0 25	7	12	0 5	10	150	4 7	39

* Pulse test · 20ms ≤ t_p ≤ 50ms
* * Rectangular waveform (t_p = 10ms)
Δ Devices under CCQ/CCT
• Devices under CCQ/CECC
◊ CNES qualified product
The regulation voltages are defined according to the E24 series
Forward voltage drop $V_F \leq 1V$ (T_{amb} = 25°C, I_F = 0 2A)

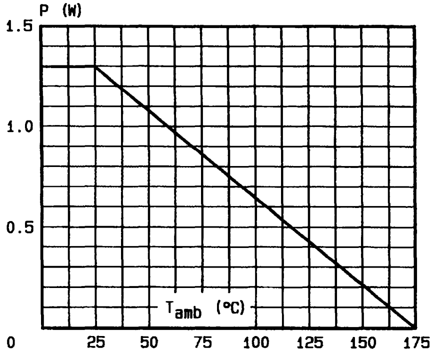


Fig.1 - Power dissipation versus ambient temperature on infinite heatsink.

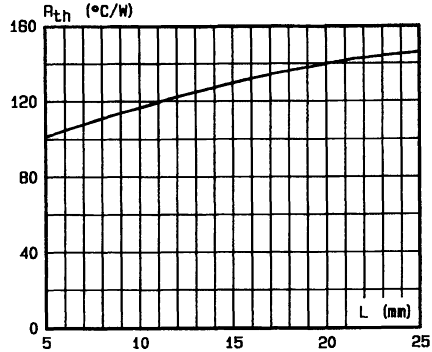


Fig.2 - Thermal resistance versus lead length on infinite heatsink.

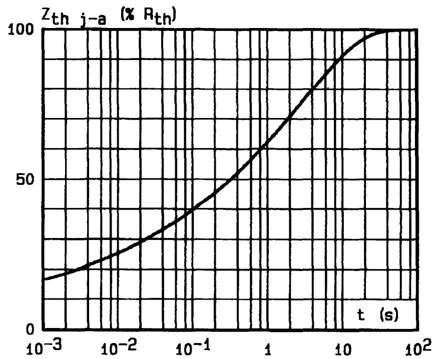
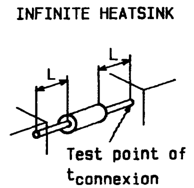


Fig.3 - Transient thermal impedance junction-ambient versus pulse duration.



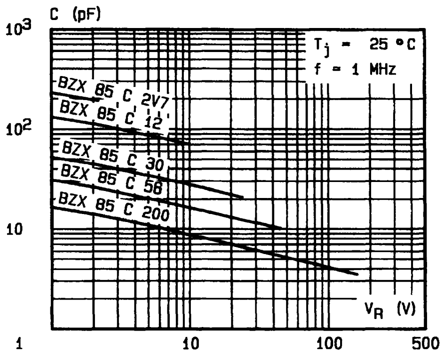


Fig.4 - Capacitance versus reverse applied voltage.

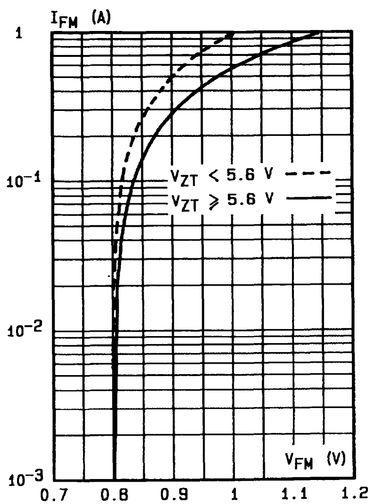


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

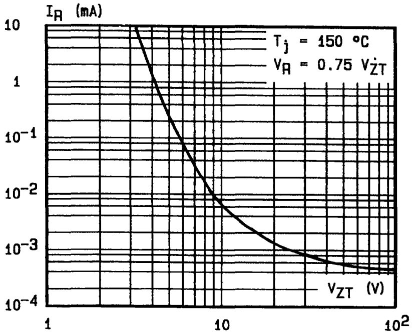


Fig.6 - Reverse current versus regulation voltage (Typical Values).

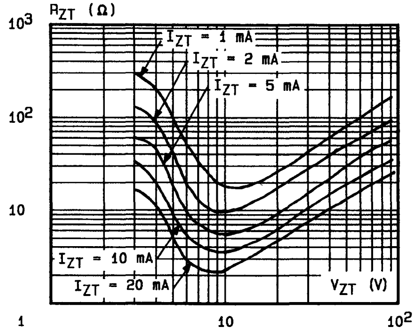


Fig.7 - Differential resistance versus regulation voltage (Typical Values).

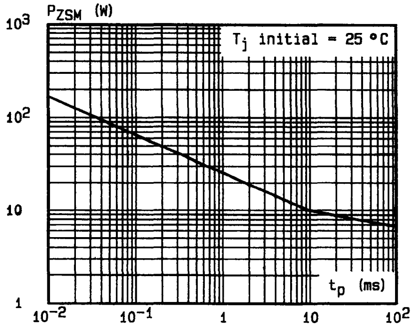
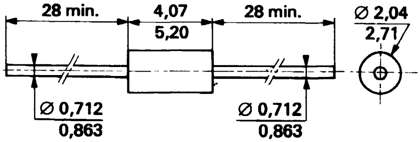


Fig.8 - Peak pulse power versus pulse duration (rectangular waveform). (maximum values).

PACKAGE MECHANICAL DATA

DO 41 (Glass)



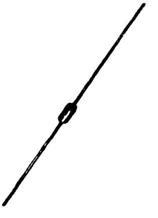
Cooling method by convection and conduction
Marking : clear, ring at cathode end
Weight . 0.34g

SGS-THOMSON MICROELECTRONICS

BZY 97 C 3V3 → 200

ZENER DIODES

- VOLTAGE RANGE: 3.3V TO 200V
- HERMETICALLY SEALED PLASTIC CASE
- PACKAGE ACCORDING TO NORMALIZATION CCTU : F 126
- PRO ELECTRON REGISTRATION
- HIGH SURGE CAPABILITY (20W @10ms)



F 126
(Plastic)

DESCRIPTION

1.5W silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 60°C	1.5	W
I_{ZM}	Continuous Reverse Current*	T_{amb} = 60°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 3s at 5mm from case		300	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	60	°C/W

* On infinite heatsink with 10mm lead length.

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* min (V) (1)	V_{ZT}/I_{ZT}* max (V) (1)	r_{ZT}/I_{ZT} max (Ω) (1)	I_{ZT} (mA) (1)	∝ V_Z min (10^{-4}/°C)	∝ V_Z max (10^{-4}/°C)	I_R/V_R max (µA)	V_R (V)	I_{ZM} T_{amb} 60°C (mA)	I_{ZSM} (A) (3)
BZY 97 C 3V3	3.1	3.5	10	100	– 10	2			429	4.4
BZY 97 C 3V6	3.4	3.8	10	100	– 8	2			395	4.0
BZY 97 C 3V9	3.7	4.1	7	100	– 7	2			366	3.8
BZY 97 C 4V3	4.0	4.6	7	100	– 7	3			327	3.3
BZY 97 C 4V7	4.4	5.0	7	100	– 7	4			300	3.1
P BZY 97 C 5V1	4.8	5.4	5	100	– 6	5			278	2.8
P BZY 97 C 5V6	5.2	6.0	2	100	– 3	5	1	1	250	2.6
P BZY 97 C 6V2	5.8	6.6	2	100	– 1	6	1	1	227	2.3
P BZY 97 C 6V8	6.4	7.2	2	100	0	7	1	1	208	2.1
BZY 97 C 7V5	7.0	7.9	2	100	0	7	0.5	2	190	1.9
BZY 97 C 8V2	7.7	8.7	2	100	3	8	0.5	3.5	172	1.8
BZY 97 C 9V1	8.5	9.6	4	50	3	8	0.5	3.5	156	1.6
BZY 97 C 10	9.4	10.6	4	50	5	9	0.5	5	142	1.5
BZY 97 C 11	10.4	11.6	7	50	5	10	0.5	5	129	1.3
P BZY 97 C 12	11.4	12.7	7	50	5	10	0.5	7	118	1.2
P BZY 97 C 13	12.4	14.1	10	50	5	10	0.5	7	106	1.1
P BZY 97 C 15	13.8	15.6	10	50	5	10	0.5	10	96	1.0
BZY 97 C 16	15.3	17.1	15	25	6	11	0.5	10	88	0.90
P BZY 97 C 18	16.8	19.1	15	25	6	11	0.5	10	79	0.81
P BZY 97 C 20	18.8	21.2	15	25	6	11	0.5	10	71	0.73
P BZY 97 C 22	20.8	23.3	15	25	6	11	0.5	12	64	0.66
P BZY 97 C 24	22.8	25.6	15	25	6	11	0.5	12	59	0.60
P BZY 97 C 27	25.1	28.9	15	25	6	11	0.5	14	52	0.53
P BZY 97 C 30	28	32	15	25	6	11	0.5	14	47	0.48
P BZY 97 C 33	31	35	15	25	6	11	0.5	17	43	0.44
P BZY 97 C 36	34	38	40	10	6	11	0.5	17	40	0.40
BZY 97 C 39	37	41	40	10	6	11	0.5	20	37	0.38
BZY 97 C 43	40	46	45	10	7	12	0.5	20	33	0.33
P BZY 97 C 47	44	50	45	10	7	12	0.5	24	30	0.31
BZY 97 C 51	48	54	60	10	7	12	0.5	24	28	0.28
BZY 97 C 56	52	60	60	10	7	12	0.5	28	25	0.26
P BZY 97 C 62	58	66	80	10	7	12	0.5	28	23	0.23
P BZY 97 C 68	64	72	80	10	7	12	0.5	34	21	0.21
BZY 97 C 75	70	79	100	10	7	12	0.5	34	19	0.19
BZY 97 C 82	77	87	100	10	7	12	0.5	41	17	0.18
BZY 97 C 91	85	96	200	5	8	13	0.5	41	16	0.16
BZY 97 C 100	94	106	200	5	8	13	0.5	50	14	0.15
BZY 97 C 110	104	116	250	5	8	13	0.5	50	13	0.13
BZY 97 C 120	114	127	250	5	8	13	0.5	60	12	0.12
P BZY 97 C 130	124	141	300	5	8	13	0.5	60	11	0.11
P BZY 97 C 150	138	156	300	5	8	13	0.5	75	10	0.10
BZY 97 C 160	153	171	350	5	8	13	0.5	75	9	0.09
BZY 97 C 180	168	191	350	5	8	13	0.5	90	8	0.08
P BZY 97 C 200	188	212	350	5	8	13	0.5	90	7	0.07

(1) Pulse test $t_p \leq 50$ms $\delta < 2\%$
(2) On infinite heatsink . d = 10mm.
(3) Rectangular waveform (t_p = 10ms)
The regulation voltages are defined according to the E24 series
P Preferred voltages
Forward voltage drop $V_F \leq 1.2$V (T_{amb} = 25°C, I_F = 200mA)

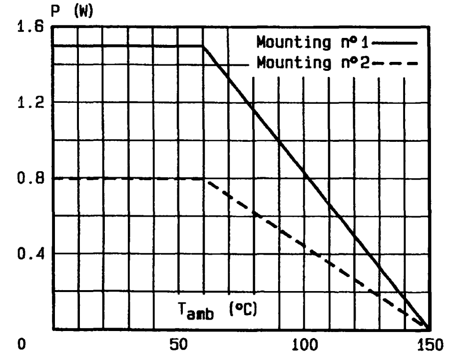


Fig.1 - Power dissipation versus ambient temperature.

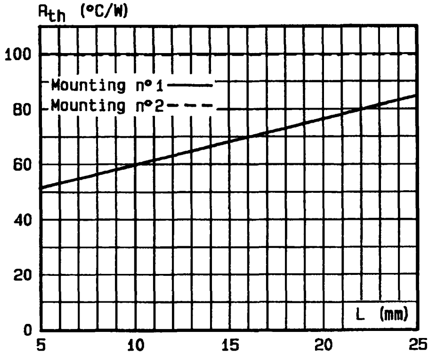


Fig.2 - Thermal resistance versus lead length.

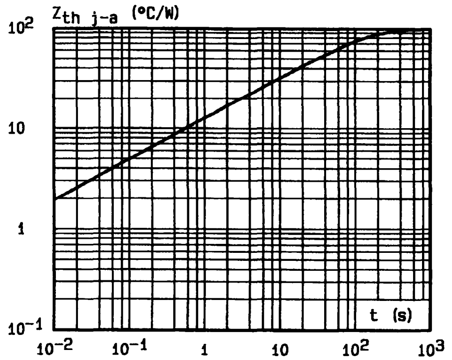
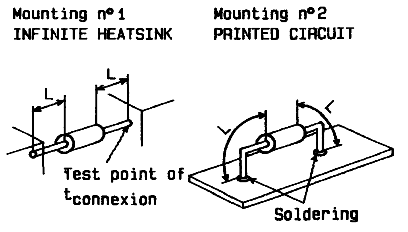


Fig.3 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).



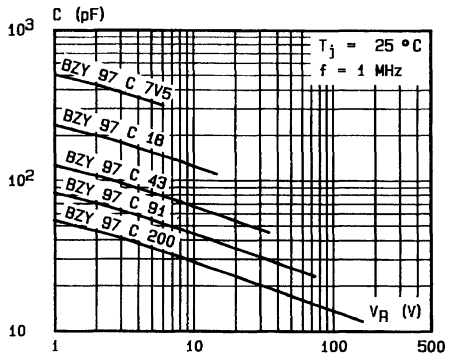


Fig.4 - Capacitance versus reverse applied voltage.

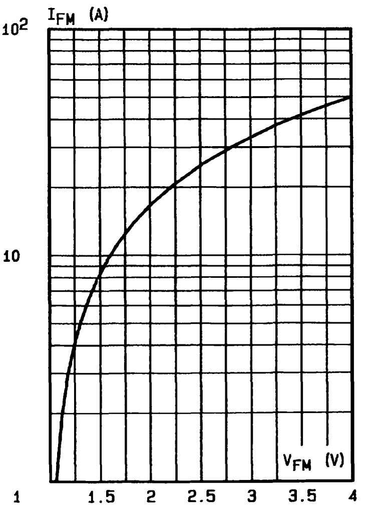


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

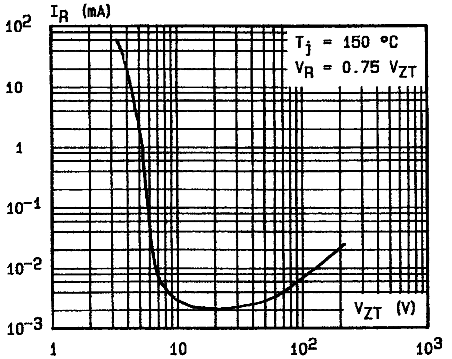


Fig.6 – Reverse current versus regulation voltage (typical values).

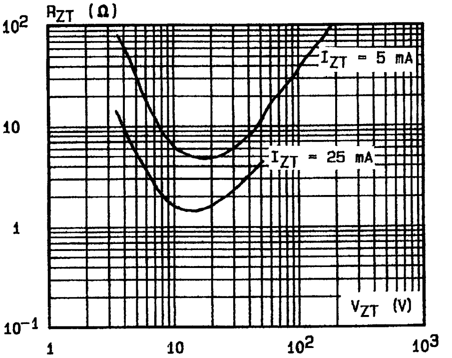


Fig.7 – Differential resistance versus regulation voltage (typical values).

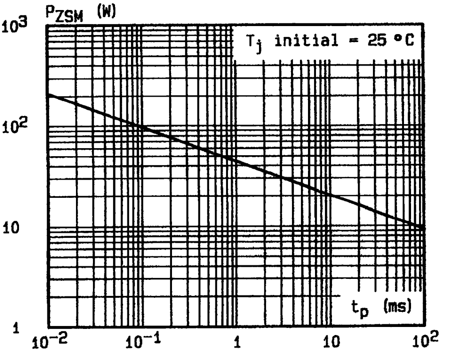
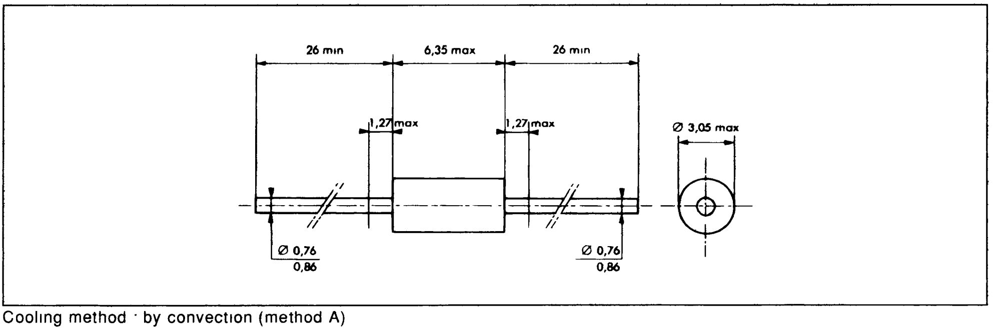


Fig.8 – Peak pulse power versus pulse duration (rectangular wave form) (maximum values).

PACKAGE MECHANICAL DATA

F 126 Plastic



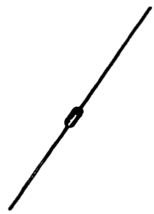
Cooling method : by convection (method A)
Marking : clear, ring at cathode end
Weight : 0.4g

SGS-THOMSON MICROELECTRONICS

SGS-THOMSON
MICROELECTRONICS

PLE 0.7

REFERENCE DIODE



F 126
(Plastic)

DESCRIPTION

Very low voltage reference diodes in plastic package for specific applications where very tigh ΔVz is required. ΔVz lower than 100mV for a forward current of 5mA.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(AV)}$	Average Forward Current*	T_{amb} = 85°C	0.4	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	30	A
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 125	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient**	100	°C/W

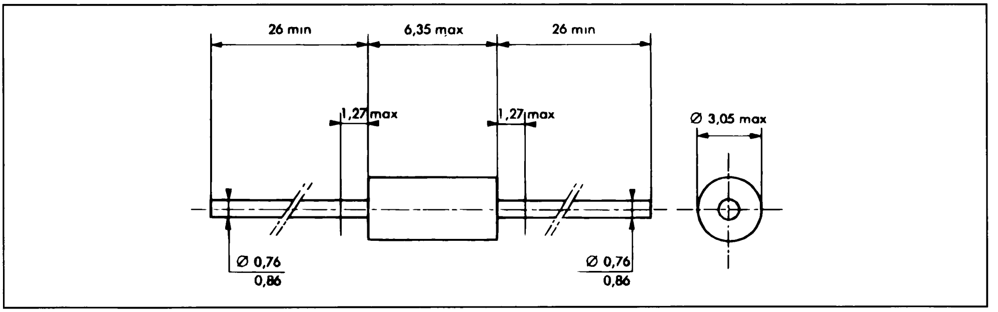
* Single phase, half wave, resistive or inductive load, L (leads) = 10mm
* * On printed circuit with L = 10mm

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	min.	Typ.	Max.	Unit
I_R	T_j = 25°C	V_R = 5V			10	μA
V_F	T_j = 25°C	I_F = 5mA	0.65		0.75	V
R	T_j = 25°C	I_F = 5mA			10	Ω
αV_F	25°C ≤ T_j ≤ 125°C	I_F = 5mA	– 25		– 30	10^{-4}/°C

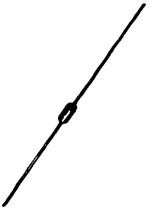
PACKAGE MECHANICAL DATA

F 126 (Plastic)



Cooling method by convection (method A)
Marking clear, ring at cathode end
Weight · 0 4g

REFERENCE DIODE



F 126
(Plastic)

DESCRIPTION

Low voltage reference diodes in plastic package for specific applications where very tigh ΔVz is required. ΔVz specified is lower than 150mV for a forward current of 5mA.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(AV)}$	Average Forward Current*	T_{amb} = 50°C	0.4	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	30	A
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 125	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient**	100	°C/W

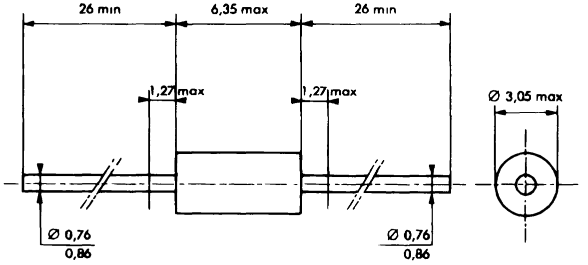
* Single phase, half wave, resistive or inductive load, L (leads) = 10mm.
* * On printed circuit with L = 10mm.

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions	min.	Typ.	Max.	Unit
I_R	T_j = 25°C	V_R = 5V			10	μA
V_F	T_j = 25°C	I_F = 5mA	1.35		1.55	V
R	T_j = 25°C	I_F = 5mA			20	Ω
αV_F	25°C ≤ T_j ≤ 125°C	I_F = 5mA	– 25		– 30	10^{-4}/°C

PACKAGE MECHANICAL DATA

F 126 (Plastic)



Cooling method by convection (method A)
Marking · clear, ring at cathode end
Weight 0.4g

SM5Z 3V3A → 200A

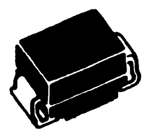
ZENER DIODES

NEW SERIE

- HIGH SURGE CAPABILITY UP TO : 180W @ 8.3ms
- LARGE VOLTAGE RANGE : 3.3V → 200V

SURFACE MOUNT TRANSIL FEATURES

- A PERFECT PICK AND PLACE BEHAVIOUR
- AN EXCELLENT ON BOARD STABILITY
- A FULL COMPATIBILITY WITH BOTH GLUING AND PASTE SOLDERING TECHNOLOGIES
- BODY MARKED WITH TYPE CODE AND LOGO
- STANDARD PACKAGING : 12mm TAPE (EIA STD. RS481)
- TINNED COPPER LEADS
- HIGH TEMPERATURE RESISTANT RESIN



SOD 6
(Plastic)

DESCRIPTION

5W hermetically sealed plastic silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{lead} = 50°C	5	W
I_{ZM}	Continuous Reverse Current	T_{lead} = 50°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175	°C
T_L	Maximum Temperature for Soldering during 10s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction–leads	25	°C/W

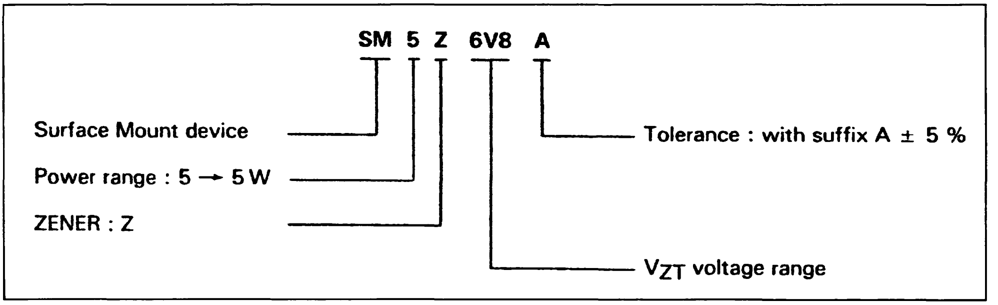
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	Marking	V_{ZT}/I_{ZT} nom (V) (1)	I_{ZT} (mA) (1)	r_{ZT}/I_{ZT} max (Ω) (1)	r_{ZK}/I_{ZK} 1.0 mA max (Ω)	I_R/V_R max (µA)	(V)	$\propto V_Z$ typ (10^{-4}/°C)	I_{ZM} T_{lead} 50°C max (mA)	ΔV_Z max (V) (2)	I_{ZSM} max (A) (3)
SM5Z 3V3 A	ZDD	3 3	380	3.0	400	300	1.0	– 6	1440	0.85	15 5
SM5Z 3V6 A	ZDE	3.6	350	2 5	500	150	1.0	– 5.5	1320	0 80	14 2
SM5Z 3V9 A	ZDF	3.9	320	2.0	500	50	1.0	– 5	1220	0 54	13 1
SM5Z 4V3 A	ZDG	4.3	290	2.0	500	10	1.0	– 4	1100	0 49	11 9
SM5Z 4V7 A	ZDH	4.7	260	2 0	450	5 0	1.0	– 2	1010	0 44	10 9
P SM5Z 5V1 A	ZDK	5 1	240	1.5	400	1 0	1 0	1	930	0 39	10 1
P SM5Z 5V6 A	ZDL	5 6	220	1.0	400	1 0	2.0	2 5	865	0 25	9 2
P SM5Z 6V2 A	ZDN	6 2	200	1 0	200	1 0	3 0	3.2	765	0 10	8 3
SM5Z 6V8 A	ZDP	6 8	175	1.0	200	10	5 2	4	700	0 15	7 5
P SM5Z 7V5 A	ZDQ	7.5	175	1.5	200	10	5.7	4.5	630	0 15	6 8
P SM5Z 8V2 A	ZDR	8 2	150	1 5	200	10	6 2	4 8	580	0 20	6 3
SM5Z 9V1 A	ZDT	9 1	150	2 0	150	7.5	6 9	5.1	520	0.22	5 6
P SM5Z 10 A	ZDU	10	125	2.0	125	5.0	7.6	5.5	475	0 22	5 1
P SM5Z 12 A	ZDW	12	100	2 5	125	2 0	9.1	6 5	395	0.25	4 3
SM5Z 13 A	ZDX	13	100	2.5	100	1 0	9 9	6 5	365	0.25	3 9
SM5Z 14 A	ZDY	14	100	2.5	75	1 0	10 6	7	340	0 25	3 7
P SM5Z 15 A	ZDZ	15	75	2 5	75	1 0	11 5	7	315	0 25	3 4
SM5Z 16 A	ZED	16	75	2 5	75	1 0	12.2	7	295	0.30	3 2
P SM5Z 18 A	ZEF	18	65	2 5	75	0.5	13 7	7.5	264	0 40	2 8
P SM5Z 20 A	ZEH	20	65	3.0	75	0 5	15.2	7 5	237	0.40	2 6
P SM5Z 22 A	ZEK	22	50	3 5	75	0.5	16.7	8	216	0.45	2 3
P SM5Z 24 A	ZEL	24	50	3 5	100	0.5	18.2	8	198	0.55	2 1
P SM5Z 27 A	ZEN	27	50	5.0	120	0 5	20.6	8.5	176	0.60	1 9
P SM5Z 30 A	ZEQ	30	40	8 0	140	0 5	22.8	8.5	158	0 60	1 7
P SM5Z 33 A	ZER	33	40	10	150	0 5	25 1	8 5	144	0 60	1 6
SM5Z 36 A	ZES	36	30	11	160	0.5	27 4	9	132	0 65	1 4
P SM5Z 39 A	ZET	39	30	14	170	0 5	29 7	9	122	0 65	1 3
P SM5Z 47 A	ZEV	47	25	25	210	0 5	35.8	9	100	0 80	1 1
P SM5Z 62 A	ZFD	62	20	42	400	0 5	47 1	9	76	1 35	0 83
P SM5Z 82 A	ZFG	82	15	65	720	0 5	62.2	9	58	1.80	0 63
SM5Z 91 A	ZFK	91	15	75	760	0.5	69.2	9	52.5	2.20	0 56
P SM5Z 100 A	ZFL	100	12	90	800	0.5	76.0	9.5	47.5	2 50	0 51
SM5Z 110 A	ZFM	110	12	125	1000	0 5	83.6	9 5	43	2 50	0 47
P SM5Z 150 A	ZFR	150	8.0	330	1500	0 5	114	9.5	31.6	3 00	0 34
P SM5Z 180 A	ZFU	180	5.0	430	1750	0.5	137	9 5	26 4	4.00	0 28
P SM5Z 200 A	ZFW	200	5.0	480	1850	0 5	152	10	23 6	5 00	0 26

(1) Pulse test $t_p \leq$ 50ms δ < 2%
(2) Measured between 10% and 50% of I_{ZM}
(3) Rectangular waveform (t_p = 10ms)

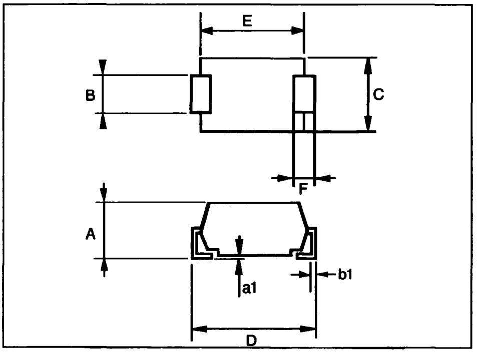
Tolerance on nominal V_{ZT} value · ± 5%
Forward voltage drop · $V_F \leq$ 1 2V (T_{amb} = 25°C, I_F = 1A)
P : Preferred voltages

ORDER CODE



PACKAGE MECHANICAL DATA

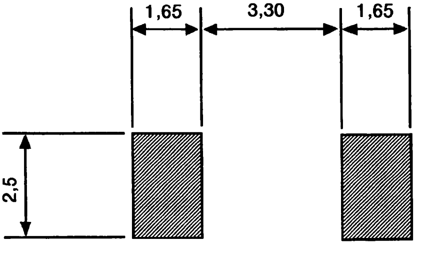
SOD 6 (plastic)



Ref.	Millimetres		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.10	2.30	0.082	0.090
b1	0.29	0.32	0.011	0.012
C	3.80	4.20	0.149	0.165
D	6.00	6.40	0.236	0.252
E	4.70	5.00	0.185	0.196
F	0.90	1.30	0.035	0.051

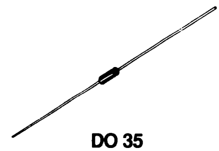
Laser marking.
The logo indicates cathode

FOOT PRINT DIMENSIONS (millimeters)



ZENER DIODES

- A PRONOUNCED LOW CURRENT AVALANCHE CHARACTERISTICS
- A REGULATION FACTOR GUARANTEED ACROSS A LARGE CURRENT RANGE (UP TO TWO DECADES OF I_Z)
- SPECIFIED NOISE LEVEL



DO 35
(Glass)

DESCRIPTION

The T-LVA range has been specially developped for the range of Zener voltage between 4.7V to 10V.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 25°C	500	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200 – 65 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction–ambient*	300	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

GENERAL PURPOSE

Types	V_{ZT}/I_{ZT} nom (V) (1) (2) (3)	I_{ZT} (mA)	r_{ZT}/I_{ZT} (Ω) (4)	I_R / (µA)	V_R (V)	Noise Density @ 250µA max (µV/√Hz) (5)
T–LVA 47A	4.7	10	15	4.0	2.0	4
T–LVA 51A	5.1	5	15	0.1	2.0	4
T–LVA 56A	5.6	1	40	0.05	3.0	4
T–LVA 62A	6.2	1	50	0.05	4.0	4
T–LVA 68A	6.8	1	50	0.05	5.0	4
T–LVA 75A	7.5	1	100	0.01	6.0	4
T–LVA 82A	8.2	1	100	0.01	6.5	4
T–LVA 91A	9.1	1	100	0.01	8.0	4
T–LVA 100A	10.0	1	100	0.01	9.0	4

Forward voltage drop · V_F < 1.5V (T_{amb} = 25°C, I_F = 200mA)

Notes : 1. For other voltages, consult the manufacturer.
2. Tolerance on nominal V_{ZT} value · + 5%
3 For other tolerances, consult the manufacturer
4. Measured @ DC test current with 10% AC superimposed (50Hz).
5. Noise measured at 100Hz with a diode noise analyser "Quan-Tech" Model 327– Bandpass 1000Hz

ELECTRICAL CHARACTERISTICS (continued)

HIGH PERFORMANCE

Types	V_{ZT}/I_{ZT} (1) (2) (4) nom (V)	I_{ZT} (mA)	r_{ZT}/I_{ZT} (5) (Ω)	I_R (µA)	V_R (V)	Noise Density @ 250µA (7) max (µV/√Hz)	Maximum Regulation $I_{ZT} - I_{ZL}$: ΔVz (V)	I_{ZL} (mA)
T–LVA 347A	4.7	10	10	2.0	2.0	1	0.50	1.0
T–LVA 351A	5.1	5	10	2.0	3.0	1	0.30	0.25
T–LVA 356A	5.6	1	40	2.0	4.5	1	0.10	0.05
T–LVA 362A	6.2	1	45	0 5	5.6	1	0.10	0.01
T–LVA 368A	6.8	1	50	0.05	6.2	1	0.10	0.01
T–LVA 375A	7.5	1	50	0.01	6.8	1	0.10	0.01
T–LVA 382A	8.2	1	60	0.01	7.5	1	0.10	0.01
T–LVA 391A	9.1	1	60	0.01	8.2	2	0.10	0.01
T–LVA 3100A	10.0	1	60	0.01	9.1	2	0.10	0.01

Forward voltage drop $V_F \leq 1\ 2V$ (T_{amb} = 25°C, I_F = 200mA)

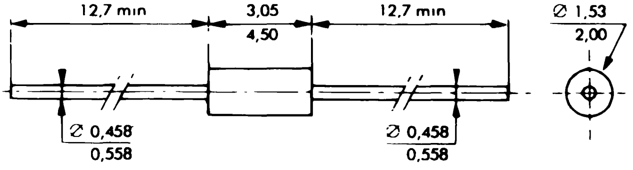
HIGH PERFORMANCE, LOW CURRENT

Types	V_{ZT} @ 250µA (1) (3) (4) nom (V)	r_{ZT} @ 250µA max (Ω)	θV_Z @ 250µA (6) nom (mV/°C)	I_R @ 80%V_Z max (µA)	Maximum Regulation ΔVz (V)	I_{LO} (µA)	I_{HI} (mA)	Noise Density max (µV/√Hz)	Typical Parameters V_Z @ 10µA (V)	I_R @ 50% V_Z (nA)	I_R @ 90% V_Z (nA)
T–LVA 450A	5.0	700	0.75	10.0	0.40	100	1.0	1	4.15	70	15000
T–LVA 453A	5.3	250	1.33	5 0	0.20	100	1.0	1	4.9	35	7000
T–LVA 456A	5.6	100	1.96	1.0	0.10	50	1.0	1	5.45	15	3000
T–LVA 459A	5.9	100	2.30	0.5	0.10	10	1.0	1	5.85	2.5	1000
T–LVA 462A	6.2	100	2.67	0.1	0.10	10	1.0	1	6.2	0 8	130
T–LVA 465A	6.5	100	3.06	0.05	0.10	10	1.0	1	6.5	0.15	25
T–LVA 468A	6.8	100	3.40	0.01	0.10	10	1.0	1	6.8	< 0.10	9.0
T–LVA 471A	7.1	175	3.76	0.01	0.10	10	1.0	1	7.1	< 0.10	5.5
T–LVA 474A	7.4	175	4.07	0.01	0.10	10	1.0	1	7.4	< 0.10	3.0
T–LVA 477A	7.7	175	4.47	0.01	0.10	10	1.0	1	7.7	< 0.10	2.5
T–LVA 480A	8.0	175	4.80	0.01	0.10	10	1.0	1	8.0	< 0.10	1 8
T–LVA 483A	8.3	175	5.15	0.01	0.10	10	1.0	1	8.3	< 0.10	1.2
T–LVA 486A	8.6	175	5.50	0.01	0.10	10	1.0	1	8.6	< 0.10	0.9
T–LVA 489A	8.9	175	5.87	0.01	0.10	10	1.0	2	8.9	< 0.10	0.6
T–LVA 492A	9.2	175	6.16	0 01	0.10	10	1 0	2	9 2	< 0.10	0.5
T–LVA 495A	9.5	175	6.46	0.01	0.10	10	1.0	2	9.5	< 0 10	0.5
T–LVA 498A	9.8	175	6.86	0.01	0.10	10	1.0	2	9.8	< 0.10	0.4

Notes :
1 For other voltages consult the manufacturer
2 Tolerance on nominal V_{ZT} · ± 5%
3 Tolerance on nominal V_{ZT} · ± 0 2V
4 For other tolerances, consult the manufacturer
5 Measured @ DC test current with 10% AC superimposed (50Hz)
6 Tolerance ± 0 5 mV/°C, 0 to 100°C, to V_{ZT} nominal only
7 Noise measured at 1000Hz with a diode noise analyser "Quan–tech" model 327–Bandpass 1000Hz.

PACKAGE MECHANICAL DATA

DO 35 (Glass)

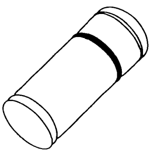


Cooling method . by convectio and conduction
Marking · clear, ring at cathode end
Weight : 0.15g

TM 4728A → TM 4764A

ZENER DIODES

- VOLTAGE RANGE : 3.3V TO 100V



MELF
(Glass)

DESCRIPTION

1W hermeticallily sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{lead} = 50°C	1	W
I_{ZM}	Continuous Reverse Current	T_{lead} = 50°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction–leads	150	°C/W

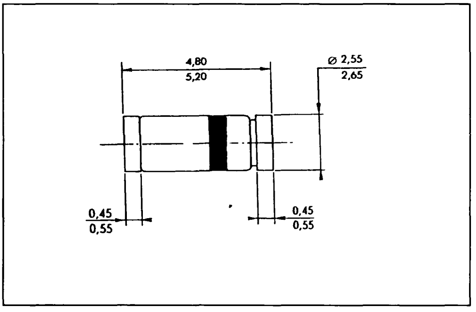
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT}* max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω)	(mA)	$\propto V_Z$ typ (10^{-4}/°C)	I_R/V_R max (µA)	V_R (V)	I_{ZM} T_{amb} 55°C (mA)	I_{ZSM}* max (mA)
P TM 4728A	3 3	10	76	400	1	– 6	100	1 0	276	2381
TM 4729A	3 6	10	69	400	1	– 6	100	1 0	252	2193
P TM 4730A	3 9	9	64	400	1	– 5	50	1 0	234	2033
TM 4731A	4 3	9	58	400	1	– 3	10	1 0	217	1812
P TM 4732A	4 7	8	53	500	1	– 1	10	1 0	193	1667
P TM 4733A	5 1	7	49	550	1	1	10	1 0	178	1543
P TM 4734A	5 6	5	45	600	1	3	10	2 0	162	1389
P TM 4735A	6 2	2	41	700	1	4	10	3 0	146	1263
P TM 4736A	6 8	3 5	37	700	1	5	10	4 0	133	1167
P TM 4737A	7 5	4	34	700	0 5	5	10	5 0	121	1055
P TM 4738A	8 2	4 5	31	700	0 5	6	10	6 0	110	958
P TM 4739A	9 1	5	28	700	0 5	6	10	7 0	100	868
P TM 4740A	10	7	25	700	0 25	7	10	7 6	91	786
TM 4741A	11	8	23	700	0 25	7	5	8 4	83	718
P TM 4742A	12	9	21	700	0 25	7	5	9 1	76	656
TM 4743A	13	10	19	700	0 25	7	5	9 9	69	591
P TM 4744A	15	14	17	700	0 25	8	5	11 4	61	534
TM 4745A	16	16	15 5	700	0 25	8	5	12 2	57	487
TM 4746A	18	20	14	750	0 25	8	5	13 7	50	436
TM 4747A	20	22	12 5	750	0 25	8	5	15 2	45	393
TM 4748A	22	23	11 5	750	0 25	8	5	16 7	41	358
TM 4749A	24	25	10 5	750	0 25	8	5	18 2	38	326
TM 4750A	27	35	9 5	750	0 25	9	5	20 6	34	288
TM 4751A	30	40	8 5	1000	0 25	9	5	22 8	30	260
TM 4752A	33	45	7 5	1000	0 25	9	5	25 1	27	238
TM 4753A	36	50	7 0	1000	0 25	9	5	27 4	25	219
TM 4754A	39	60	6 5	1000	0 25	9	5	29 7	23	203
TM 4755A	43	70	6 0	1500	0 25	9	5	32 7	22	181
TM 4756A	47	80	5 5	1500	0 25	9	5	35 8	19	167
TM 4757A	51	95	5 0	1500	0 25	9	5	38 8	18	154
TM 4758A	56	110	4 5	2000	0 25	9	5	42 6	16	139
TM 4759A	62	125	4 0	2000	0 25	9	5	47 1	14	126
TM 4760A	68	150	3 7	2000	0 25	9	5	51 7	13	116
TM 4761A	75	175	3 3	2000	0 25	9	5	56	12	104
TM 4762A	82	200	3 0	3000	0 25	9	5	62 2	11	96
TM 4763A	91	250	2 8	3000	0 25	9	5	69 2	10	87
TM 4764A	100	350	2 5	3000	0 25	9	5	76	9	79

* Measure under thermal equilibrium and DC test conditions (T_{amb}= 25°C)
* * Rectangular wave form (t_p = 10ms)
Tolerance on nominal V_{ZT} value ± 5%
Voltage > 100V on request
P Preferred voltages
Tight tolerances on preferred voltages ± 3% – ± 2%
Forward voltage drop $V_F \le$ 1 2V (T_{amb} = 25°C, I_F = 200mA)

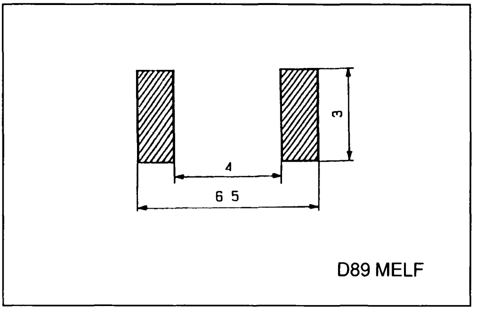
PACKAGE MECHANICAL DATA

MELF Glass



Marking ring at cathode end
Weight 0 15g

FOOT PRINT DIMENSIONS (millimeters)

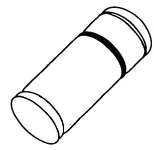


SGS-THOMSON MICROELECTRONICS

TMM821, A → TMM829, A

TEMPERATURE COMPENSATED ZENER DIODES

NEW SERIE



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{leads} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 55 to 175	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} @ max. (Ω)	I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z* max. (mV)	αV_Z (10^{-6}/°C)
TMM821	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	96	100
TMM823	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	48	50
TMM825	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	19	20
TMM827	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	9	10
TMM829	6.2	15	7.5	– 55	0	+ 25	+ 75	+ 100	5	5
TMM821A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	96	100
TMM823A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	48	50
TMM825A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	19	20
TMM827A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	9	10
TMM829A	6.2	10	7.5	– 55	0	+ 25	+ 75	+ 100	5	5

* The voltage reference diodes are characterized by the box methode.The maximum allowable voltage change ΔV_Z is guaranteed any two temperature within the range. Tests are performed at the indicated temperatures and the specified current.

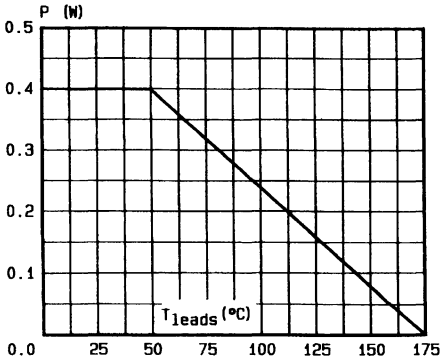


Fig.1 - Power dissipation versus leads temperature.

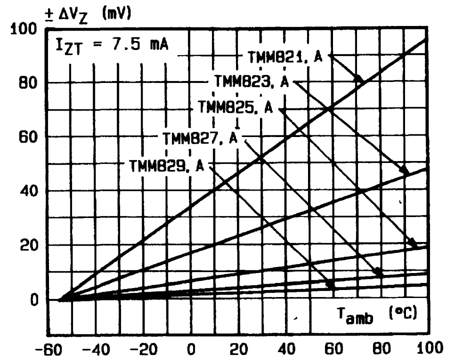
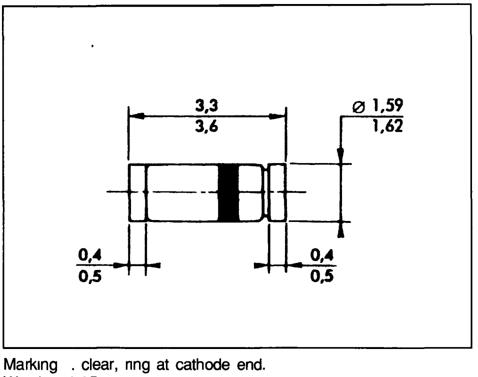


Fig.2 - Regulation voltage variation versus ambient temperature.

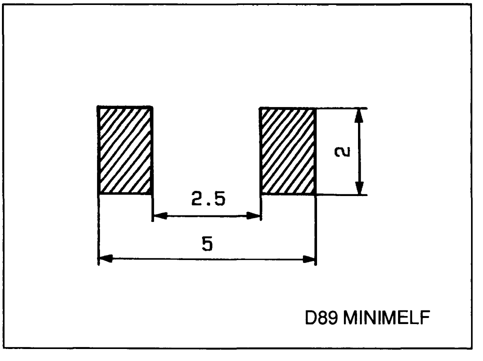
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking . clear, ring at cathode end.
Weight 0.05g

FOOT PRINT DIMENSIONS (Millimeter)

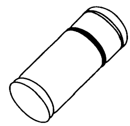


SGS-THOMSON
MICROELECTRONICS

TMM4565, A→TMM4569, A
TMM4575, A→TMM4579, A

TEMPERATURE COMPENSATED ZENER DIODES

NEW SERIE



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{leads} = 50°C	0.4	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 175 – 65 to 175	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT} typ. (V)	R_{ZT} @ max. (Ω)	I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
TMM4565	6.4	200	0.5		0	+ 25	+ 75		48	100
TMM4566	6.4	200	0.5		0	+ 25	+ 75		24	50
TMM4567	6.4	200	0.5		0	+ 25	+ 75		10	20
TMM4568	6.4	200	0.5		0	+ 25	+ 75		5	10
TMM4569	6.4	200	0.5		0	+ 25	+ 75		2	5
TMM4565A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	99	100
TMM4566A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	50	50
TMM4567A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	20	20
TMM4568A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	10	10
TMM4569A	6.4	200	0.5	– 55	0	+ 25	+ 75	+ 100	5	5

* The voltage reference diodes are characterized by the box methode The maximum allo wable voltage change ΔV_Z is guaranteed any two temperature within the range. Tests are performed at the indicated temperatures and the specified current.

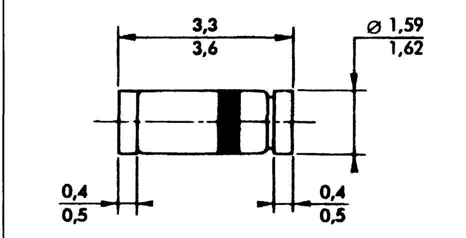
ELECTRICAL CHARACTERISTICS (continued)

Types	V_{ZT} typ. (V)	R_{ZT} max. (Ω)	@ I_{ZT} (mA)	Test Temperatures (°C)					ΔV_Z** max. (mV)	αV_Z (10^{-6}/°C)
TMM4575	8.5	100	1		0	+ 25	+ 75		64	100
TMM4576	8.5	100	1		0	+ 25	+ 75		32	50
TMM4577	8.5	100	1		0	+ 25	+ 75		13	20
TMM4578	8.5	100	1		0	+ 25	+ 75		6	10
TMM4579	8.5	100	1		0	+ 25	+ 75		3	5
TMM4575A	8.5	100	1	− 55	0	+ 25	+ 75	+ 100	132	100
TMM4576A	8.5	100	1	− 55	0	+ 25	+ 75	+ 100	66	50
TMM4577A	8.5	100	1	− 55	0	+ 25	+ 75	+ 100	26	20
TMM4578A	8.5	100	1	− 55	0	+ 25	+ 75	+ 100	13	10
TMM4579A	8.5	100	1	− 55	0	+ 25	+ 75	+ 100	7	5

* The voltage reference diodes are characterized by the box methode. The maximum allo wable voltage change ΔV_Z is guaranteed any two temperature within the range Tests are performed at the indicated temperatures and the specified current

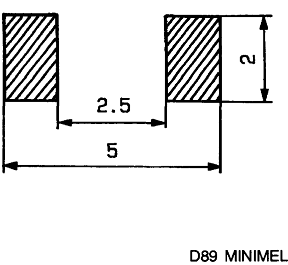
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking : ring at cathode end
Weight 0.05g

FOOT PRINT DIMENSIONS (Millimeter)



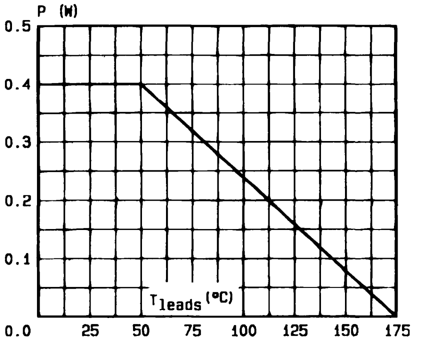


Fig.1 - Power dissipation versus leads temperature.

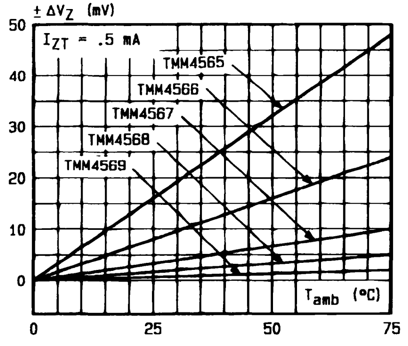


Fig.2a - Regulation voltage variation versus ambient temperature.

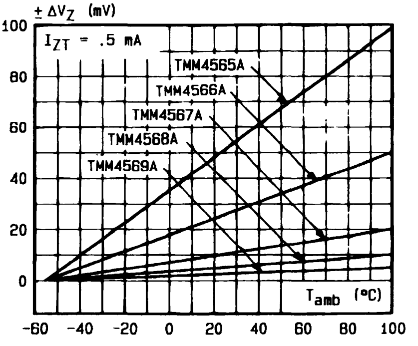


Fig.2b - Regulation voltage variation versus ambient temperature.

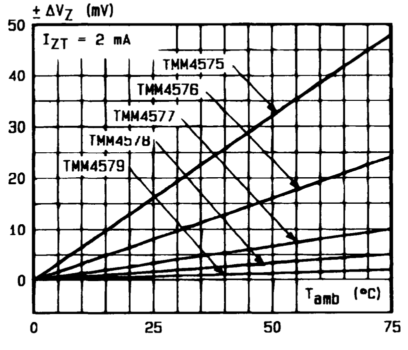


Fig.2c - Regulation voltage variation versus ambient temperature.

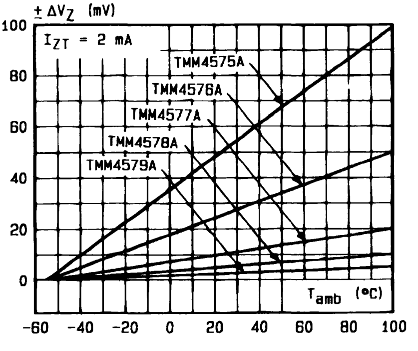
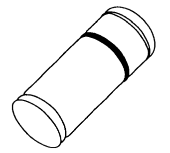


Fig.2d - Regulation voltage variation versus ambient temperature.

SGS-THOMSON MICROELECTRONICS **TMM 4614 → TMM 4627**

ZENER DIODES

- VOLTAGE RANGE : 1.8V TO 6.2V



MINIMELF
(Glass)

DESCRIPTION

Low leakage, low impedance, low noise Zener diodes

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{amb} = 25°C	250	mW
I_{ZM}	Continuous Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	250	°C/W

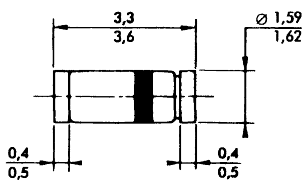
ELECTRICAL CHARACTERISITCS (T_{amb} = 25°C)

Type	V_{ZT}/I_{ZT} (1) nom (V)	I_{ZT} (µA)	r_{ZT}/I_{ZT} (2) (Ω)	I_R (µA)	V_R (V)	Noise Density @ 250µA max (µV/√Hz)	I_{ZM} (mA)
TMM 4614	1 8	250	1200	7.5	1.0	1.0	120
TMM 4615	2 0	250	1250	5 0	1 0	1.0	110
P TMM 4616	2.2	250	1300	4.0	1.0	1.0	100
TMM 4617	2.4	250	1400	2 0	1.0	1 0	95
TMM 4618	2.7	250	1500	1.0	1.0	1.0	90
TMM 4619	3.0	250	1600	0.8	1.0	1.0	85
P TMM 4620	3.3	250	1650	7.5	1.5	1.0	80
P TMM 4621	3.6	250	1700	7 5	2 0	1.0	75
P TMM 4622	3.9	250	1650	5.0	2 0	1.0	70
P TMM 4623	4.3	250	1600	4.0	2.0	1.0	65
P TMM 4624	4.7	250	1550	10	3.0	1.0	60
P TMM 4625	5.1	250	1500	10	3.0	2.0	55
TMM 4626	5.6	250	1400	10	4 0	4.0	50
TMM 4627	6.2	250	1200	10	5 0	5.0	45

(1) Tolerance on nominal V_{ZT} value ± 5%
(2) Measured @ DC test current with 10% AC superimposed (50Hz)
P Preferred voltages
Forward voltage drop $V_F \leq 1V$ (T_{amb} = 25°C, I_F = 200mA)

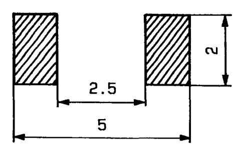
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end
Weight 0 05g

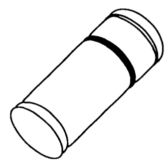
FOOT PRINT DIMENSIONS (millimeters)



D89 MINIMELF

ZENER DIODES

- VOLTAGE RANGE : 2.4V TO 100V



MINIMELF
(Glass)

DESCRIPTION

500mW hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation	T_{lead} = 75°C	0.5	mW
I_{ZM}	Continuous Reverse Current	T_{lead} = 75°C	See page 2	mA
I_{ZSM}	Peak Reverse Current	T_{amb} = 25°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200 – 55 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction–leads	250	°C/W

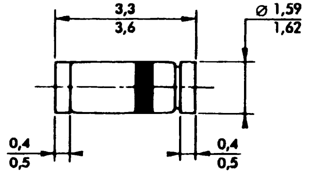
ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* nom (V)	r_{ZT}/I_{ZT}* max (Ω)	I_{ZT}* (mA)	r_{ZK}/I_{ZK} max (Ω)	(mA)	αV_Z max (10^{-4}/°C)	I_R/V_R max (µA)	V_R (V)	I_{ZM} T_{amb} 75°C (mA)	I_{ZSM}** max (mA)
TMM 5221 B	2.4	30	20	1200	0.25	− 8.5	100	1.0	191	1984
TMM 5222 B	2.5	30	20	1250	0.25	− 8.5	100	1.0	182	1905
TMM 5223 B	2.7	30	20	1300	0.25	− 8.0	75	1.0	168	1764
TMM 5224 B	2.8	30	20	1400	0.25	− 8.0	75	1.0	162	1701
TMM 5225 B	3.0	29	20	1600	0.25	− 7.5	50	1.0	151	1587
P TMM 5226 B	3.3	28	20	1600	0.25	− 7.0	25	1.0	138	1443
P TMM 5227 B	3.6	24	20	1700	0.25	− 6.5	15	1.0	126	1323
P TMM 5228 B	3.9	23	20	1900	0.25	− 6.0	10	1.0	115	1221
P TMM 5229 B	4.3	22	20	2000	0.25	± 5.5	5	1.0	106	1107
P TMM 5230 B	4.7	19	20	1900	0.25	± 3.0	5	2.0	97	1013
P TMM 5231 B	5.1	17	20	1600	0.25	± 3.0	5	2.0	89	934
P TMM 5232 B	5.6	11	20	1600	0.25	+ 3.8	5	3.0	81	850
TMM 5233 B	6.0	7.0	20	1600	0.25	+ 3.8	5	3.5	76	794
P TMM 5234 B	6.2	7.0	20	1000	0.25	+ 4.5	5	4.0	73	768
P TMM 5235 B	6.8	5.0	20	750	0.25	+ 5.0	3	5.0	67	700
P TMM 5236 B	7.5	6.0	20	500	0.25	+ 5.8	3	6.0	61	635
P TMM 5237 B	8.2	8.0	20	500	0.25	+ 6.2	3	6.5	55	581
TMM 5238 B	8.7	8.0	20	600	0.25	+ 6.5	3	6.5	52	547
P TMM 5239 B	9.1	10	20	600	0.25	+ 6.8	3	7.0	50	523
P TMM 5240 B	10	17	20	600	0.25	+ 7.5	3	8.0	45	476
TMM 5241 B	11	22	20	600	0.25	+ 7.6	2	8.4	41	433
P TMM 5242 B	12	30	20	600	0.25	+ 7.7	1	9.1	38	397
TMM 5243 B	13	13	9.5	600	0.25	+ 7.9	0.5	9.9	35	397
P TMM 5244 B	14	15	9.0	600	0.25	+ 8.2	0.1	10	32	340
P TMM 5245 B	15	16	8.5	600	0.25	+ 8.2	0.1	11	30	317
TMM 5246 B	16	17	7.8	600	0.25	+ 8.3	0.1	12	28	298
TMM 5247 B	17	19	7.4	600	0.25	+ 8.4	0.1	13	27	280
TMM 5248 B	18	21	7.0	600	0.25	+ 8.5	0.1	14	25	265
TMM 5249 B	19	23	6.6	600	0.25	+ 8.6	0.1	14	24	251
TMM 5250 B	20	25	6.2	600	0.25	+ 8.6	0.1	15	23	238
TMM 5251 B	22	29	5.6	600	0.25	+ 8.7	0.1	17	21	216
TMM 5252 B	24	33	5.2	600	0.25	+ 8.8	0.1	18	19.1	198
TMM 5253 B	25	35	5.0	600	0.25	+ 8.9	0.1	19	18.2	190
TMM 5254 B	27	41	4.6	600	0.25	+ 9.0	0.1	21	16.8	176
TMM 5255 B	28	44	4.5	600	0.25	+ 9.1	0.1	21	16.2	170
TMM 5256 B	30	49	4.2	600	0.25	+ 9.1	0.1	23	15.1	159
TMM 5257 B	33	58	3.8	700	0.25	+ 9.2	0.1	25	13.8	144
TMM 5258 B	36	70	3.4	700	0.25	+ 9.3	0.1	27	12.6	132
TMM 5259 B	39	80	3.2	800	0.25	+ 9.4	0.1	30	11.5	122
TMM 5260 B	43	93	3.0	900	0.25	+ 9.5	0.1	33	10.6	111
TMM 5261 B	47	105	2.7	1000	0.25	+ 9.5	0.1	36	9.7	101
TMM 5262 B	51	125	2.5	1100	0.25	+ 9.6	0.1	39	8.9	93
TMM 5263 B	56	150	2.2	1300	0.25	+ 9.6	0.1	43	8.1	85
TMM 5264 B	60	170	2.1	1400	0.25	+ 9.7	0.1	46	7.6	79
TMM 5265 B	62	185	2.0	1400	0.25	+ 9.7	0.1	47	7.3	77
TMM 5266 B	68	230	1.8	1600	0.25	+ 9.7	0.1	52	6.7	70
TMM 5267 B	75	270	1.7	1700	0.25	+ 9.8	0.1	56	6.1	63
TMM 5268 B	82	330	1.5	2000	0.25	+ 9.8	0.1	62	5.5	58
TMM 5269 B	87	370	1.4	2200	0.25	+ 9.9	0.1	68	5.2	55
TMM 5270 B	91	400	1.4	2300	0.25	+ 9.9	0.1	69	5.0	52
TMM 5271 B	100	500	1.3	2600	0.25	+ 11.0	0.1	76	4.5	48

* Measure under thermal equilibrium and DC test conditions (T_{amb} = 25°C)
* * Rectangular waveform (t_p = 10ms)
Tolerance on nominal V_{ZT} value . ± 5%
Voltage > 100V on request
P . Preferred voltages.
Tight tolerance on preferred voltages ± 3% – ± 2%
Forward voltage drop . $V_F \leq 1.1$V (T_{amb} = 25°C, I_F = 200mA)

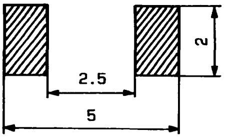
PACKAGE MECHANICAL DATA

MINIMELF (Glass)



Marking : ring at cathode end.
Weight . 0 05g

FOOT PRINT DIMENSIONS (millimeters)



D89 MINIMELF

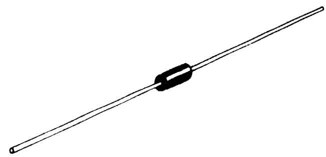
SGS-THOMSON MICROELECTRONICS

ZPY 3V9 → ZPY 100

ZENER DIODES

NEW SERIE

- VOLTAGE RANGE : 3.9V TO 100V



DO 41
(Glass)

DESCRIPTION

1.3W hermetically sealed glass silicon Zener diodes.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
P_{tot}	Power Dissipation*	T_{amb} = 55°C	1.3	W
I_{ZM}	Continuous Reverse Current	T_{amb} = 55°C	See page 2	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction–ambient*	110	°C/W

* On infinite heatsink with 4mm lead length.

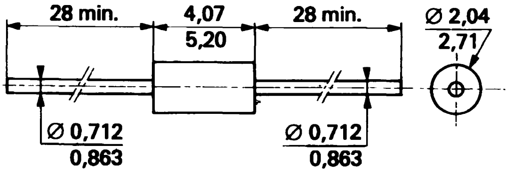
ELECTRICAL CHARACTERISITCS (T_{amb} = 25°C unless otherwise specified)

Types	V_{ZT}/I_{ZT}* min (V)	V_{ZT}/I_{ZT}* max (V)	r_{ZT}/I_{ZT} max (Ω)	I_{ZT} (mA)	$\propto V_Z$ min (10^{-4}/°C)	$\propto V_Z$ max (10^{-4}/°C)	V_R I_R = 0.5μA min (V)	I_{ZM} T_{amb} 55°C (mA)
P ZPY3V9	3.7	4.1	7	100	− 7	2	–	290
P ZPY4V3	4.0	4.6	7	100	− 7	3	–	260
P ZPY4V7	4.4	5.0	7	100	− 7	4	–	235
P ZPY5V1	4.8	5.4	5	100	− 6	5	0.7	215
P ZPY5V6	5.2	6.0	2	100	− 3	5	1.5	193
P ZPY6V2	5.8	6.6	2	100	− 1	6	2.0	183
ZPY6V8	6.4	7.2	2	100	0	7	3.0	157
P ZPY7V5	7.0	7.9	2	100	0	7	5.0	143
P ZPY8V2	7.7	8.7	2	100	3	8	6.0	127
P ZPY9V1	8.5	9.6	4	50	3	8	7.0	117
P ZPY10	9.4	10.6	4	50	5	9	7.5	105
ZPY11	10.4	11.6	7	50	5	10	8.5	94
P ZPY12	11.4	12.7	7	50	5	10	9.0	85
ZPY13	12.4	14.1	9	50	5	10	10	78
P ZPY15	13.8	15.8	9	50	5	10	11	70
ZPY16	15.3	17.1	10	25	7	11	12	63
ZPY18	16.8	19.1	11	25	7	11	14	57
ZPY20	18.8	21.2	12	25	7	11	15	52
P ZPY22	20.8	23.3	13	25	7	11	17	48
P ZPY24	22.8	25.6	14	25	7	12	18	42
P ZPY27	25.1	28.9	15	25	7	12	20	38
ZPY30	28	32	20	25	7	12	22.5	35
P ZPY33	31	35	20	25	7	12	25	31
P ZPY36	34	38	60	10	7	12	27	29
ZPY39	37	41	60	10	8	12	29	26
ZPY43	40	46	80	10	8	13	32	24
ZPY47	44	50	80	10	8	13	35	22
ZPY51	48	54	100	10	8	13	38	20
ZPY56	52	60	100	10	8	13	42	18
ZPY62	58	66	130	10	8	13	47	16
ZPY68	64	72	130	10	8	13	51	14
ZPY75	70	79	160	10	8	13	56	13
ZPY82	77	88	160	10	8	13	61	12
ZPY91	85	96	250	5	9	13	68	11
ZPY100	94	106	250	5	9	13	75	10

* Pulse test 20ms ≤ t_p ≤ 50ms δ<2%
The regulation voltages are defined according to the E24 series
P · Preferred Voltage

PACKAGE MECHANICAL DATA

DO 41 (Glass)



Cooling method : by convection and conduction.
Marking · clear, ring at cathode end.
Weight : 0 34g

SCHOTTKY DIODES

FORWARD

Basically, the Schottky diode consists of a metal to silicon junction.

The main features of this device are:
— low turn-on voltage, resulting from the low barrier height of the metal silicon contact,
— negligible reverse recovery time due to majority carrier conduction,
— low reverse capacitance.

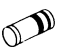
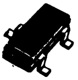
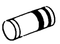
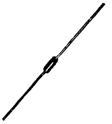
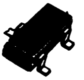
The performance improvement compared to that of conventional P/N junction diodes has long been recognized. However, up until now, price has been the limiting factor, restricting applications to professional equipment.

High volume production of devices encapsulated in the rugged double stud DO 35 and DO 41 glass cases, allows SGS-THOMSON offer a low cost, high reliability, machine insertable product suitable for high volume applications.

Most of the devices are also available in SOT 23 plastic micropackage for surface mounting.

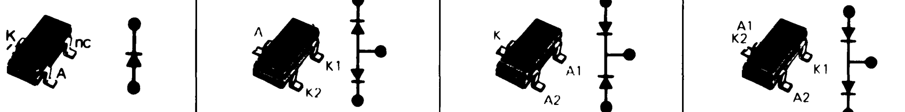
Application areas cover telecommunications, computers, automotive, instrumentation and consumer oriented fields, market areas in which SGS-THOMSON is at the forefront of technology.

RF AND ULTRAFAST SWITCHING

V_{RRM} (V)	I_F, continuous forward current						V_F max (V)	@ I_F (mA)	C max (pF)	@ V_R (V)
	15 mA			30 mA						
	 DO 35 Glass	 MINIMELF Glass	 SOT 23 Plastic	 DO 35 Glass	 MINIMELF Glass	 SOT 23 Plastic				
4				BAR 19		BAT 17(1) BAT 17 DS(4)	0.6	10	1	1
5				BAT 29	TMM BAT 29	BAR 29(1)	0.55	10	1	0
10				BAT 29	TMM BAT 19		0.4	1	1.2	0
15				BAT 45	TMM BAT 45		0.5	10	1.1	1
20	BAR 11*	TMM BAR 11*		BAR 10** 1N 5712**	TMM BAR 10** TMM 5712**		0.41	1	1.2	0
60	1N 6263	TMM 6263					0.41	1	2.2	0
70	BAR 28 1N 5711	TMM BAR 28 TMM 5711	BAR 18(1) BAS 70-04(4) BAS 70-05(3) BAS 70-06(2)				0.41	1	2	0

$T_{amb} = 25°C$
* $I_F = 20$ mA
** $I_F = 35$ mA

SOT 23 Configurations



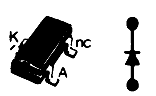
(1) (2) (3) (4)

GENERAL PURPOSE ≤ 0.5 AMP.

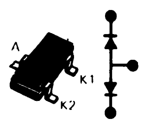
V_{RRM} (V)	I_F, continuous forward current						V_F max (V)	@ I_F (mA)
	100 mA*				200 mA**			
	DO 35 Glass	DO 41 Glass	MINIMELF Glass	SOT 23 Plastic	DO 35 Glass	MINIMELF Glass		
20					BAT 47**	TMM BAT 47**	0.40	10
30				BAR 42(1) BAR 43(1) BAR 43A(2) BAR 43C(3) BAR 43S(4)	BAT 42 BAT 43	TMM BAT 42 TMM BAT 43	0.40 0.45 0.33 0.33 0.33	10 15 2 2 2
40					BAT 48**	TMM BAT 48**	0.40	10
80		BAT 49					0.42	100
100	BAT 41 BAT 46*		TMM BAT 41 TMM BAT 46*				0.45 0.45	1 10

T_{amb} = 25°C, * I_F = 150 mA, ** I_F = 350 mA

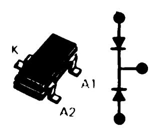
SOT 23 Configurations



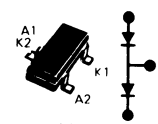
(1)



(2)



(3)



(4)

GENERAL PURPOSE > 0.5 AMP.

V_{RRM} (V)	$I_{F(AV)}$, average forward current I_F*, continuous forward current				Low current V_F		High current V_F	
	0.5 A		1 A					
	DO 41 Glass	MELF Glass	DO 41 Glass	MELF Glass	V_F max (V)	@ I_F (A)	V_F max (V)	@ I_F (A)
20			BYV 10-20 BYV 10-20A	TM BYV 10-20 TM BYV 10-20A	0.55 0.45	1 1	0.85 0.75	3 3
30			BYV 10-30	TM BYV 10-30	0.55	1	0.85	3
40			BYV 10-40	TM BYV 10-40	0.55	1	0.85	3
60			BYV 10-60	TM BYV 10-60	0.70	1	1	3
80	BAT 49*	TM BAT 49*			0.32	0.01	0.42	0.1

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON NEAREST EQUIVALENT
1N 5711	1N 5711	
1N 5712	1N 5712	
1N 5713	BAR11	
1N 5165		BAR 10/BAT 19
1N 5166		BAR 10/BAT 19
1N 5167		BAR 10/BAT 19
1N 5817	BYV 10-20 A	
1N 5818	BYV 10-30	
1N 5819	BYV 10-40	
1N 5390	BAT 29	
1N 6263	1N 6263	
1S 1549	BAR 19	
1S 2187	under development	
1S 2791	under development	
1SS 16	under development	
1SS 43	BAT 19	
1SS 97	BAT 29 G	
1SS 99	under development	
11 DQ 03	BYV 10-30	
11 DQ 04	BYV 10-40	BYV 10-60
11 DQ 05		BYV 10-60
11 DQ 06		
		BAR 10/BAT 19
5082-2301		BAR 10/BAT 19
5082-2302		BAR 10/BAT 19
5082-2303		BAR 10/BAT 19
5082-2305		
5082-2800	BAR 28	
5082-2810	BAR 10	
5082-2811	BAR 11	
5082-2900	BAT 19	
BA 280	BAR 19	
BA 480	under development	
BAS 40.02		BAR 28/BAT 42
BAS 40.03		BAR 28/BAT 42
BAS 70.02	BAR 28	
BAS 70.03	BAR 28	
BAT 54	BAR 43/43	
BAT 74		BAR 43A,45
BAT 81		1N 6263
BAT 82		1N 6263
BAT 83		1N 6263
BAT 85		BAT 42
BYS 21	BYV 10-40	
FH 1100	BAT 29	
ITS 5817	BYV 10-20A	
ITS 5818	BYV 10-30	
ITS 5819	BYV 10-40	
HSCH 1000	1N 6263	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON NEAREST EQUIVALENT
LL 101 A		TMM 62/63
LL 103 A,P,C		TMM BAT47/48
LL 104 A,C,E		TMM BAT19
LL 104 B,D,F		TMM BAT29
MA4E-2301		BAR 10/BAT19
MA4E-2302		BAR 10/BAT 19
MA4E-2303		BAR 10/BAT 19
MA4E-2305		BAR 10/BAT 19
MA4E-2800	BAR 28	
MA4E-2810	BAR 10	
MA4E-2811	BAR 11	
MA4E-2812		BAR 10
MBD 101		BAT 29/BAR 19
MBD 102		BAT 29/BAR 19
MBD 201		1N 6263/BAT 42
MBD 301		1N 6263/BAT 42
MBD 501		1N 6263
MBD 502		1N 6263
MBD 701		BAR 28
MBD 702		BAR 28
MBR 020	BYV 10-20	
MBR 120 P	BYV 10-20	
MBR 130 P	BYV 10-30	
MBR 140 P	BYV 10-40	
ND 4972-7 E	BAR 11	
ND 4972-7 E	BAR 10	
ND 4974-7 E	BAR 28	
SB 120		BYV 10-20
SB 130		BYV 10-30
SB 140		BYV 10-40
SB 150		BYV 10-60
SB 160		BYV 10-60
SB 180		under development
SD 101 A	1N 6263	
SD 101 B		1N 6263
SD 101 C		1N 6263
SD 102 A		BAT 42/BAT 48
SD 102 B		BAT 42/BAT 48
SD 102 C		BAT 42/BAT 48
SD 103 A		BAT 48
SD 103 B		BAT 48
SD 103 C		BAT 48
SSH 1A 020		BYV 10-20
SSH 1A 040		BYV 10-40
SSH 1A 060		BYV 10-60
SSH 1A 080		under development
VSK 120	BYV 10-20	
VSK 130	BYV 10-30	
VSK 140	BYV 10-40	

1 - THEORY

The Schottky diode uses the potential barrier resulting from a metal to semiconductor contact.

Schematically it consists of a metal layer deposited on an epitaxial N layer grown on a low resistivity N^+ substrate.

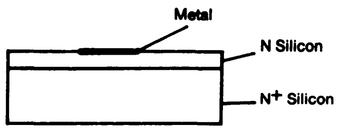


Fig. 1 - Schematic structure of a Schottky diode.

Current flowing through the diode may be expressed as follows:

$$I = I_S \left(e^{\frac{qV}{kT}} - 1\right)$$

as in a conventional P/N junction. But the saturation current based on thermoionic emission is about 10^6 times higher, providing low turn-on voltage with however a higher reverse current than that of a P/N junction.

Due to conduction by majority carriers whose life duration is very short, the reverse recovery time of a Schottky diode is negligible.

CALCULATION OF THE CURRENT VERSUS VOLTAGE CHARACTERISTIC

Let:
- R = $120 A/cm^2 (°K)^2$ Richardson constant
- T = absolute temperature in °K
- K = 1.37×10^{-23} J/°K Boltzmann constant
- q = 1.6×10^{-19} C electron charge
- V_B = barrier height in V
- J = current density in the junction in A/cm^2
- J_S = saturation current density
- I_F = direct current
- I_R = reverse current
- ϵ = 10^{-12} F/cm dielectric constant of silicon
- N = concentration of impurities in silicon in at/cm^3
- D = diameter of the junction

FORWARD CHARACTERISTIC

The current density can be expressed as:

$$J = J_S \left(e^{\frac{qV}{kT}} - 1\right) \quad (1)$$

$$J_S = RT^2 e^{-\frac{qV_B}{kT}}$$

and: $$V_F = V_B + \frac{kT}{q} \mathrm{Log} \frac{4 \times I_F}{\pi D^2 R T^2}$$

$$V_F = V_B + \frac{kT}{q} \left[\mathrm{Log} \frac{4}{\pi D^2 R T^2} + \mathrm{Log}\, I_F \right]$$

The barrier height V_B is dependent on the material used and the physical quality of the metal to silicon interface.

REVERSE CHARACTERISTIC

Equation (1) also holds good, but the applied reverse voltage results in an increase in the electrical field at the metal-silicon interface and lowers the potential barrier V_B:

$$\Delta V_B = \sqrt{\frac{qE}{4\pi\varepsilon}} = \sqrt{\frac{q}{4\pi\varepsilon}} \sqrt[4]{\frac{2qN}{\varepsilon}} \sqrt[4]{V_R}$$

According to (1), the saturation current density can be expressed as:

$$J'_S = RT^2C - \frac{4 (V_B + \Delta V_B)}{RT}$$

and: $$J_R = J'_S \left(e^{\frac{qV_R}{kT}} - 1\right)$$

For reverse voltages higher than several tenths of a volt:

$$J_R \# J'_S$$

APPLICATION TO BYV 10

This diode is a 1A rectifier whose physical characteristics are:

Anode dia: 680 µm

N silicon resistivity: 1Ωcm

Concentration: 5×10^{15} at/cm^3

The process used leads to a barrier height of about 0.64V. Hence:

V_F (volt) = $0.64 - 0.272 + 25.7 \times 10^{-3}$ Log I (amp)

The measured values practically coincide with the calculated values up to 10mA (Fig. 2). From 100mA onwards, the graph plotted from the measured values drops as a result of the voltage drop in the epitaxial zone which has been neglected.

As: $I_R \text{ (amp)} = 3.92\text{x}10^4 \; e^{\frac{V_B}{0.0257}} \; e^{\frac{\Delta V_B}{0.0257}}$

with: $\Delta V_B = 2.26\text{x}10^{-2} \; \sqrt[4]{V_R}$

The measured values of I_R are included between the values calculated for V_B = 0.64V and V_B = 0.65V, which means that they correspond very well with the calculated values (Fig. 3).

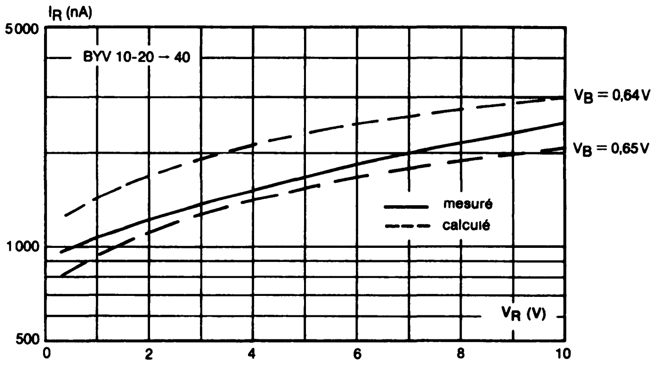


Fig.2 - Caractéristique inverse.

Fig. 2 - Reverse characteristic.

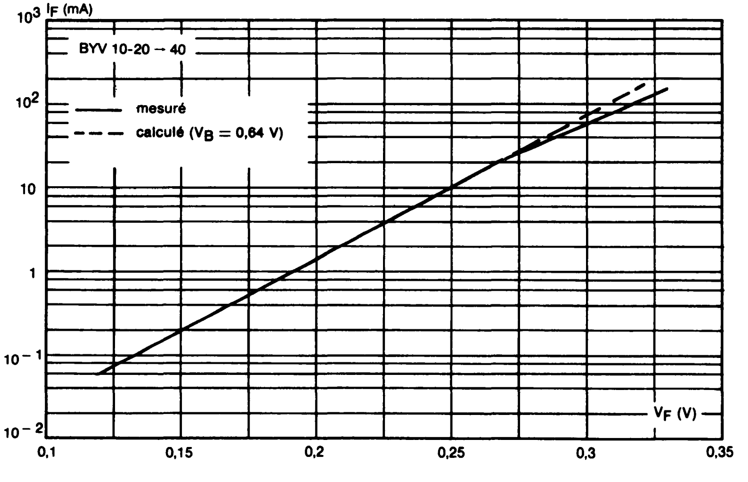


Fig. 3 - Direct characteristic.

2 - DESCRIPTION AND ELECTRICAL CHARACTERISTICS

STRUCTURE

The actual structure used for the SGS-THOMSON Schottky diodes is shown in Fig. 4.

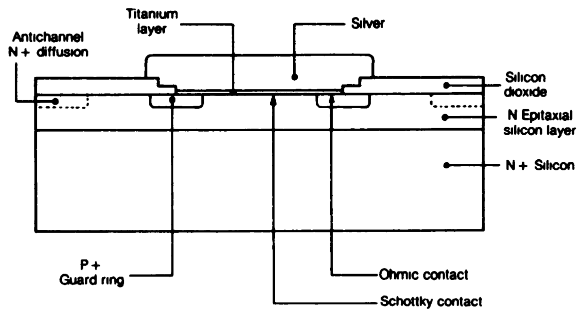


Fig. 4 - Cross view of a Schottky diode with integrated guard ring.

It consists of a metal layer on an N silicon epitaxial layor which has been grown on a low resistivity N^+ substrate.

Around the metal to silicon junction is implanted (or diffused) a P zone in the form of a ring which enables reducing the electrical field concentration.

As a result the breakdown voltage has been increased and the leakage current reduced.

Electrically, this "guard ring" acts as a P/N junction in parallel with the Schottky junction.

It serves as a voltage limiter in forward bias as well as in reverse bias. The equivalent electrical diagram of the device is shown in Fig. 5.

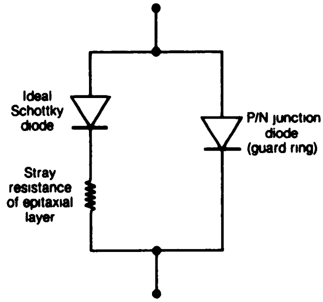


Fig. 5 - Equivalent electrical diagram of a Schottky diode with integrated guard ring.

OPERATING

At low forward voltage, only the Schottky junction conducts and current flows due only to majority carriers. The characteristic follows the theorètical law calculated above (Fig. 6).

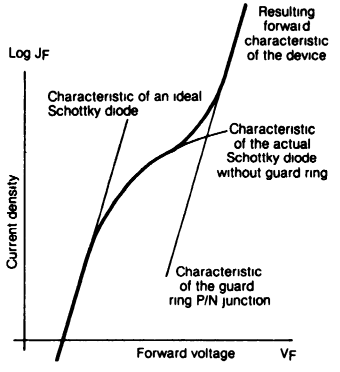


Fig. 6 - Forward characteristic of a Schottky diode whit integrated guard ring.

Since the majority carrier file time is theoretically null, the stored charge can be neglected and the reverse recovery time is very short in so far as the reverse capacitance of the junction is low.

When V_F increases, the characteristic gradually drops as a result of strav resistances.From about 0.6 V the P/N junction turns on and limits the voltage across the Schottky junction, thus preventing a possible overload of the latter. Since conduction is then ensured by minority carriers, the reverse recovery time increases and the characteristics become similar to those of a conventional diode.

In normal operation, the device is not generally used in this zone which is normally reached only in overload condition.

When an increasing reverse voltage is applied to the diode, the P/N junction enters into avalanche before the Schottky junction, which protects the latter in case of voltage surge during reverse bias.

STATIC CHARACTERISTIC

The static forward and reverse characteristics of a Schottky diode and a conventional P/N junction diode are compared in Fig. 7 and 8.

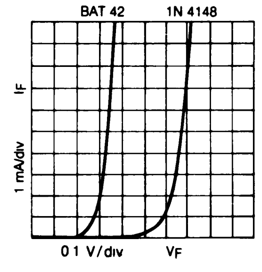


Fig. 7 - Forward characteristic

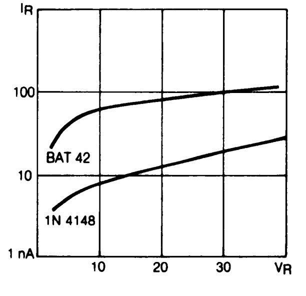


Fig. 8 - Reverse characteristic

The forward voltage drop of the Schottky diode is about half that of the P/N diode.

The reverse current, some what higher, nevertheless remains low enough for all pratical applications.

DYNAMIC CHARACTERISTIC

The switching characteristics of an RF Schottky diode and a fast switching P/N diode are compared in Fig. 9.

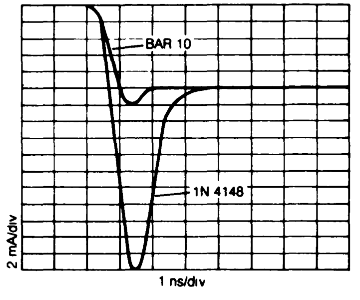


Fig. 9a - Switching characteristic for IF= 10 mA - VR= 6 V.

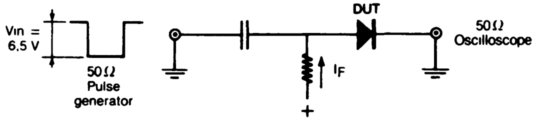


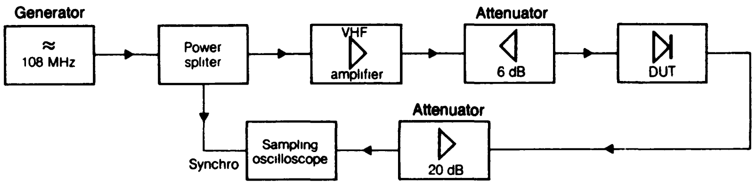
Fig. 9b - Test circuit.

The slight reverse current peak which occurs in the Schottky diode after application of the reverse voltage is not due to draining of the stored charge. It corresponds to the reverse bias charging current of the capacitance.

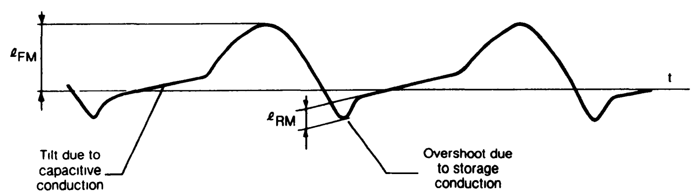
For high frequency applications this capacitance should be reduced to a minimum. For this purpose SGS-THOMSON has developed a structure whithout guard ring which features a particularly favourable forward conductance/reverse capacitançe ratio while simultaneaously providing optimal reliability.

To ensure that there is no residual stored charge due to possible technological imperfections, the Krakauer method is used.

This method enables convenient evaluation of life times in the sub-nanosecond range, disregarding the capacitances effects of the junction. The test procedure is described in French standard 96-931 paragraph P 1457. The essential of this paragraph is resumed in Fig. 10. An IEC document is being discussed.



Test set-up.



Resulting oscilloscope display.

$$\tau = \frac{1}{2\,nF}\,\frac{e_{RM}}{e_{FM}}\left(1 - \frac{V\varphi}{V_M}\right)$$

f = measurement frequency
e_{RM} = peak overshoot voltage
e_{FM} = peak forward voltage
$V\varphi$ = turn-on voltage of the diode
V_M = peak value of sinusoidal voltage across the diode

Fig. 10 - Minority carrier lifetime measurement (Krakauer method).

All the SGS-THOMSON Schottky diodes for RF applications and ultra fast switching are evaluated and specified according to this method. They feature life times lower than 100 ps.

The reverse recovery time of general purpose diodes is not generally specified since the stored charge is practically null over the whole useful current range. A convenient analysis of the behaviour of the diode in the circuit can be performed assuming that we are dealing with an ideal diode in parallel with a capacitance which varies with the voltage and is equal to the junction capacitance. The value of the latter is given in the data sheets.

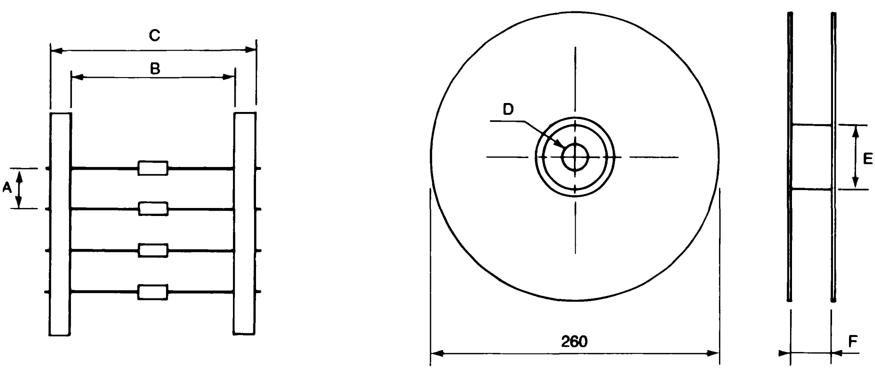
Leade	Packing	Buffix following standard part number	Quantity per rac. or box	
			DO 35	DO 41
53 mm exlal	reel	No (standard execution)	4000	3000
26 mm axial	Ammopack box	— B2	4000	3000
Radial Euroform	reel	— AR 2 (cathode up) — AR 1 (cathode down)	4000	Not available
	Ammopack box	— AZ 2 (cathode up) — AZ 1 (cathode down)	3000	Not available

Ordering information, example: 1N 6263 - AR 1
Radial tape and feel packaged 1N 6263 diode, cathode down.

AXIAL TAPING

Case	Suffixes	Component spacing	Tape spacing		Reel dimensions		
		A	B	C	D	E	F
DO35	–	5 ± 0.5	53 ± 2	65 ± 2	20	40	70
DO35	B2	5 ± 0.5	26 ± 2	65 ± 2	20	40	70
DO41	–	± 0.5	53 ± 2	65 ± 2	20	40	70

Note: Sizes are given in millimeters

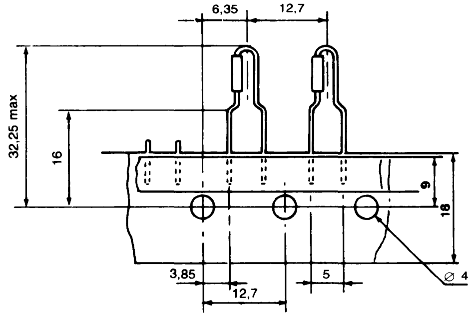


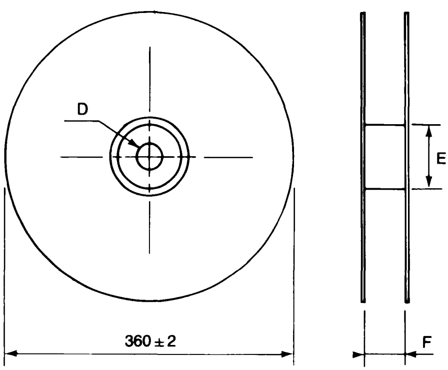
Note: All polarized components must be oriented in one direction
The cathode lead tape shall be red, and the anode tape shall be white

RADIAL TAPING

Case	Suffixes	Reel dimensions		
		D	E	F
DO35	ARX and AZX	30	80	40

Note: Sizes are given in millimeters

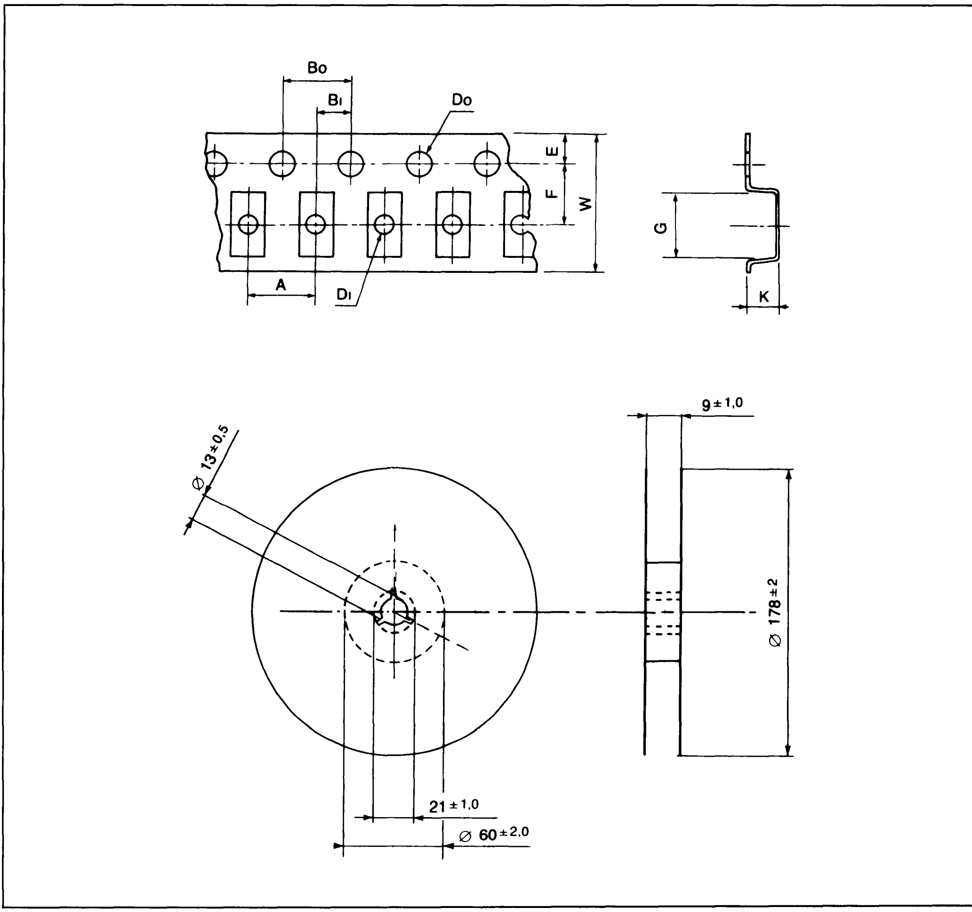




SURFACE MOUNT

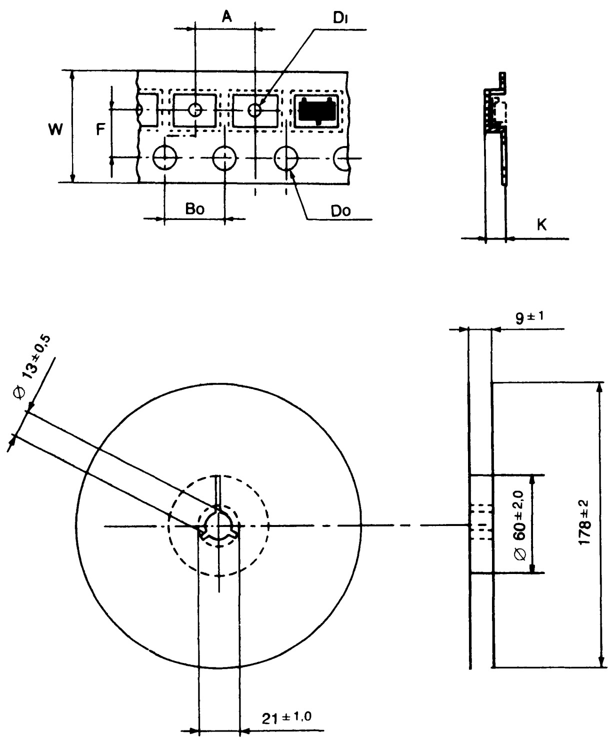
	Component Spacing	Holes Spacing		Holes Diameter		Holes Position		Compartment dimension	Compartment depth	Tape width
	A	Bo	Bi	Do	Di	E	F	G	K	W
Minimelf	4 ± 0,1	4 ± 0,1	2 ± 0,1	1,5	1	1,75	3,5	3,8	2,05	8
Melf	4 ± 0,1	4 ± 0,1	2 ± 0,1	1,5	1,5	1,75	5,5	5,3	2,9	12
SOT23	4 ± 0,1	4 ± 0,1		1,5	1		3,5		1,55	8

MINIMELF AND MELF:



All Polarised Components have Cathode lead oriented towards the perfored side of the film.

SOT 23



SCHOTTKY DIODES DATASHEETS

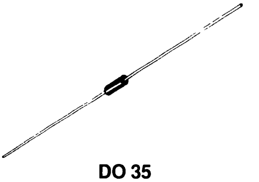
SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high break-down, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

Matched batches are available on request.



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		70	V
I_F	Forward Continuous Current*	$T_a = 25°C$	15	mA
P_{tot}	Power Dissipation*	$T_a = 25°C$	430	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	70			V
V_F**	$T_{amb} = 25°C$	$I_F = 1mA$			0.41	V
	$T_{amb} = 25°C$	$I_F = 15mA$			1	
I_R**	$T_{amb} = 25°C$	$V_R = 50V$			0.2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1MHz			2	pF
τ	$T_{amb} = 25°C$	$I_F = 5mA$	Krakauer Method			100	ps

* On infinite heatsink with 4mm lead length

** Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

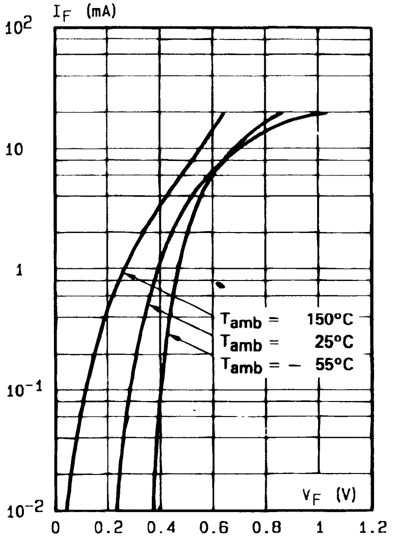


Fig.1 - Forward current versus forward voltage at low level (typical values).

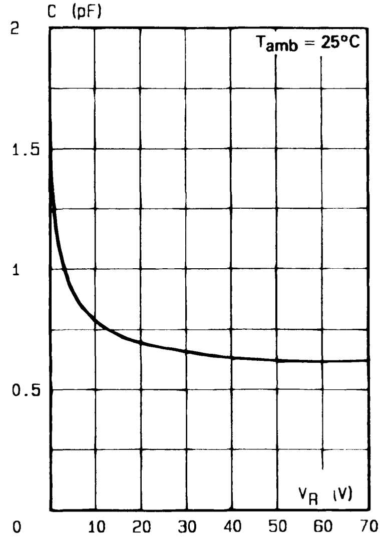


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

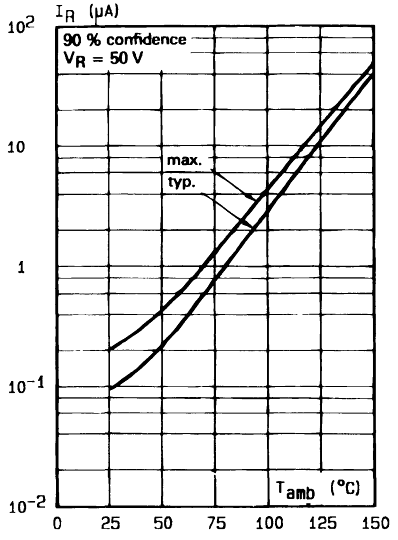


Fig.3 - Reverse current versus ambient temperature.

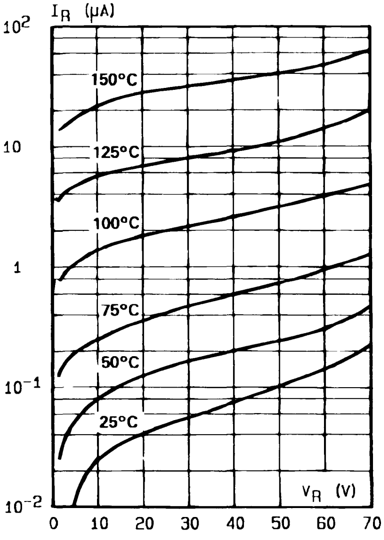
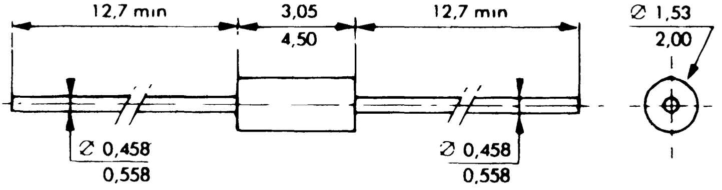


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method . by convection and conduction
Marking . clear, ring at cathode end
Weight · 0.15g

SGS-THOMSON
MICROELECTRONICS

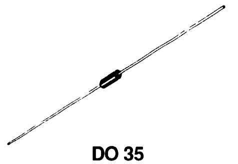
1N 5712

SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high breakdown voltage, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	V
I_F	Forward Continuous Current*	$T_a = 25°C$	35	mA
P_{tot}	Power Dissipation*	$T_a = 25°C$	430	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4 mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	20			V
V_F **	$T_{amb} = 25°C$	$I_F = 1mA$			0.41	V
	$T_{amb} = 25°C$	$I_F = 35mA$			1	
I_R **	$T_{amb} = 25°C$	$V_R = 15V$			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1MHz			1.2	pF
τ	$T_{amb} = 25°C$	$I_F = 5mA$	Krakauer Method			100	ps

* On infinite heatsink with 4mm lead length
* * Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

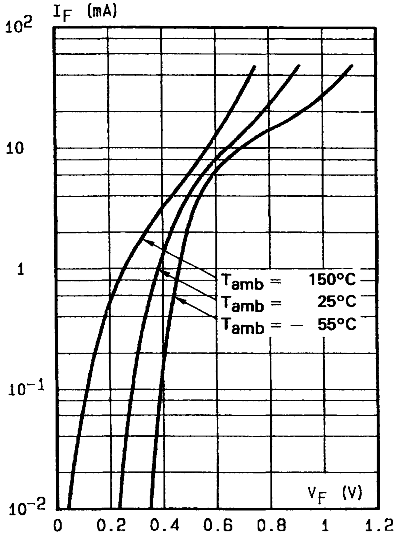


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

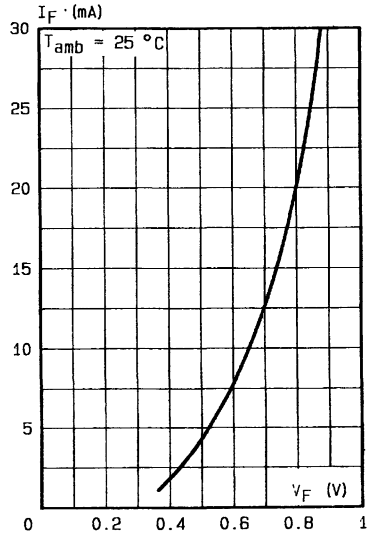


Fig.2 - Forward current versus forward voltage (typical values).

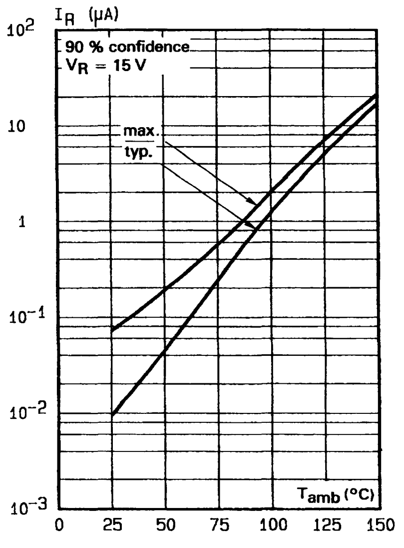


Fig.3 - Reverse current versus ambient temperature.

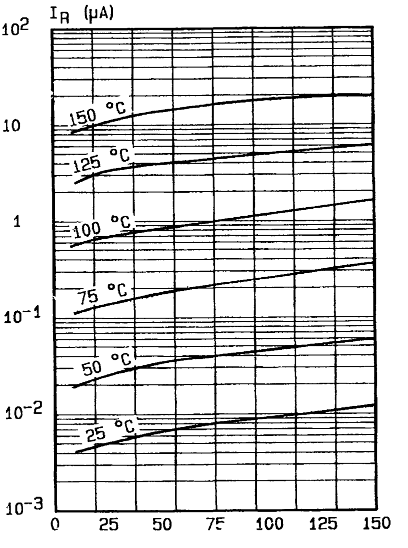


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

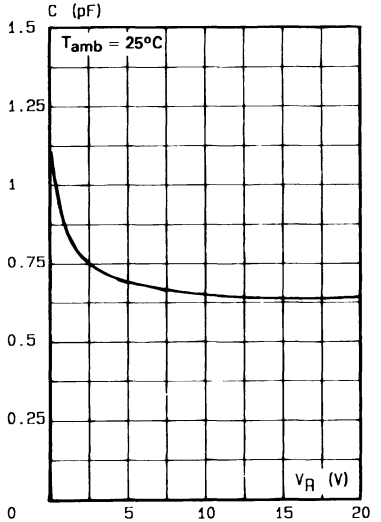
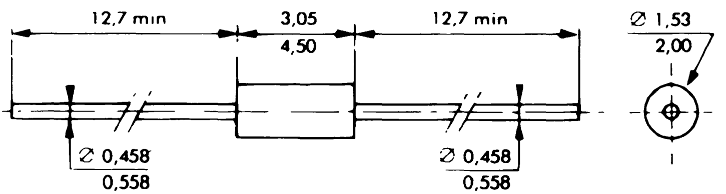


Fig.5 – Capacitance C versus reverse applied voltage V_R (typical values).

PACKAGE MECHANICAL DATA

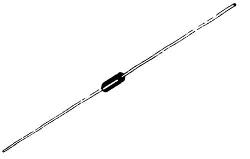
DO 35 Glass



Cooling method · by convection and conduction
Marking clear, ring at cathode end
Weight 0 15g

1N 6263

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		60	V
I_F	Forward Continuous Current*	$T_a = 25°C$	15	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \le 1s$	50	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	60			V
V_F**	$T_{amb} = 25°C$	$I_F = 1mA$			0.41	V
	$T_{amb} = 25°C$	$I_F = 15mA$			1	
I_R**	$T_{amb} = 25°C$	$V_R = 50V$			0.2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1MHz			2 2	pF
τ	$T_{amb} = 25°C$	$I_F = 5mA$	Krakauer Method			100	ps

* On infinite heatsink with 4mm lead length
* * Pulse test $t_p \le 300\mu s$ $\delta < 2\%$
Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

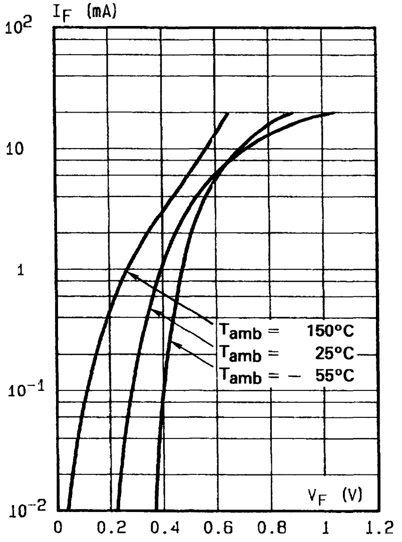


Fig.1 - Forward current versus forward voltage (typical values).

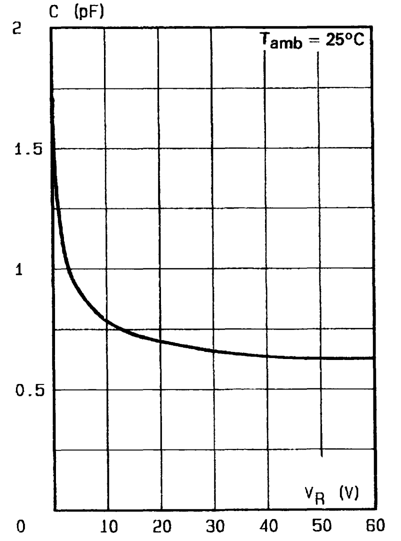


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

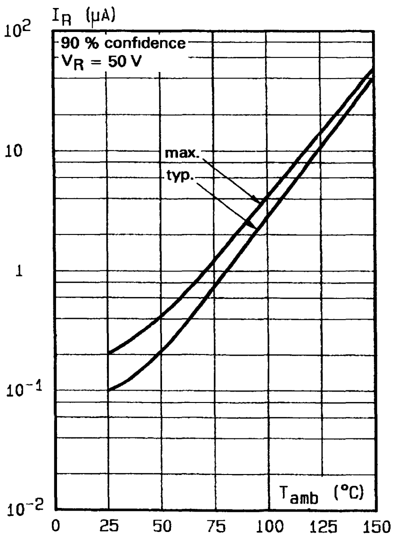


Fig.3 - Reverse current versus ambient temperature.

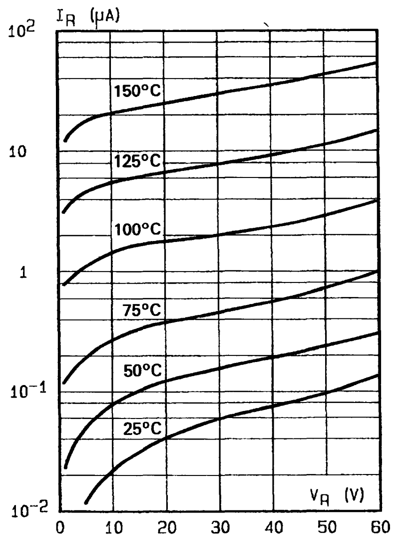
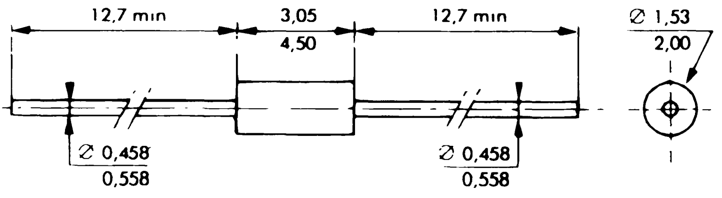


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking · clear, ring at cathode end
Weight 0 15g

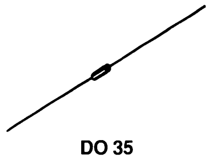
SGS-THOMSON
MICROELECTRONICS

BAR 10
BAR 11

SMALL SIGNAL SCHOTTKY DIODES

DESCRIPTION

Metal to silicon junction diodes featuring high breakdown, low turn-on voltage and ultrafast switching.
Primarly intended for high level UHF/VHF detection and pulse application with broad dynamic range.
Matched batches are available on request, (BAR 11 only).



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		BAR 10	BAR 11	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	15	V
I_F	Forward Continuous Current*	T_a = 25°C	35	20	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq$ 1s	100		mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200		°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230		°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISITCS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	BAR 10	20			V
	T_{amb} = 25°C	I_R = 10µA	BAR 11	15			
V_F **	T_{amb} = 25°C	I_F = 1mA				0.41	V
	T_{amb} = 25°C	I_F = 35mA	BAR 10			1	
	T_{amb} = 25°C	I_F = 20mA	BAR 11			1	
I_R **	T_{amb} = 25°C	V_R = 15V	BAR 10			0.1	µA
	T_{amb} = 25°C	V_R = 8V	BAR 11			0.1	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			1.2	pF
τ	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* On infinite heatsink with 4mm lead length
* * Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

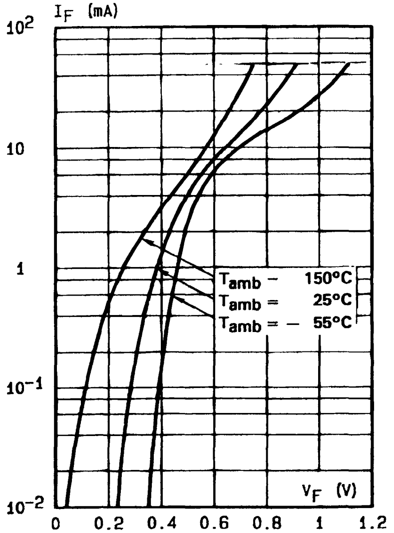


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

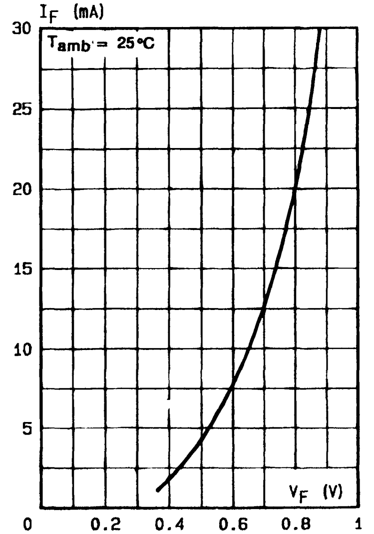
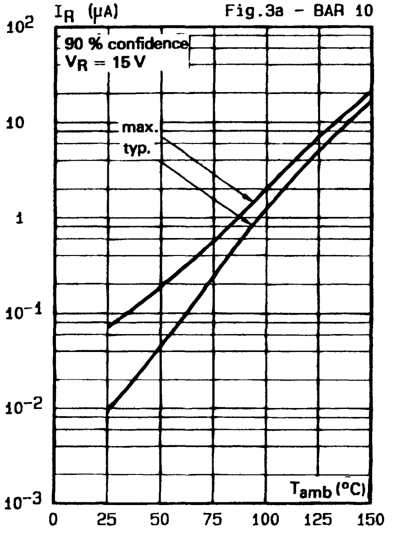


Fig.2 - Forward current versus forward voltage (typical values).



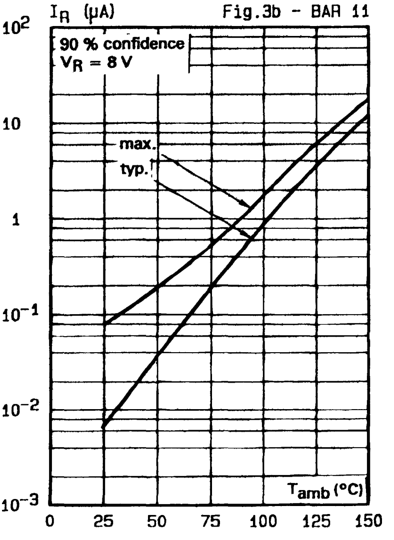


Fig.3a/3b - Reverse current versus ambient temperature.

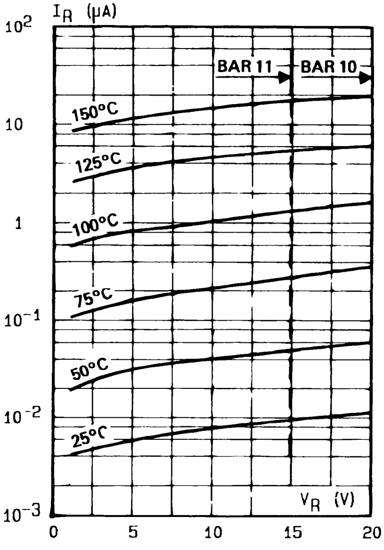


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

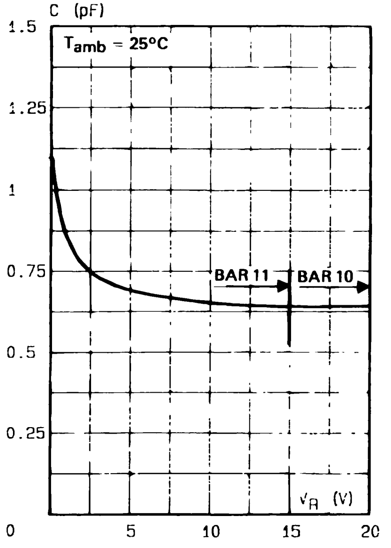
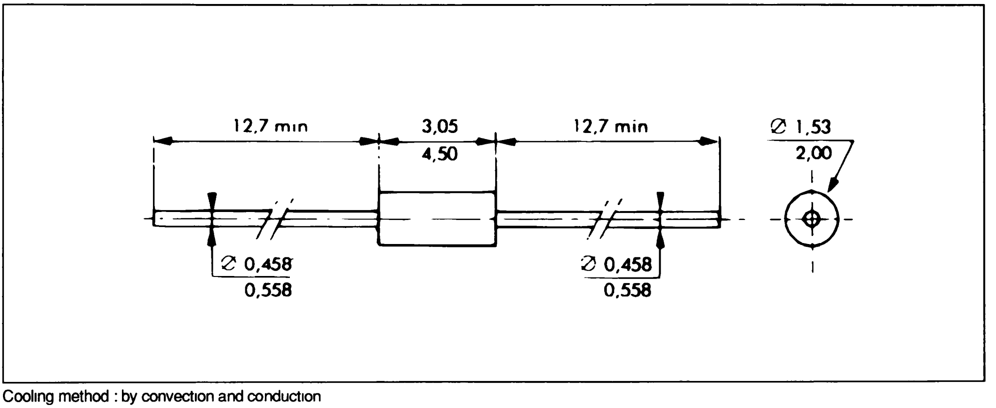


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass

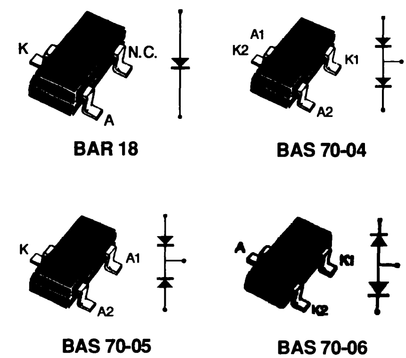


Cooling method : by convection and conduction
Marking · clear, ring at cathode end
Weight 0.15g

SGS-THOMSON
MICROELECTRONICS

BAR 18
BAS 70-04 → 06

SMALL SIGNAL SCHOTTKY DIODES



SOT 23
(Plastic)

DESCRIPTION

Low turn-on and high breakdown voltage diodes intended for ultrafast switching and UHF detectors in hybrid micro circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		70	V
P_{tot}	Power Dissipation*	T_{amb} = 25°C	200	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 150 150	°C °C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	625	°C/W
$R_{th\ (j\text{-}SR)}$	Junction-substrate	400	°C/W

* Mounted on ceramic substrate . 7 x 5 x 0.5mm

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	70			V
V_F	T_{amb} = 25°C	I_F = 1mA			410	mV
I_R	T_{amb} = 25°C	V_R = 50V			200	nA

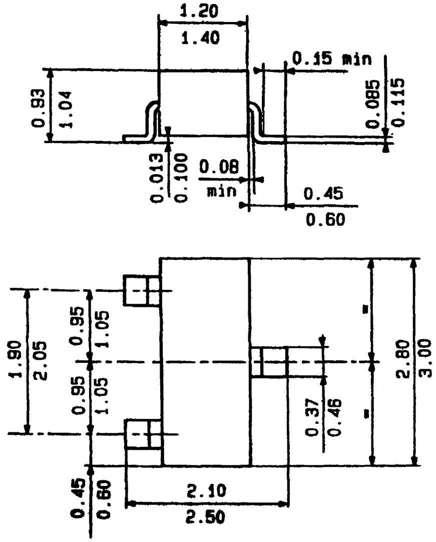
DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0	f = 1MHz			2	pF
τ*	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* Effective carrier life time

PACKAGE MECHANICAL DATA

SOT 23 (Plastic)



Type	BAR 18	BAS 70-04	BAS 70-05	BAS 70-06
Marking	D76	D96	D97	D98

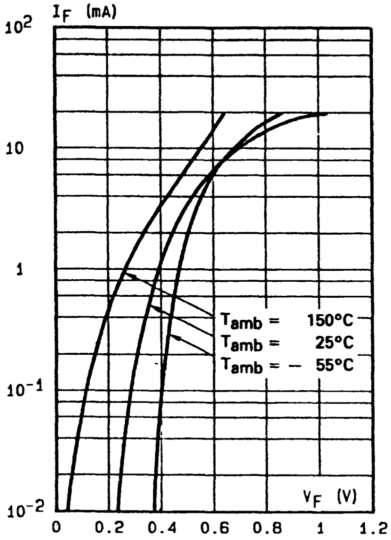


Fig.1 - Forward current versus forward voltage at low level (typical values).

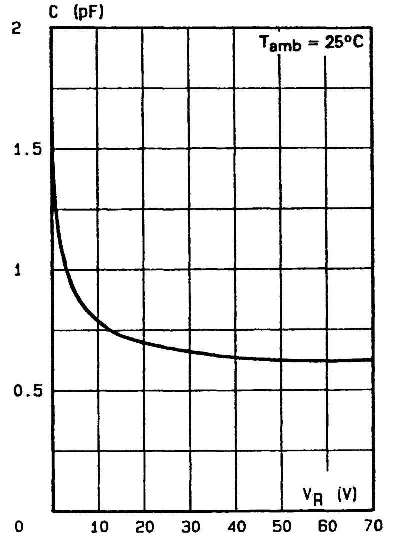


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

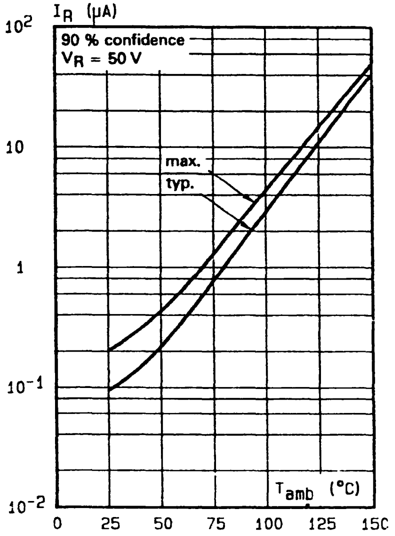


Fig.3 - Reverse current versus ambient temperature.

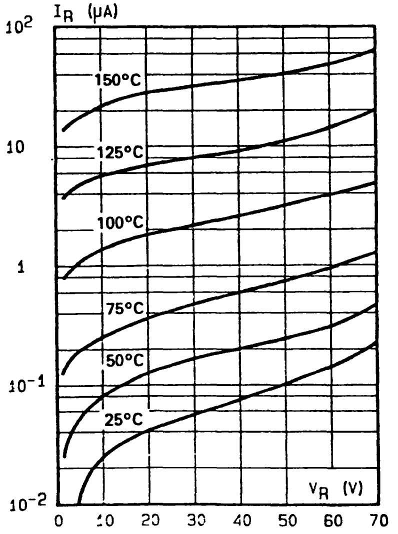
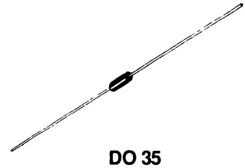


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

SGS-THOMSON
MICROELECTRONICS

BAR 19

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarly intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		4	V
I_F	Forward Continuous Current*	T_a = 25°C	30	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq$ 1s	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10μA	4			V
V_F (1)	T_{amb} = 25°C	I_F = 10mA			0.6	V
I_R (1)	T_{amb} = 25°C	V_R = 3V			0.25	μA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 1V	f = 1MHz			1	pF
F (2)	T_{amb} = 25°C	f = 1GHz			6		dB

* On infinite heatsink with 4mm lead length
(1) Pulse test $t_p \leq$ 300μs $\delta < 2\%$
(2) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1 5dB

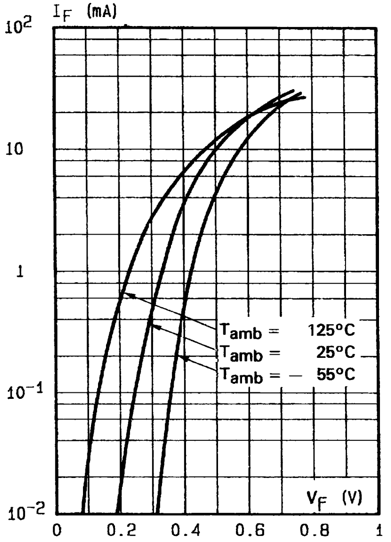


Fig.1 - Forward current versus forward voltage (typical values).

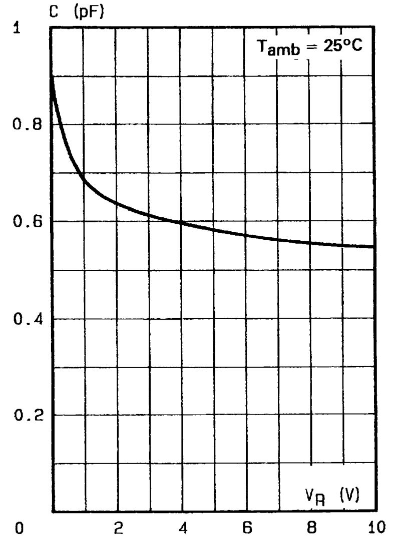


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

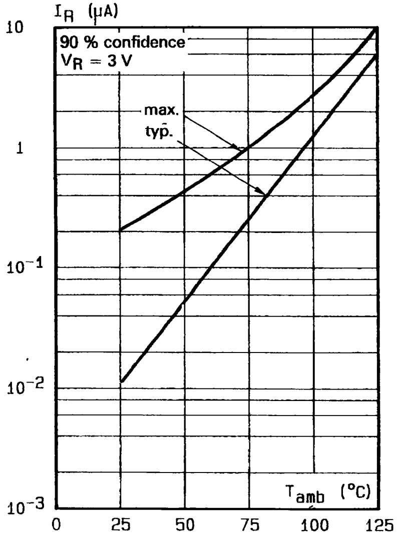


Fig.3 - Reverse current versus ambient temperature.

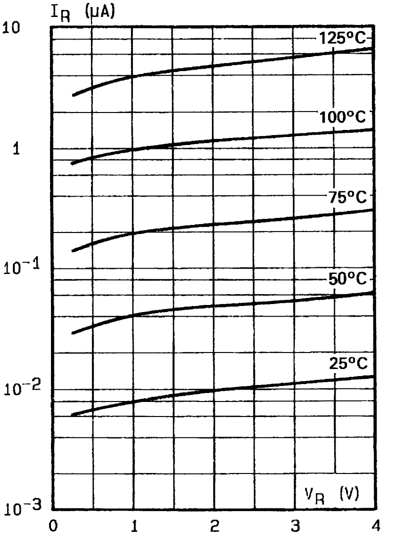
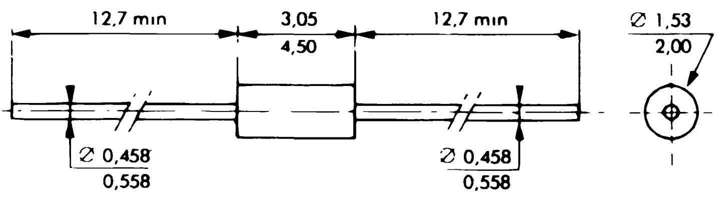


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking . clear, ring at cathode end
Weight : 0 15g

SGS-THOMSON
MICROELECTRONICS

BAR 28

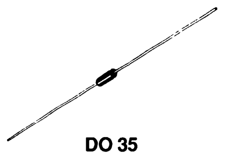
SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

Matched batches are available on request.



DO 35
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		70	V
I_F	Forward Continuous Current*	$T_a = 25°C$	15	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq 1s$	50	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	70			V
V_F**	$T_{amb} = 25°C$	$I_F = 1mA$			0.41	V
	$T_{amb} = 25°C$	$I_F = 15mA$			1	
I_R**	$T_{amb} = 25°C$	$V_R = 50V$			0 2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1MHz			2	pF
τ	$T_{amb} = 25°C$	$I_F = 5mA$	Krakauer Method			100	ps

* On infinite heatsink with 4mm lead length
* * Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

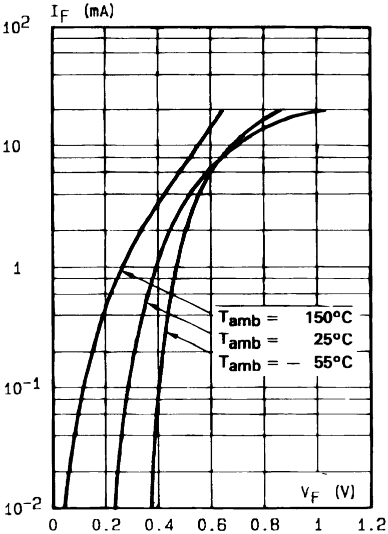


Fig.1 Forward current versus forward voltage at low level (typical values).

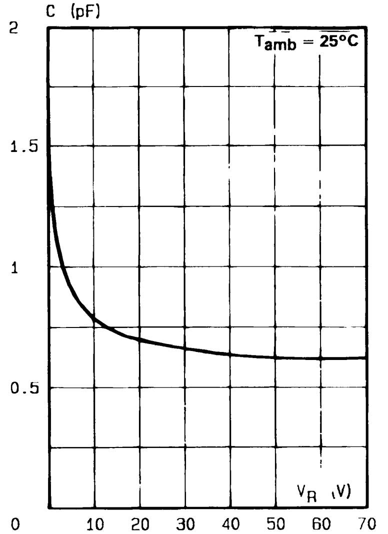


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

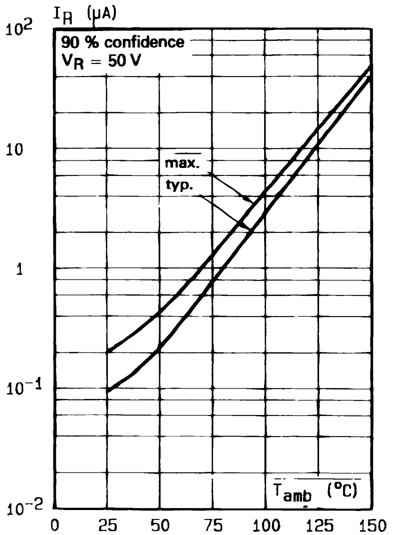


Fig.3 - Reverse current versus ambient temperature.

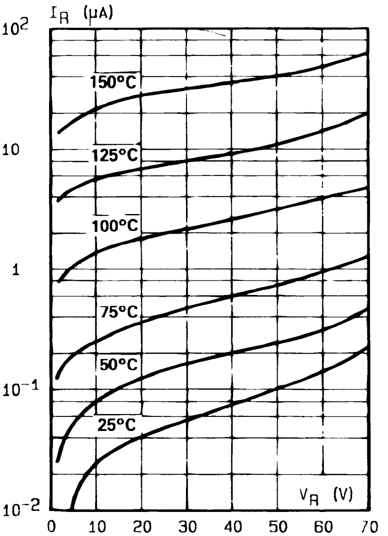
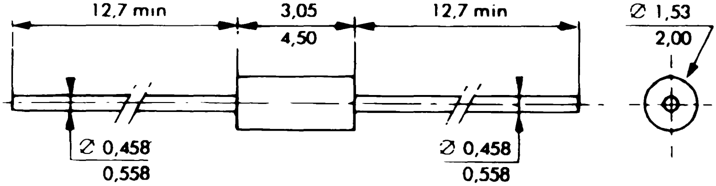


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass

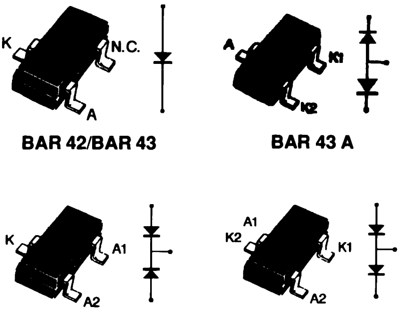


Cooling method by convection and conduction
Marking . clear, ring at cathode end
Weight 0.15g

SGS-THOMSON MICROELECTRONICS

BAR 42
BAR 43, A, C, S

SMALL SIGNAL SCHOTTKY DIODES



BAR 42/BAR 43 BAR 43 A

BAR 43 C BAR 43 S

SOT 23
(Plastic)

DESCRIPTION

General purpose, metal to silicon diodes featuring very low turn-on voltage and fast switching.

ABSOLUTE RATINGS (limiting values) (T_{amb} = 25°C) (see note 1)

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	30	V
I_F	Forward Current	100	mA
I_{FRM}	Repetitive Peak Forward Current	350	mA
I_{FSM}	Surge non Repetitive Forward Current	750	mA
P_{tot}	Power Dissipation* (see note 2)	160	mW
T_{stg} T_j	Storage and Junction Temperature Range	– 55 to 150 125	°C °C

THERMAL RESISTANCES (see note 3)

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	625	°C/W
$R_{th\ (j\text{-}SR)}$	Junction-substrate	400	°C/W

* Mounted on ceramic substrate 7 x 5 x 0 5mm.

Notes 1 For double diodes maximum ratings apply to each diode, provided that rated P_{tot} is not exceeded
2 For double diodes, P_{tot} is the total power dissipation of the two diodes
3 For double diodes, R_{th} refer to the total power dissipation in the two diodes and is given independently of the power distribution in the two diodes

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 100μA		30			V
V_F	T_{amb} = 25°C	BAR 42	I_F = 10mA		0.35	0.4	V
			I_F = 50mA		0.5	0.65	
		BAR 43	I_F = 2mA	0.26		0.33	
			I_F = 15mA			0.45	
		All	I_F = 100mA			1	
I_R	T_{amb} = 25°C	V_R = 25V				500	nA
	T_{amb} = 100°C					100	μA

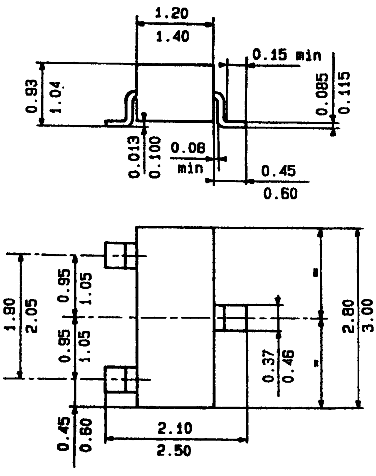
DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 1V	f = 1MHz		7		pF
t_{rr}	T_{amb} = 25°C I_{rr} = 1mA	I_F = 10mA R_L = 100Ω	I_R = 10mA			5	ns
η*	T_{amb} = 25°C F = 45MHz	R_L = 15kΩ V_I = 2V	C_L = 300pF for BAR 43	80			%

* Detection efficiency.

PACKAGE MECHANICAL DATA

SOT 23 (Plastic)



Type	BAR 42	BAR 43	BAR 43A	BAR 43C	BAR 43 S
Marking	D94	D95	DB1	DB2	DA5

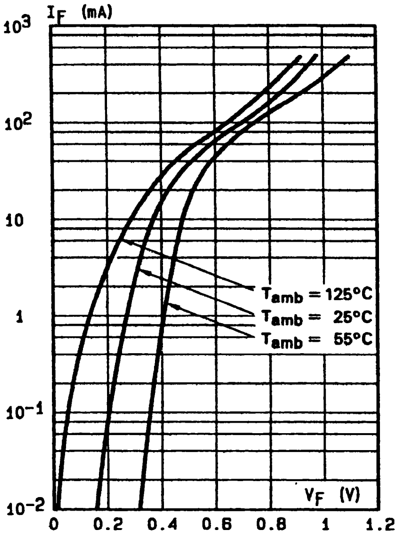


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

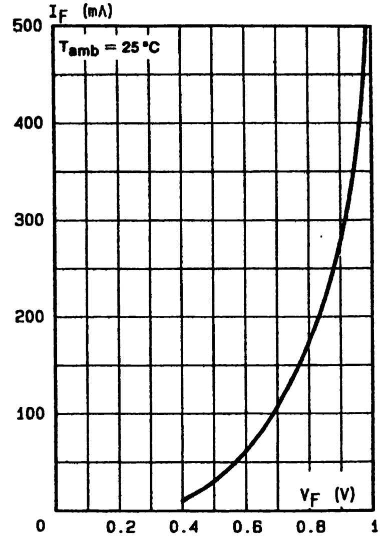


Fig.2 - Forward current versus forward voltage (typical values).

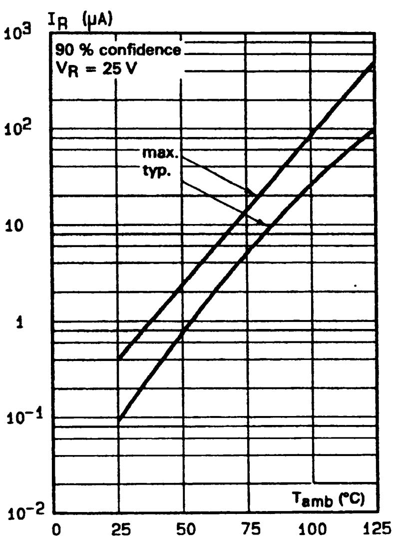


Fig.3 - Reverse current versus junction temperature.

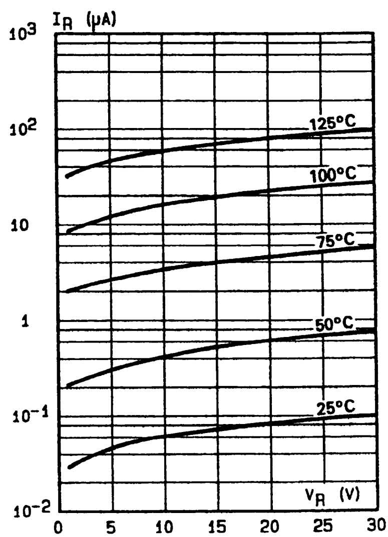


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

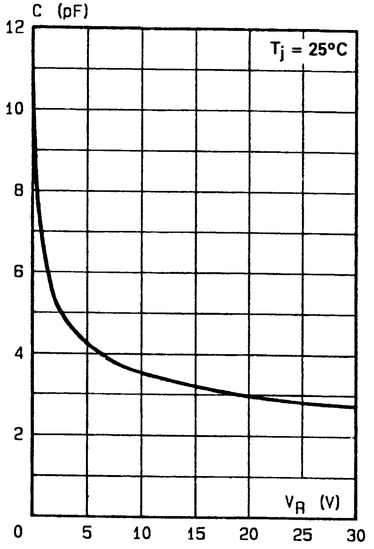
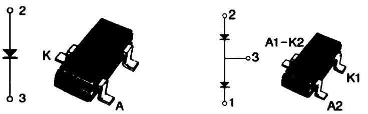


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

SGS-THOMSON
MICROELECTRONICS

BAT 17, DS

SMALL SIGNAL SCHOTTKY DIODES



BAT 17 **BAT 17, DS**

SOT 23
(Plastic)

DESCRIPTION

BAT 17 is a metal to silicon junction diode featuring low turn-on voltage, low capacitance and ultrafast switching. Single or double series connected diodes are available. Two double diodes can be connected in bridge or ing configuration.
These devices are suited for single or double balanced UHF mixers, sampling circuits, modulators, phase detectors.

ABSOLUTE RATINGS (limiting values) (T_{amb} = 25°C)

Symbol	Parameter	Value	Unit
V_R	Continuous Reverse Voltage	4	V
I_F	Continuous Forward Current	30	mA
T_{stg} T_j	Storage and Junction Temperature Range	– 65 to 100 100	°C °C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	625	°C/W
$R_{th\ (j-SR)}$	Junction-substrate	400	°C/W

* Mounted on ceramic substrate : 7 x 5 x 0.5mm

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	4			V
V_F	T_{amb} = 25°C	I_F = 10mA			0.6	V
I_R	T_{amb} = 25°C	V_R = 3V			0.25	µA
	T_{amb} = 60°C				1.25	

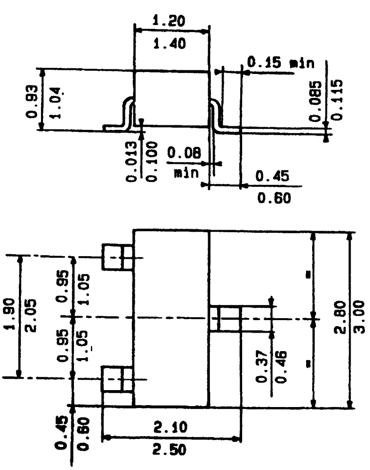
DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0	f = 1MHz			1	pF
F	T_{amb} = 25°C	F = 1GHz	See note			7	dB
r	T_{amb} = 25°C	I_F = 5mA	F = 1KHz			15	Ω

Note . NOISE FIGURE TEST
- Diode is inserted in a tuned stripline circuit
- Local oscillator frequency : 1GHz
- Local oscillator power : 1mW
- Intermediary frequency amplifier, tuned on 30MHz, has a noise figure . 1 5dB.

PACKAGE MECHANICAL DATA

SOT 23 (Plastic)



Marking : A3 for BAT 17
D85 for BAT 17DS

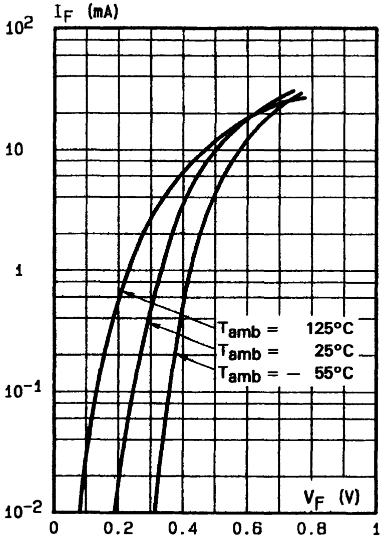


Fig.1 - Forward current versus forward voltage (typical values).

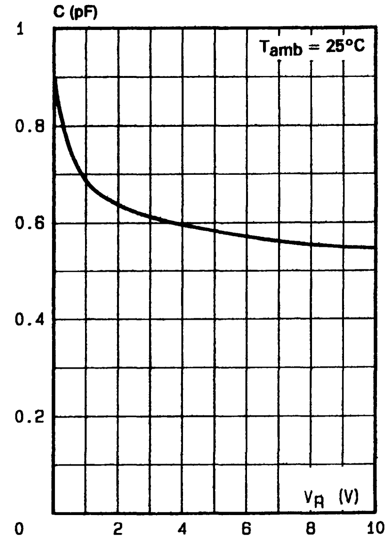


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

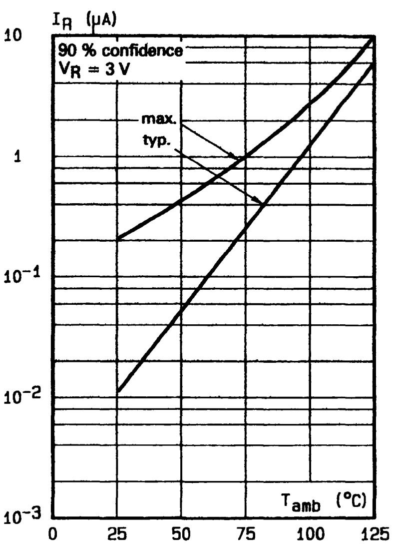


Fig.3 - Reverse current versus ambient temperature.

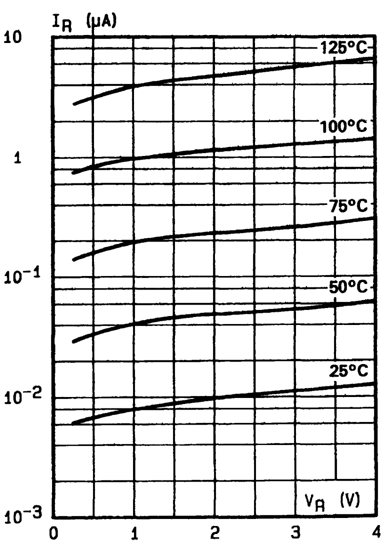
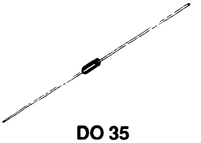


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

Matched batches are available on request.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		10	V
I_F	Forward Continuous Current*	T_a = 25°C	30	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \le$ 1s	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	10			V
V_F (1)	T_{amb} = 25°C	I_F = 1mA			0.4	V
	T_{amb} = 25°C	I_F = 20mA			1	
I_R (1)	T_{amb} = 25°C	V_R = 5V			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1GHz			1.2	pF
τ	T_{amb} = 25°C	I_F = 20mA	Krakauer Method			100	ps
F (2)	T_{amb} = 25°C	f = 1GHz			6		dB

* On infinite heatsink with 4mm lead length
(1) Pulse test $t_p \le 300\mu s$ $\delta < 2\%$
(2) Noise figure test :
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1.5dB

Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

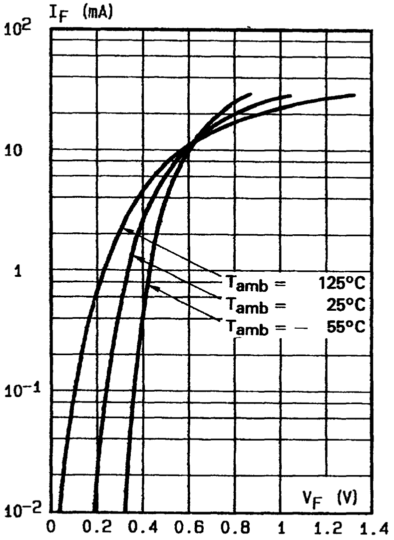


Fig.1 - Forward current versus forward voltage at low level (typical values).

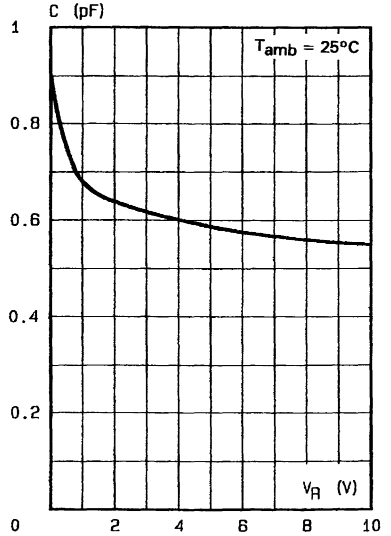


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

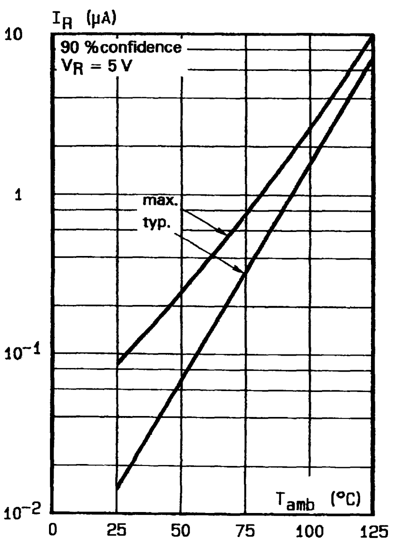


Fig.3 - Reverse current versus ambient temperature.

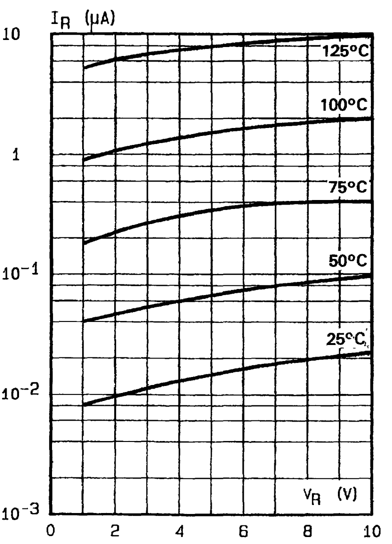
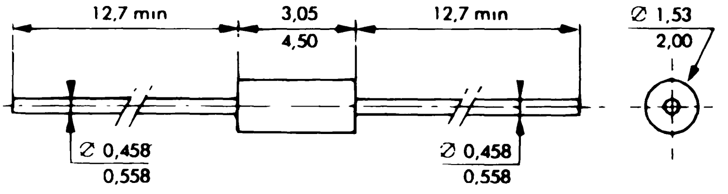


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

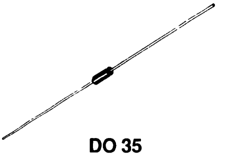
PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking · clear, ring at cathode end.
Weight · 0 15g

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		5	V
I_F	Forward Continuous Current*	T_a = 25°C	30	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Lead Temperature for Soldering 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 100µA	5			V
V_F (1)	T_{amb} = 25°C	I_F = 10mA			0.55	V
I_R (1)	T_{amb} = 25°C	V_R = 1V			0.05	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			1	pF
Q_S (2)	T_{amb} = 25°C	I_F = 10mA				3	pC
F (3)	T_{amb} = 25°C	f = 1GHz			6	7	dB

* On infinite heatsink with 4mm lead length
(1) Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
(2) Measured on B-line Electronics QS-3 stored charge meter
(3) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure, 1 5dB

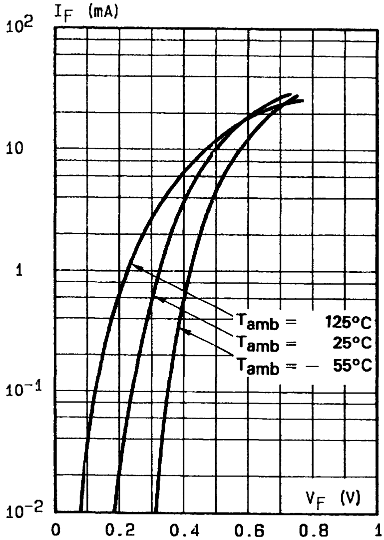


Fig.1 - Forward current versus forward voltage (typical values).

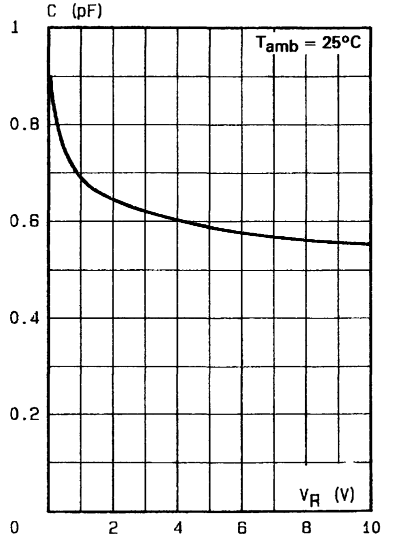


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

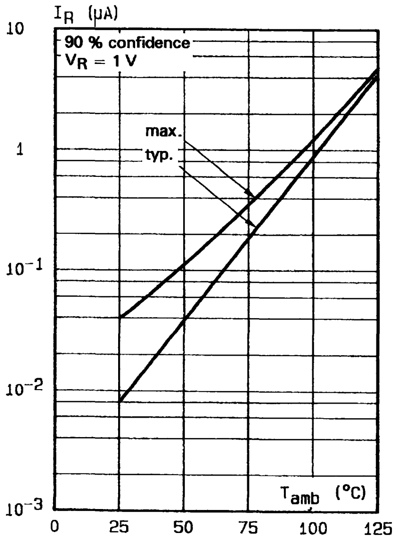


Fig.3 - Reverse current versus ambient temperature.

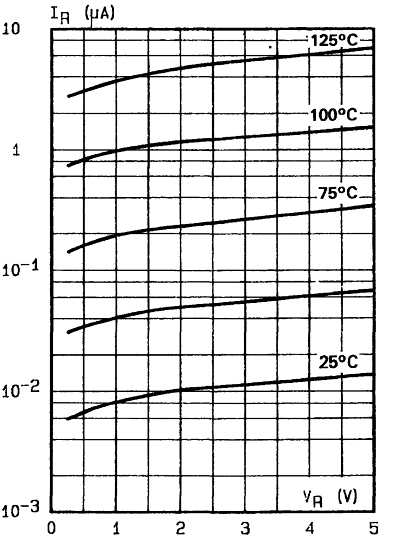
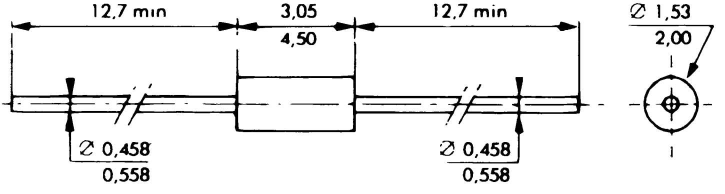


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

PACKAGE MECHANICAL DATA

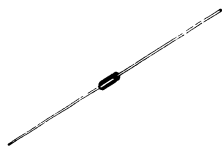
DO 35 Glass



Cooling method by convection and conduction
Marking : clear, ring at cathode end.
Weight : 0.15g

BAT 41

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

General purpose metal to silicon diode featuring very low turn-on voltage and fast switching.

This device has integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		100	V
I_F	Forward Continuous Current*	$T_a = 25°C$	100	mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	350	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10ms$	750	mA
P_{tot}	Power Dissipation*	$T_a = 95°C$	100	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_j = 25°C$	$I_R = 100\mu A$	100			V
V_F**	$T_j = 25°C$	$I_F = 1mA$		0.4	0.45	V
	$T_j = 25°C$	$I_F = 200mA$			1	
I_R**	$T_j = 25°C$	$V_R = 50V$			0.1	µA
	$T_j = 100°C$				20	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_j = 25°C$	$V_R = 1V$	f = 1MHz		2		pF

* On infinite heatsink with 4mm lead length
* * Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

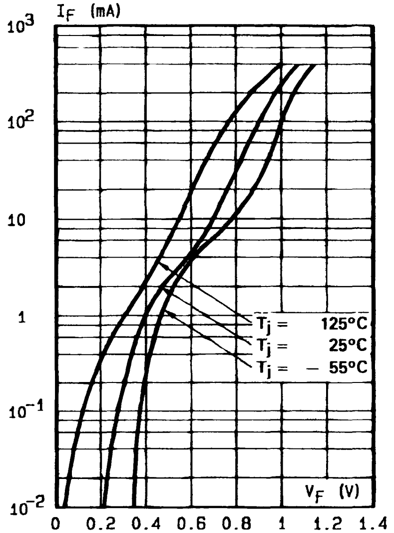


Fig.1 – Forward current versus forward voltage at different temperatures (typical values).

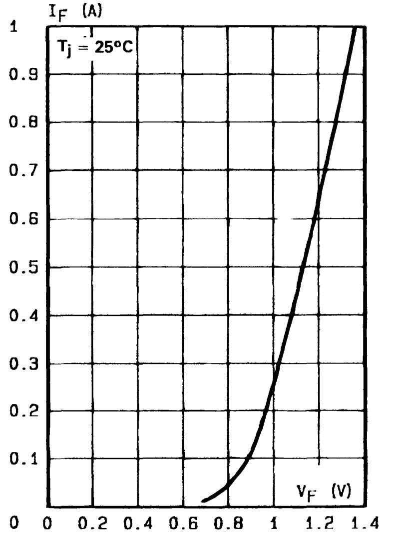


Fig.2 Forward current versus forward voltage (typical values).

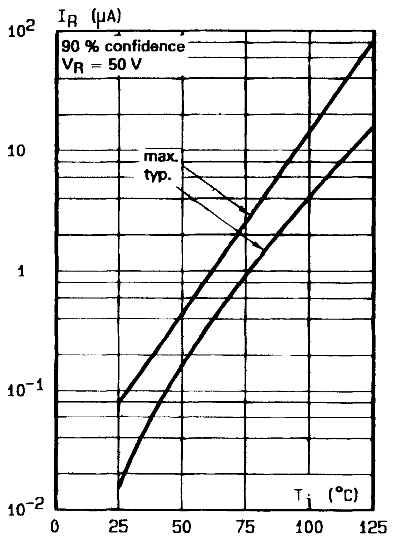


Fig.3 – Reverse current versus junction temperature.

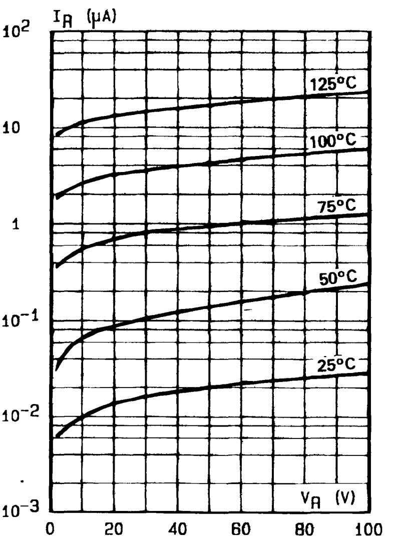


Fig.4 – Reverse current versus continuous reverse voltage (typical values).

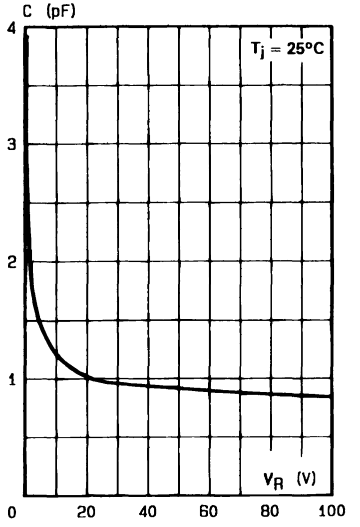
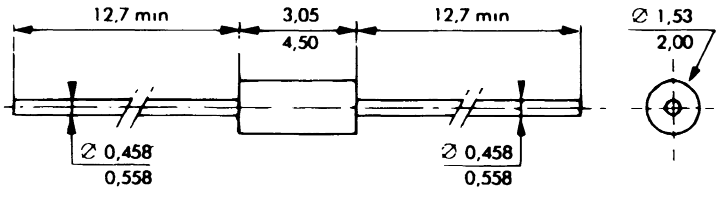


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass

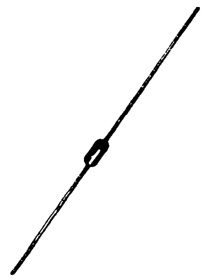


Cooling method by convection and conduction
Marking : clear, ring at cathode end.
Weight · 0.15g

SGS-THOMSON MICROELECTRONICS

BAT 42
BAT 43

SMALL SIGNAL SCHOTTKY DIODES



DO 35
(Glass)

DESCRIPTION

General purpose metal to silicon diodes featuring very low turn-on voltage and fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		30	V
I_F	Forward Continuous Current*	$T_a = 25°C$	200	mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	500	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10ms$	4	A
P_{tot}	Power Dissipation*	$T_a = 65°C$	200	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	300	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_j = 25°C$	$I_R = 100\mu A$		30			V
V_F*	$T_j = 25°C$	$I_F = 200mA$	All Types			1	V
	$T_j = 25°C$	$I_F = 10mA$	BAT 42			0.4	
	$T_j = 25°C$	$I_F = 50mA$				0 65	
	$T_j = 25°C$	$I_F = 2mA$	BAT 43	0.26		0.33	
	$T_j = 25°C$	$I_F = 15mA$				0.45	
I_R*	$T_j = 25°C$		$V_R = 25V$			0.5	µA
	$T_j = 100°C$					100	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
C	$T_j = 25°C$ $V_R = 1V$ $f = 1MHz$		7		pF
t_{rr}	$T_j = 25°C$ $I_F = 10mA$ $I_R = 10mA$ $I_{rr} = 1mA$ $R_L = 100\Omega$			5	ns
η	$T_j = 25°C$ $R_L = 15K\Omega$ $C_L = 300pF$ $f = 45MHz$ $V_i = 2V$	80			%

* Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

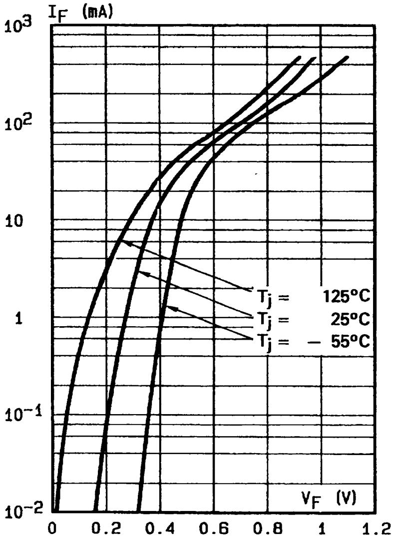


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

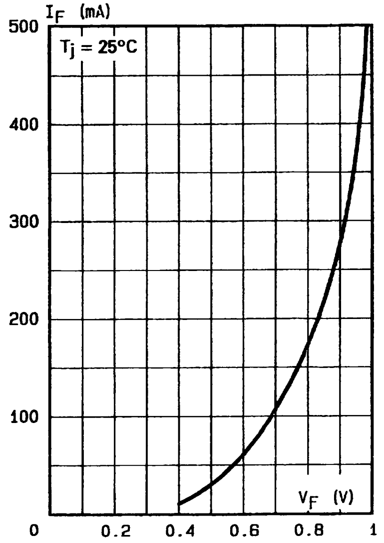


Fig.2 - Forward current versus forward voltage (typical values).

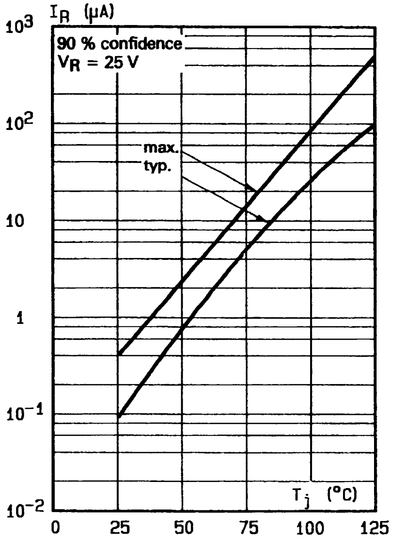


Fig.3 - Reverse current versus junction temperature.

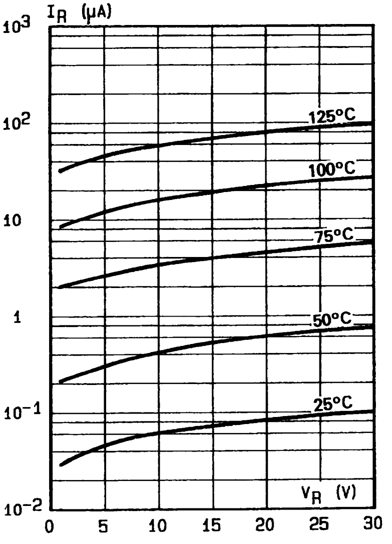


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

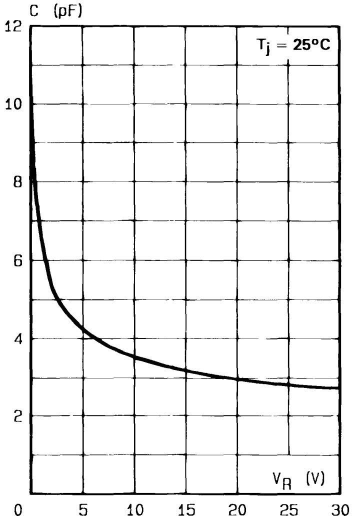
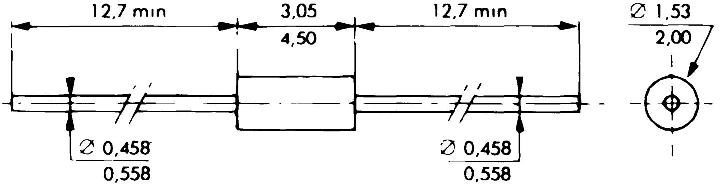


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

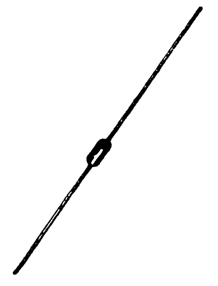
PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0 15g

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		15	V
I_F	Forward Continuous Current*	$T_a = 25°C$	30	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Lead Temperature for Soldering durinf 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	400	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	15			V
V_F (1)	T_{amb} = 25°C	I_F = 1mA			0.38	V
	T_{amb} = 25°C	I_F = 10mA			0.5	
	T_{amb} = 25°C	I_F = 30mA			1	
I_R (1)	T_{amb} = 25°C	V_R = 6V			0.1	µA

DYNAMIC CHARACTERISTICS

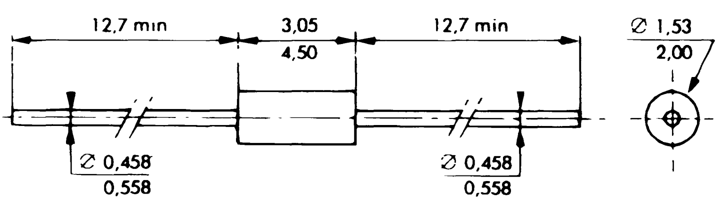
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 1V	f = 1MHz			1.1	pF
τ	T_{amb} = 25°C	I_F = 20mA	Krakauer Method			100	ps
F (2)	T_{amb} = 25°C	f = 1GHz			6	7	dB

(1) Pulse test · $t_p \leq 300\mu s$ $\delta < 2\%$
(2) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1 5dB

Matched batches avalailable on request Test conditions (forward voltage and/or capacitance) according to customer specification

PACKAGE MECHANICAL DATA

DO 35 Glass



Marking clear, ring at cathode end
Weight 0 15g
Cooling method by convection and conduction

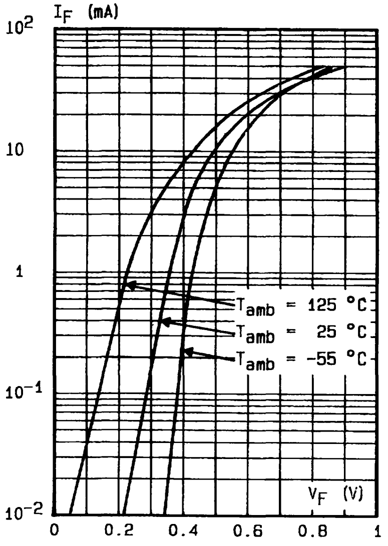


Fig.1 - Forward current versus forward voltage (typical values).

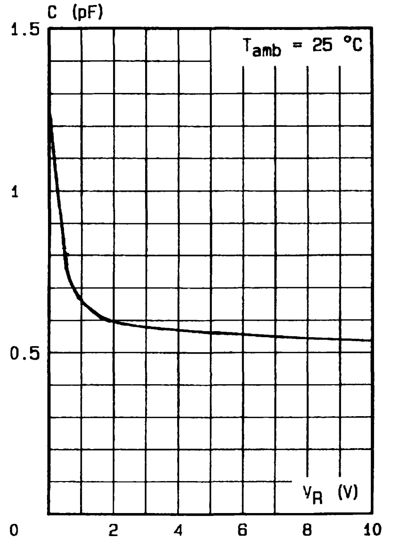


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

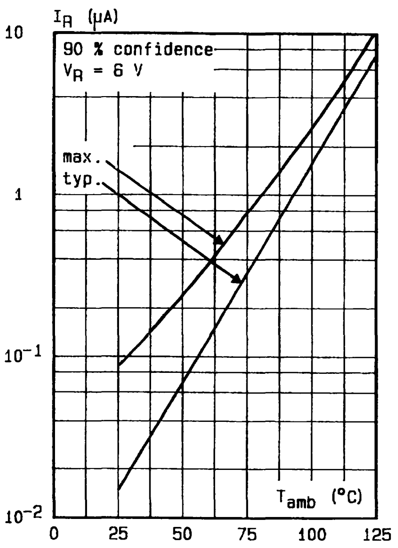


Fig.3 - Reverse current versus ambient temperature.

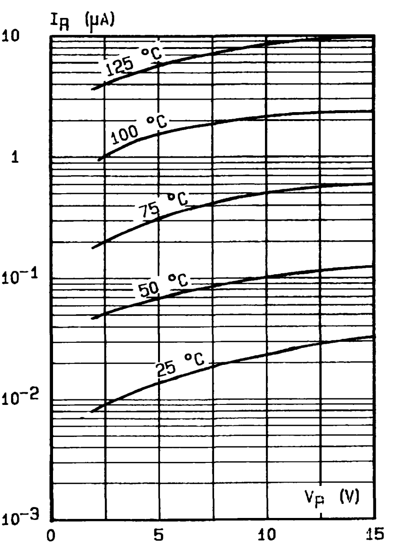
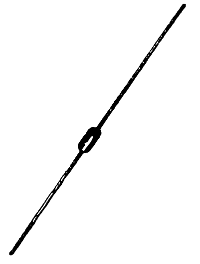


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

SMALL SIGNAL SCHOTTKY DIODE



DO 35
(Glass)

DESCRIPTION

General purpose, metal to silicon diode featuring high breakdown voltage low turn-on voltage.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		100	V
I_F	Forward Continuous Current*	$T_a = 25°C$	150	mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	350	mA
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10ms$	750	mA
P_{tot}	Power Dissipation*	$T_a = 80°C$	150	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	300	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_j = 25°C$	$I_R = 100\mu A$	100			V
V_F*	$T_j = 25°C$	$I_F = 0.1mA$			0.25	V
	$T_j = 25°C$	$I_F = 10mA$			0.45	
	$T_j = 25°C$	$I_F = 250mA$			1	
I_R*	$T_j = 25°C$	$V_R = 1.5V$			0.5	µA
	$T_j = 60°C$				5	
	$T_j = 25°C$	$V_R = 10V$			0.8	
	$T_j = 60°C$				7.5	
	$T_j = 25°C$	$V_R = 50V$			2	
	$T_j = 60°C$				15	
	$T_j = 25°C$	$V_R = 75V$			5	
	$T_j = 60°C$				20	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_j = 25°C$	$V_R = 0V$	f = 1MHz		10		pF
	$T_j = 25°C$	$V_R = 1V$			6		

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

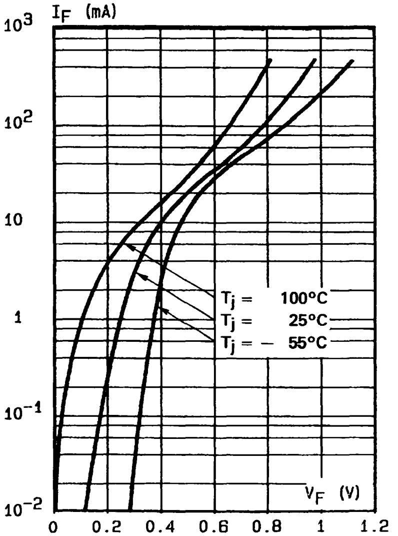


Fig.1 - Forward current versus forward voltage at different temperatures (typical values)

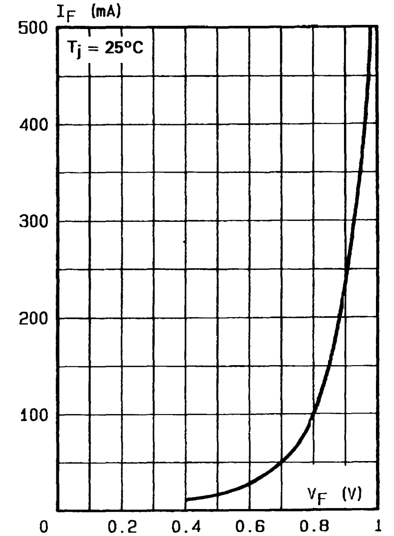


Fig.2 - Forward current versus forward voltage (typical values)

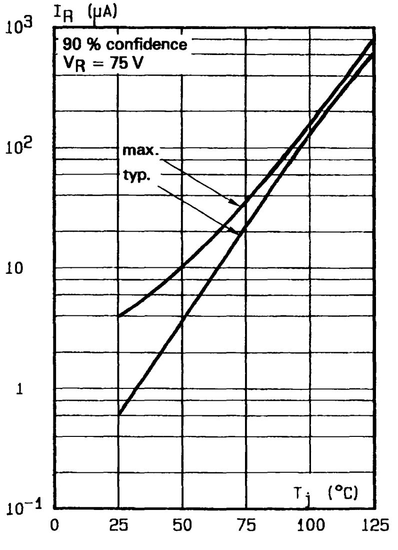


Fig.3 - Reverse current versus junction temperature (typical values).

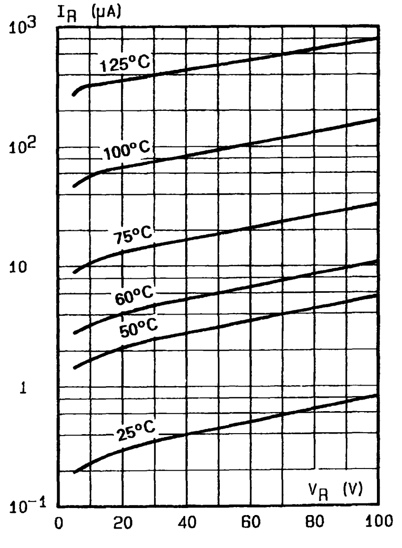


Fig.4 - Reverse current versus continuous reverse voltage

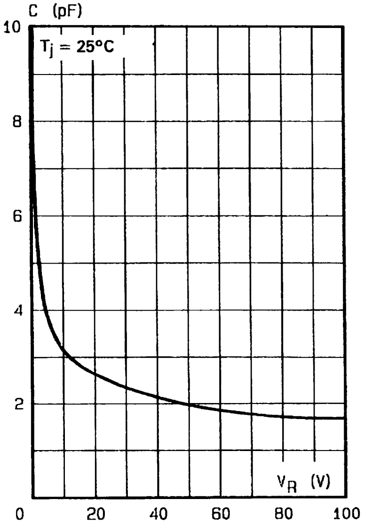
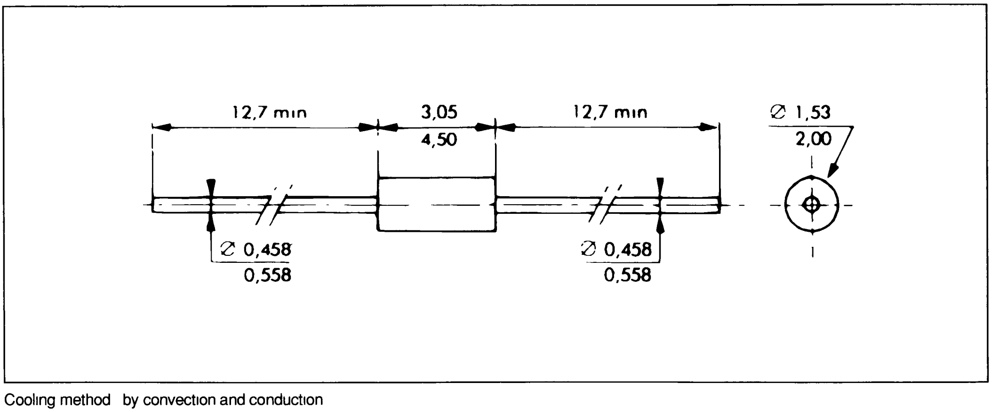


Fig.5 – Capacitance C versus reverse applied voltage V_R (typical values).

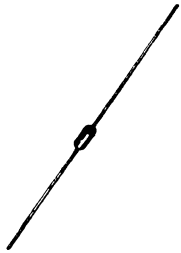
PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0.15g

SMALL SIGNAL SCHOTTKY DIODES



DO 35
(Glass)

DESCRIPTION

General purpose metal to silicon diodes featuring very low turn-on voltage and fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		BAT 47	BAT 48	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	40	V
I_F	Forward Continuous Current*	$T_a = 25°C$	350		mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p \leq 1s$ $\delta \leq 0.5$	1		A
I_{FSM}	Surge non Repetitive Forward Current*	$t_p = 10ms$	7.5		A
		$t_p = 1s$	1.5		
P_{tot}	Power Dissipation*	$T_a = 25°C$	330		mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125		°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230		°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	300	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	I_R = 10μA		BAT 47	20			V
	I_R = 25μA		BAT 48	40			
V_F*	T_j = 25°C I_F = 0.1mA		All Types			0.25	V
	T_j = 25°C I_F = 1mA					0.3	
	T_j = 25°C I_F = 10mA					0 4	
	T_j = 25°C I_F = 30mA		BAT 47			0.5	
	T_j = 25°C I_F = 150mA					0 8	
	T_j = 25°C I_F = 300mA					1	
	T_j = 25°C I_F = 50mA		BAT 48			0.5	
	T_j = 25°C I_F = 200mA					0.75	
	T_j = 25°C I_F = 500mA					0.9	
I_R*	T_j = 25°C	V_R = 1.5V	All Types			1	μA
	T_j = 60°C					10	
	T_j = 25°C	V_R = 10V	BAT 47			4	
	T_j = 60°C					20	
	T_j = 25°C	V_R = 20V				10	
	T_j = 60°C					30	
	T_j = 25°C	V_R = 10V	BAT 48			2	
	T_j = 60°C					15	
	T_j = 25°C	V_R = 20V				5	
	T_j = 60°C					25	
	T_j = 25°C	V_R = 40V				25	
	T_j = 60°C					50	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C V_R = 0V	f = 1MHz		20		pF
	T_j = 25°C V_R = 1V			12		
t_{rr}	T_j = 25°C I_F = 10mA V_R = 1V i_{rr} = 1mA R_L = 100Ω			10		ns

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

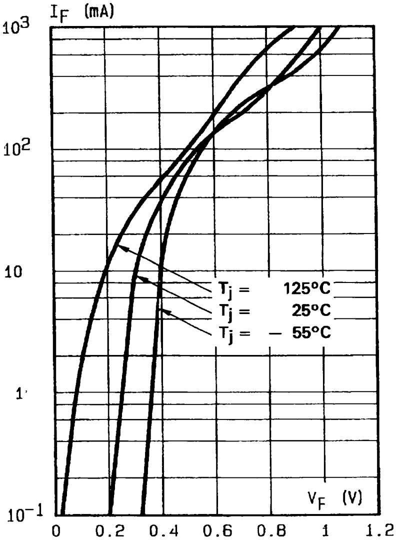


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

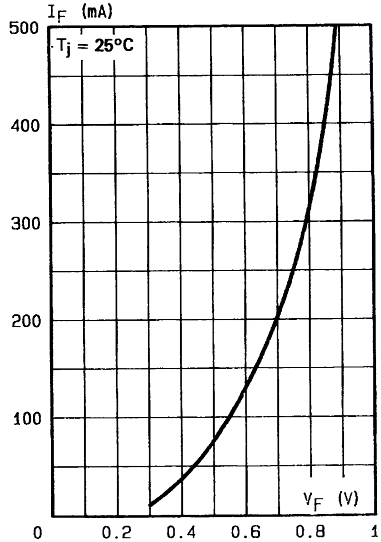


Fig.2 - Forward current versus forward voltage (typical values).

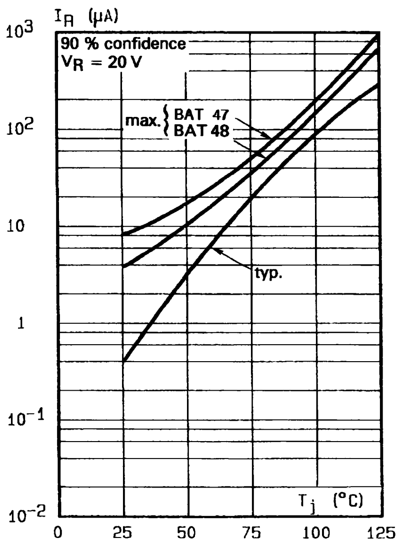


Fig.3 - Reverse current versus junction temperature.

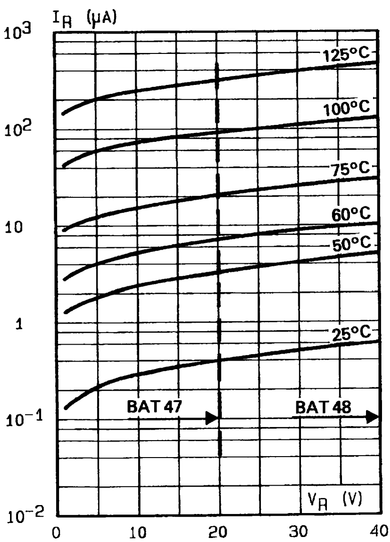


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

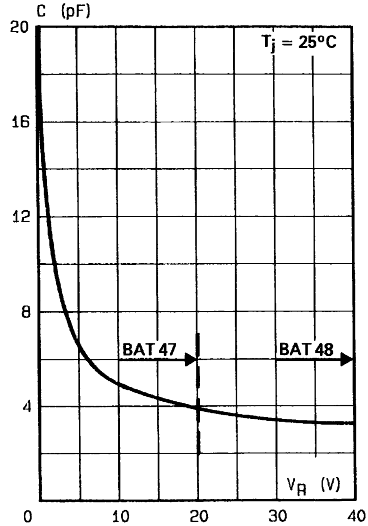
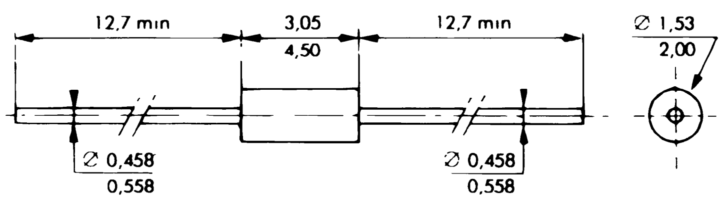


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

PACKAGE MECHANICAL DATA

DO 35 Glass



Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0.15g

SGS-THOMSON
MICROELECTRONICS

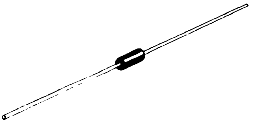
BAT 49

SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

General purpose metal to silicon diode featuring very low turn-on voltage and fast switching.

This device has integrated protection against excessive voltage such as electrostatic discharges.



DO 41
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		80	V
I_F	Forward Continuous Current*	$T_a = 70°C$	500	mA
I_{FRM}	Repetitive Peak Forward Current*	$t_p = 1s$ $\delta \leq 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current*	$t_p \leq 10ms$	10	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}a)}$	Junction-ambient*	110	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R**	$T_j = 25°C$	$V_R = 80V$			200	µA
V_F**	$T_j = 25°C$	$I_F = 10mA$			0.32	V
	$T_j = 25°C$	$I_F = 100mA$			0.42	
	$T_j = 25°C$	$I_F = 1A$			1	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	$T_j = 25°C$ f = 1MHz	$V_R = 0V$		120		pF
		$V_R = 5V$		35		

* On infinite heatsink with 4mm lead length
** Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

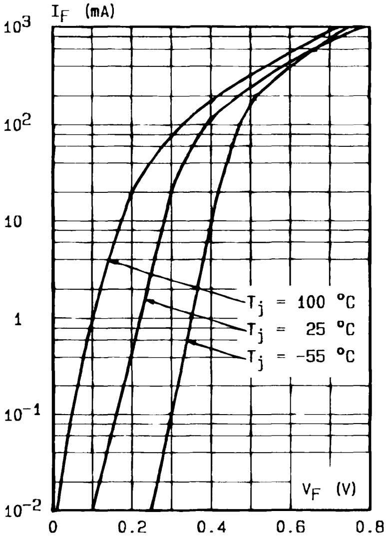


Fig.1 - Forward current versus forward voltage at low level (typical values).

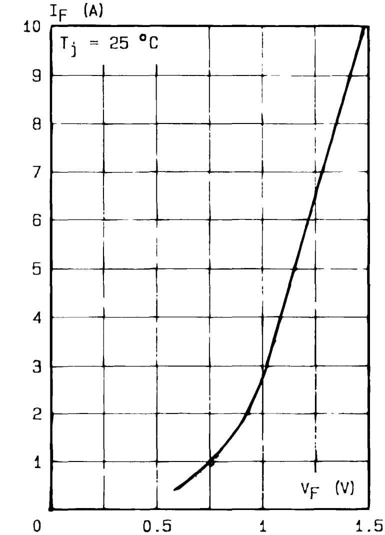


Fig.2 - Forward current versus forward voltage at high level (typical values).

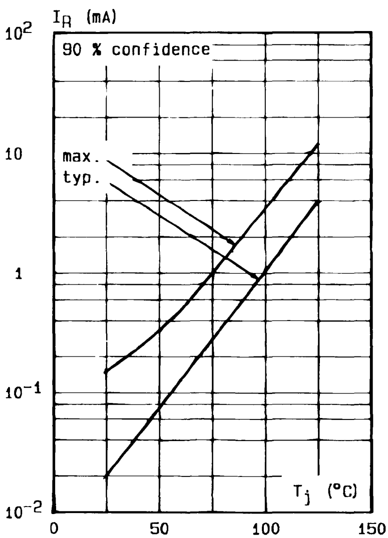


Fig.3 - Reverse current versus junction temperature.

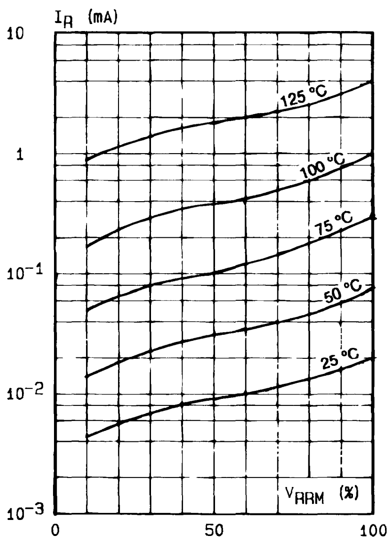


Fig.4 - Reverse current versus V_{RRM} in per cent.

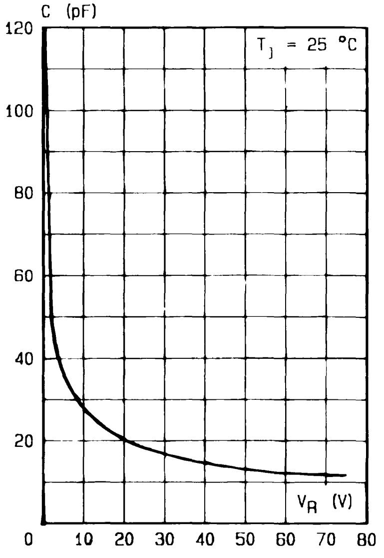


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

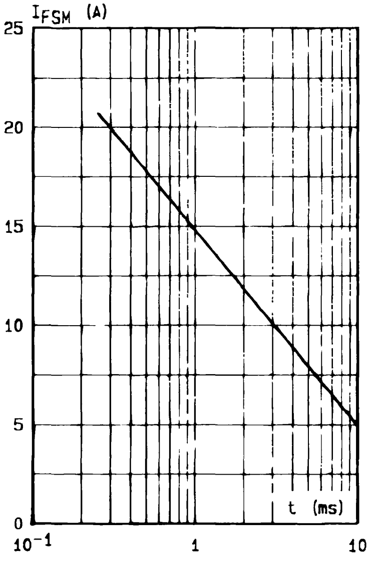


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ⩽ 10 ms.

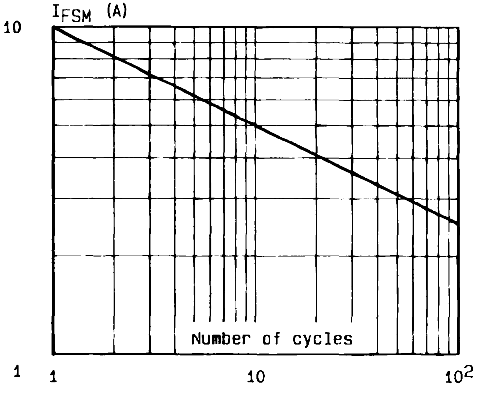
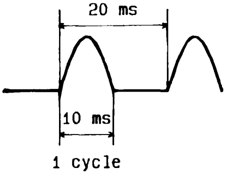
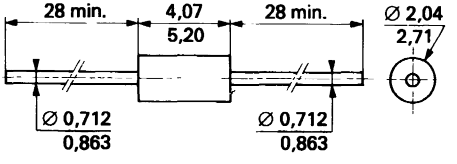


Fig.7 - Surge non repetitive forward current versus number of cycles.



PACKAGE MECHANICAL DATA

DO 41 Glass

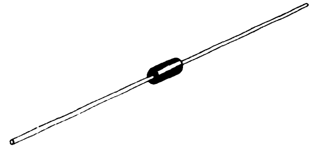


Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0 34g

SGS-THOMSON
MICROELECTRONICS

BYV 10-20 →40

SMALL SIGNAL SCHOTTKY DIODES



DO 41
(Glass)

DESCRIPTION

Metal to silicon rectifier diodes in glass case featuring very low foward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(AV)}$	Average Forward Current*	T_{amb} = 60°C	1	A
I_{FSM}	Surge non Repetitive Forward Current	T_{amb} = 25°C t_p = 10ms	25 Sinusoidal Pulse	A
		T_{amb} = 25°C t_p = 300μs	50 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	BYV 10-20	BYV 10-30	BYV 10-40	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	40	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	110	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	T_j = 25°C	$V_R = V_{RRM}$			0.5	mA
	T_j = 100°C				10	
V_F*	I_F = 1A	T_j = 25°C			0.55	V
	I_F = 3A				0 85	

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0		220		pF

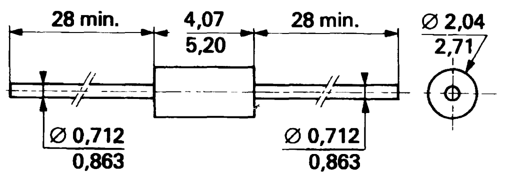
Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.

Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is requiered to charge the depletion capacitance of the diode.

This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifier consists of an ideal diode in parallel with a variable capacitance equal to the junction capacitance (see fig. 5 page 4/4).

PACKAGE MECHANICAL DATA

DO 41 Glass



Coolıng method by convectıon and conductıon
Marking clear, rıng at cathode end
Weıght 0 34g

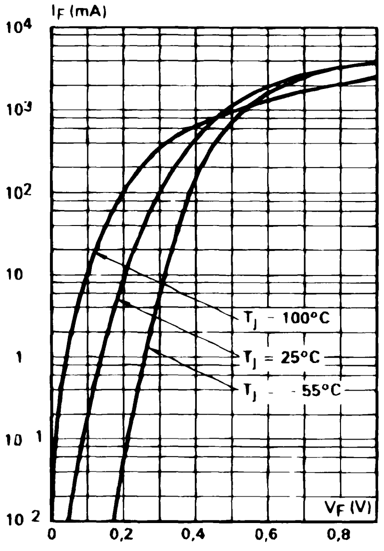


Fig.1 Forward current versus forward voltage at low level (typical values)

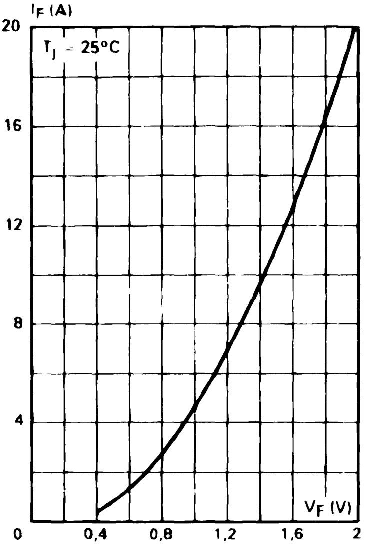


Fig.2 Forward current versus forward voltage at high level (typical values)

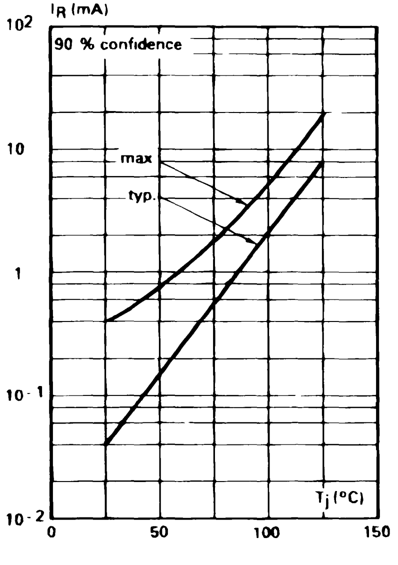


Fig 3 - Reverse current versus junction temperature.

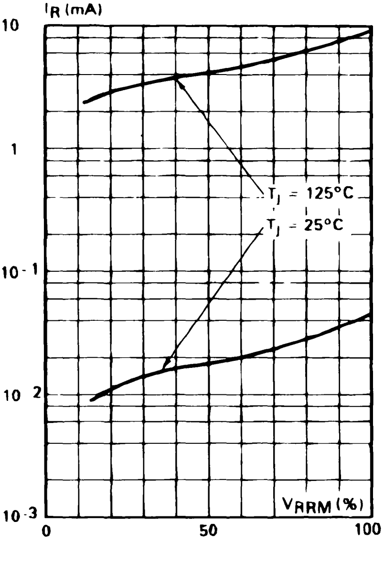


Fig.4 Reverse current versus V_{RRM} in per cent

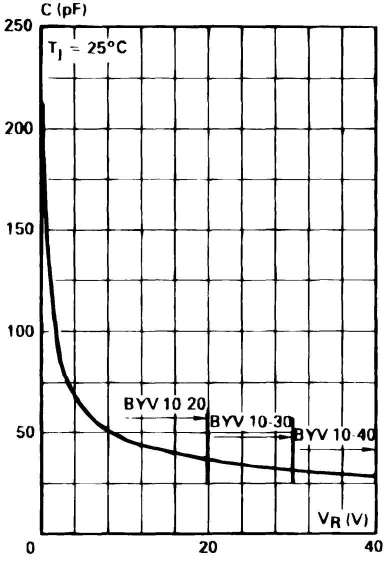


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values)

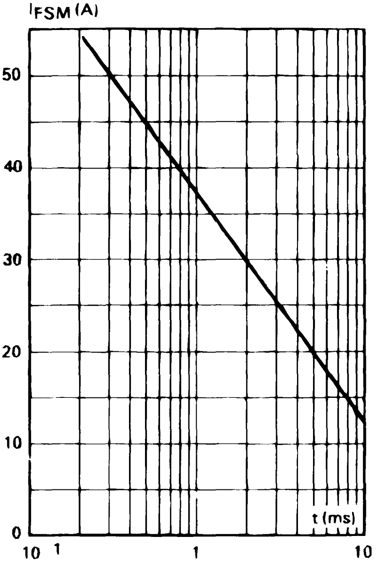
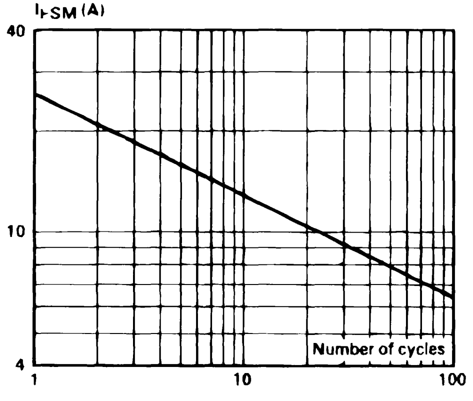


Fig 6 - Surge non repetitive forward current for a rectangular pulse with t ≤ 10 ms



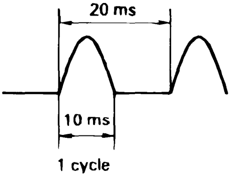
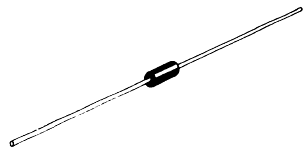


Fig.7 Surge non repetitive forward current versus number of cycles.

BYV 10-20 A

SMALL SIGNAL SCHOTTKY DIODE



DO 41
(Glass)

DESCRIPTION

Metal to silicon rectifier diode in glass case featuring very low foward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	V
$I_{F(AV)}$	Average Forward Current*	T_{amb} = 60°C	1	A
I_{FSM}	Surge non Repetitive Forward Current	T_{amb} = 25°C t_p = 10ms	25 Sinusoidal Pulse	A
		T_{amb} = 25°C t_p = 300µs	50 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	110	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	$T_j = 25°C$	$V_R = V_{RRM}$			0.3	mA
	$T_j = 100°C$				10	
V_F*	$I_F = 1A$	$T_j = 25°C$			0.45	V
	$I_F = 3A$				0.75	

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	$T_j = 25°C$	$V_R = 0$		330		pF

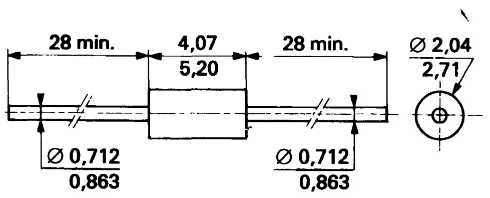
Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.

Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is required to charge the depletion capacitance of the diode.

This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifier consists of an ideal diode in parallel with a variable capacitance equal to the junction capacitance (see fig. 5 page 4/4).

PACKAGE MECHANICAL DATA

DO 41 Glass



Cooling method by convection and connection
Marking clear, ring at cathode end
Weight 0.34g

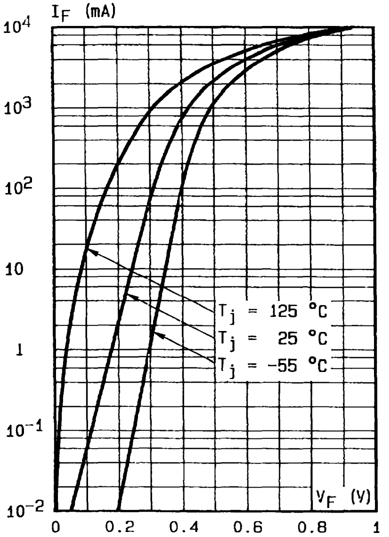


Fig.1 - Forward current versus forward voltage at low level (typical values).

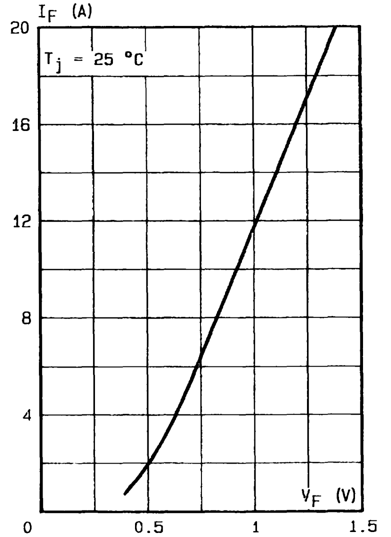


Fig.2 - Forward current versus forward voltage at high level (typical values).

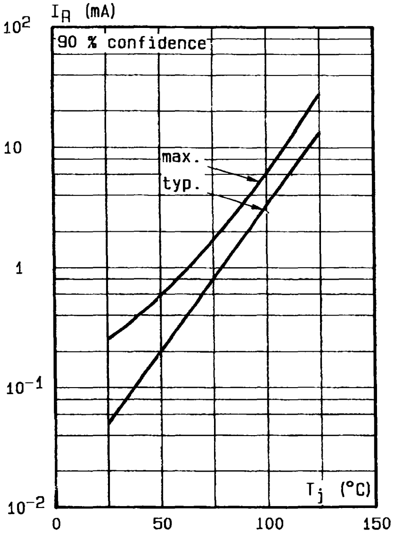


Fig.3 - Reverse current versus junction temperature.

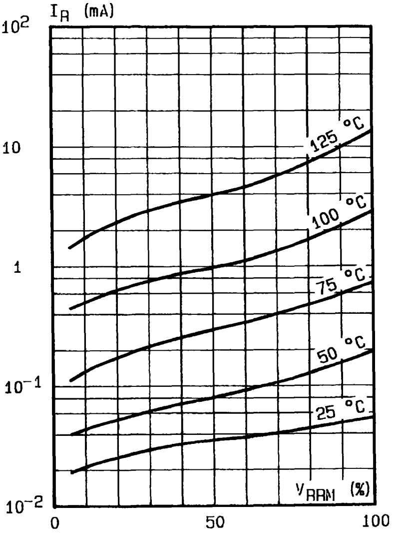


Fig.4 - Reverse current versus V_{RRM} in per cent.

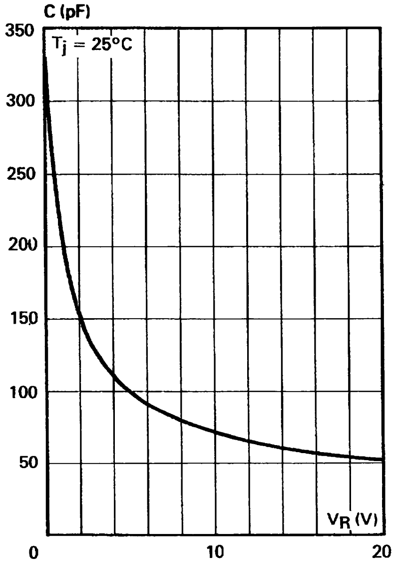


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values)

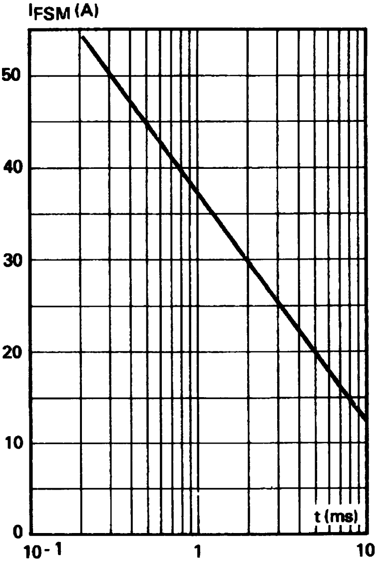
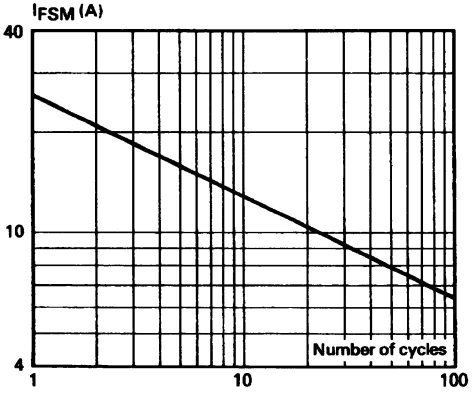


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ≤10 ms.



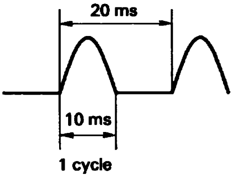
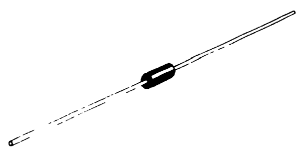


Fig.7 - Surge non repetitive forward current versus number of cycles.

SMALL SIGNAL SCHOTTKY DIODE



DO 41
(Glass)

DESCRIPTION

Metal to silicon rectifier diode in glass case featuring very low foward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		60	V
$I_{F(AV)}$	Average Forward Current*	T_{amb} = 25°C	1	A
I_{FSM}	Surge non Repetitive Forward Current	T_{amb} = 25°C t_p = 10ms	20 Sinusoidal Pulse	A
		T_{amb} = 25°C t_p = 300µs	40 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	110	°C/W

* On infinite heatsink with 4mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	T_j = 25°C	$V_R = V_{RRM}$			0.5	mA
	T_j = 100°C				10	
V_F*	I_F = 1A	T_j = 25°C			0.7	V
	I_F = 3A				1	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0		150		pF
	T_j = 25°C	V_R = 5V		40		

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

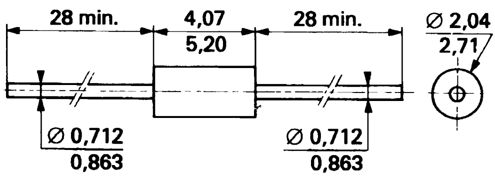
Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.

Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is requiered to charge the depletion capacitance of the diode.

This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifier consists of an ideal diode in parallel with a variable capacitance equal to the junction capacitance (see fig. 5 page 4/4).

PACKAGE MECHANICAL DATA

DO 41 Glass



Cooling method by convection and conduction
Marking clear, ring at cathode end
Weight 0 34g

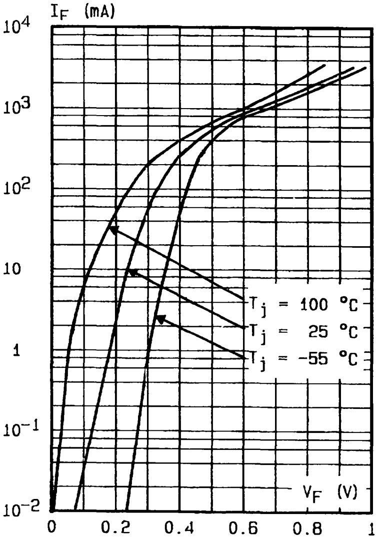


Fig.1 - Forward current versus forward voltage at low level (typical values).

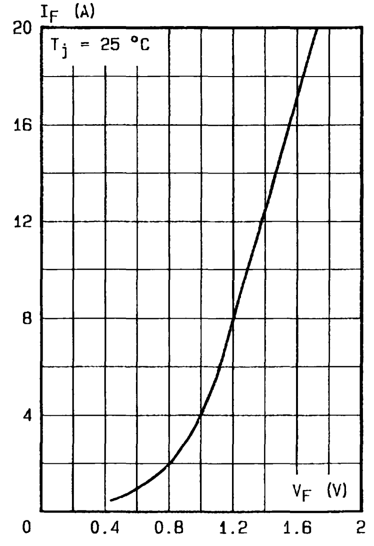


Fig.2 - Forward current versus forward voltage at high level (typical values).

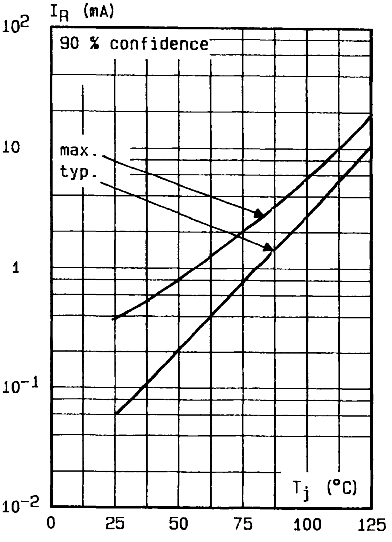


Fig.3 - Reverse current versus junction temperature.

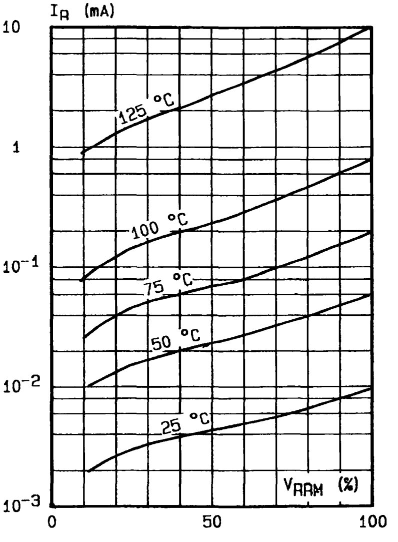


Fig.4 - Reverse current versus V_{RRM} in per cent.

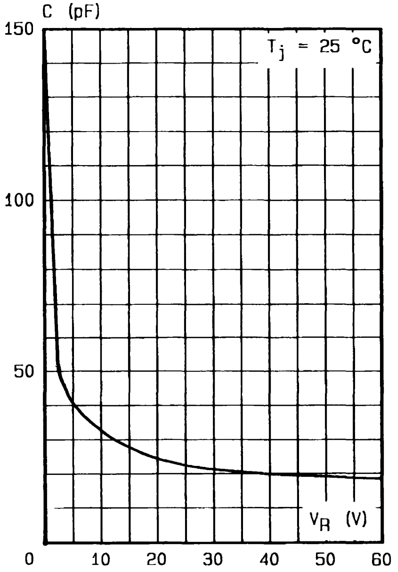


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

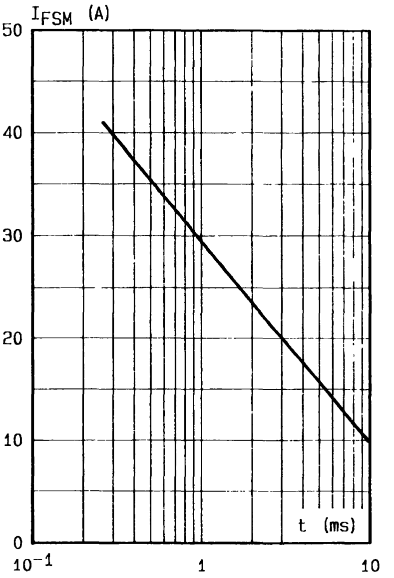


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ⩽ 10 ms.

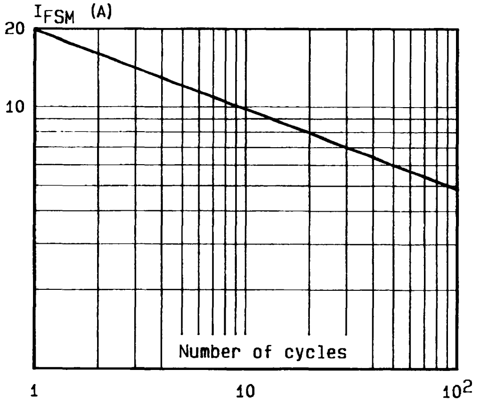
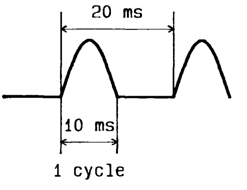


Fig.7 - Surge non repetitive forward current versus number of cycles.



SGS-THOMSON
MICROELECTRONICS

TMM5711

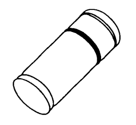
SMALL SIGNAL SCHOTTKY DIODE

DESCRIPTION

Metal to silicon junction diode featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarly intended for high level UHF/VHF detection and pulse application with broad dynamic range.

Matched batches are available on request.



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		70	V
I_F	Forward Continuous Current	$T_l = 25°C$	15	mA
P_{tot}	Power Dissipation	$T_l = 25°C$	430	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\,(j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	70			V
V_F*	$T_{amb} = 25°C$	$I_F = 1mA$			0.41	V
	$T_{amb} = 25°C$	$I_F = 15mA$			1	
I_R*	$T_{amb} = 25°C$	$V_R = 50V$			0.2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1MHz			2	pF
τ	$T_{amb} = 25°C$	$I_F = 5mA$	Krakauer Method			100	ps

* Pulse test $t_p \le 300\mu s$ $\delta < 2\%$
Matched batches available on request Test cnditions (forward voltage and/or capacitance) according to customer specification

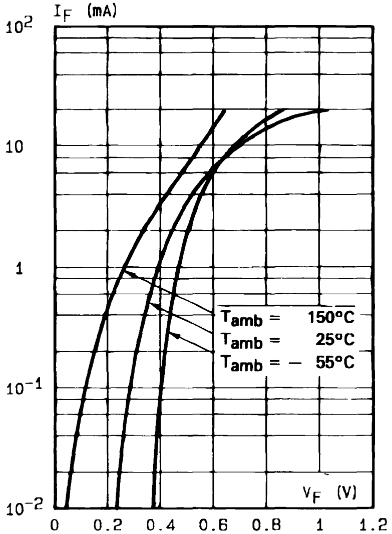


Fig.1 Forward current versus forward voltage at low level (typical values).

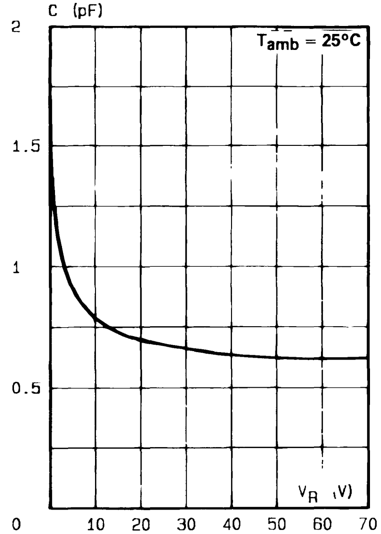


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

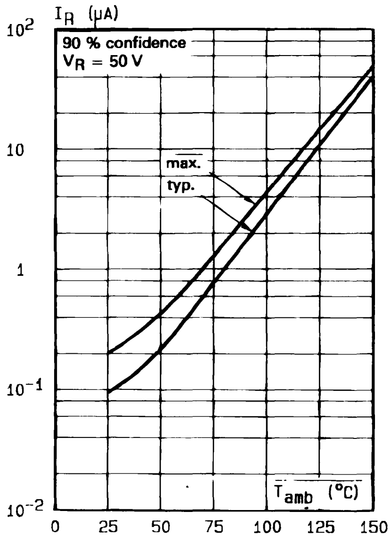


Fig.3 - Reverse current versus ambient temperature.

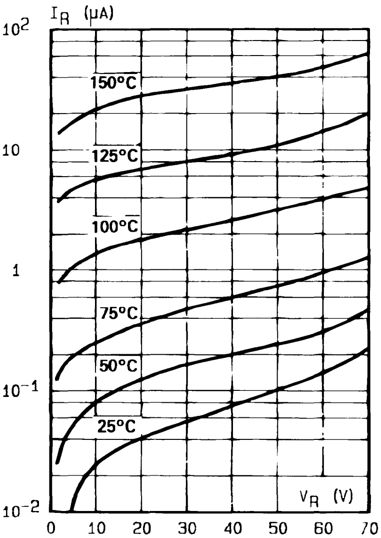
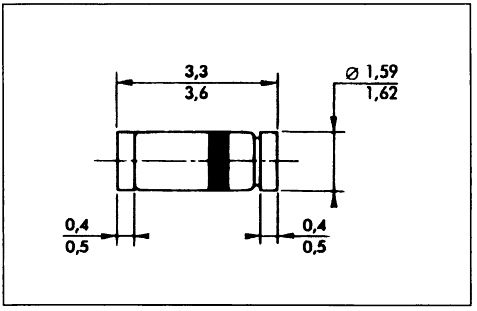


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

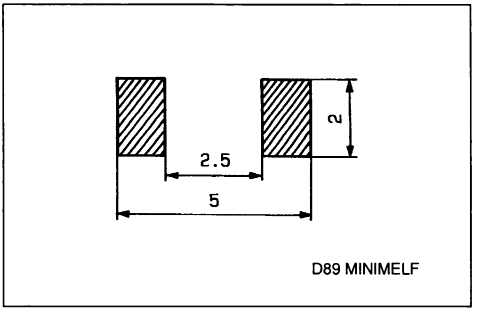
PACKAGE MECHANICAL DATA

MINIMELF Glass

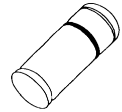


Marking ring at cathode end
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)



SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode featuring high breakdown voltage, low turn-on voltage and ultrafast switching.

Primarly intended for high level UHF/VHF detection and pulse application with broad dynamic range.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	V
I_F	Forward Continuous Current	T_l = 25°C	35	mA
P_{tot}	Power Dissipation	T_l = 25°C	430	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	20			V
V_F *	T_{amb} = 25°C	I_F = 1mA			0.41	V
	T_{amb} = 25°C	I_F = 35mA			1	
I_R *	T_{amb} = 25°C	V_R = 15V			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			1.2	pF
τ	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

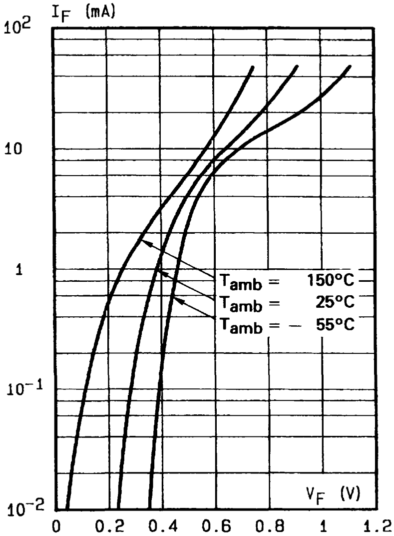


Fig.1 - Forward current versus forward voltage at different temperatures (typical values)

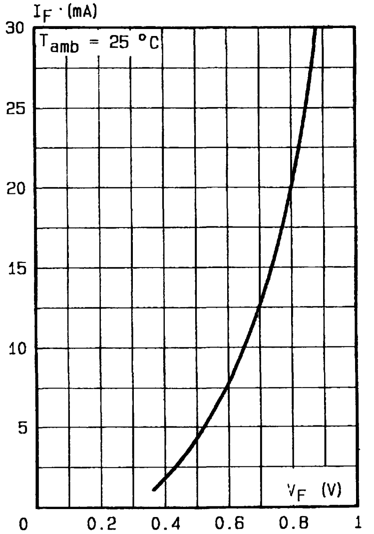


Fig.2 - Forward current versus forward voltage (typical values)

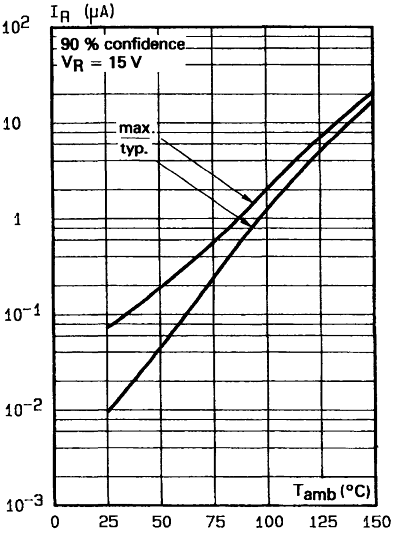


Fig.3 - Reverse current versus ambient temperature.

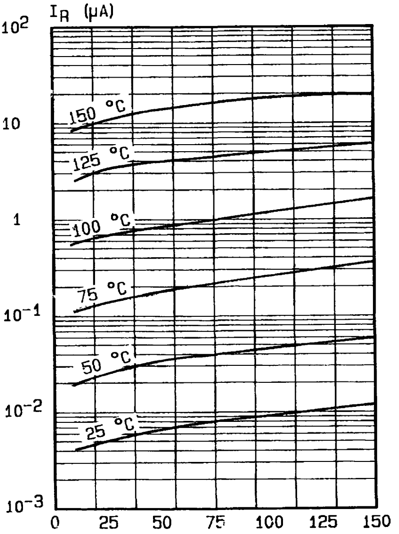


Fig.4 - Reverse current versus continuous reverse voltage (typical values) .

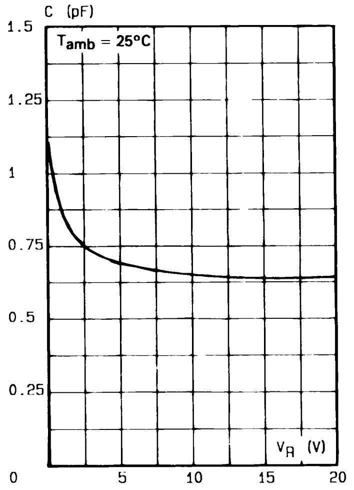
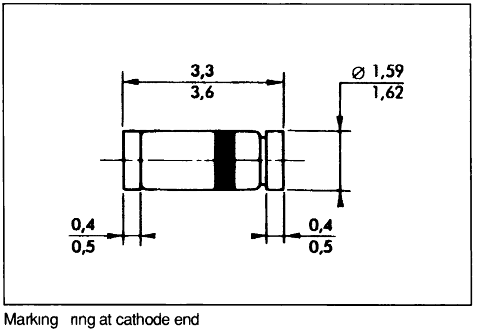


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

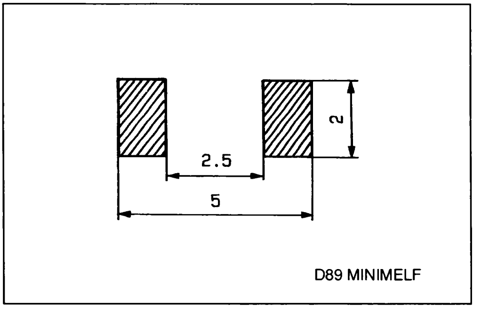
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end
Weight 0.05g

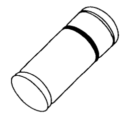
FOOT PRINT DIMENSIONS (millimeter)



SGS-THOMSON
MICROELECTRONICS

TMM 6263

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		60	V
I_F	Forward Continuous Current	T_l = 25°C	15	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq$ 1s	50	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	60			V
V_F*	T_{amb} = 25°C	I_F = 1mA			0.41	V
	T_{amb} = 25°C	I_F = 15mA			1	
I_R*	T_{amb} = 25°C	V_R = 50V			0.2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			2 2	pF
τ	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

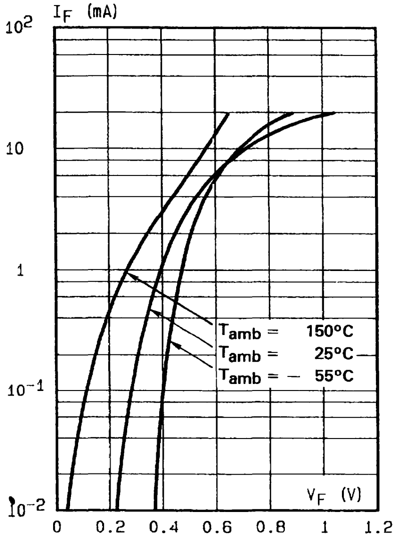


Fig.1 - Forward current versus forward voltage (typical values).

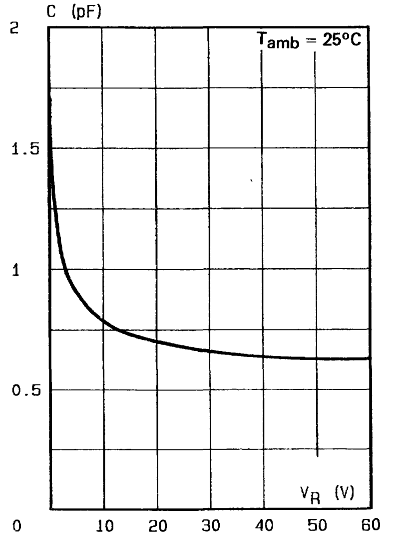


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

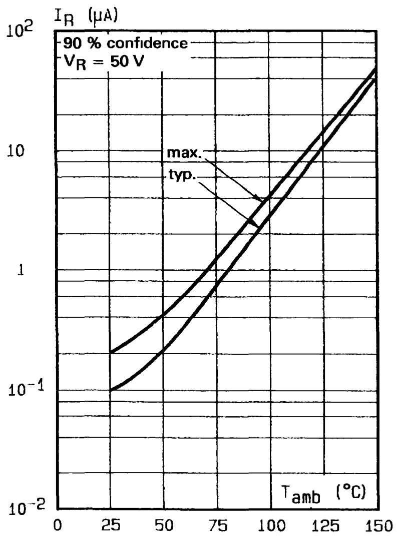


Fig.3 - Reverse current versus ambient temperature.

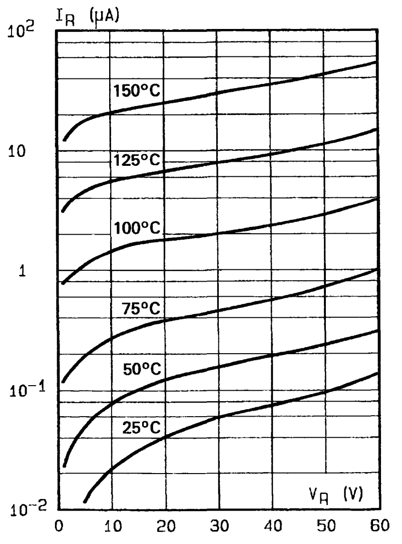
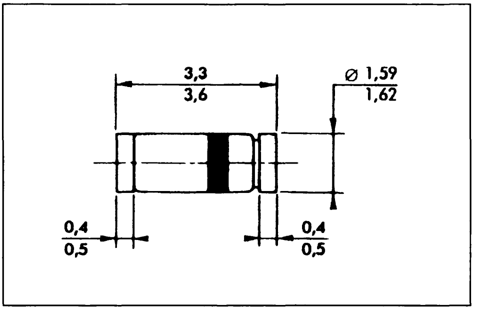


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

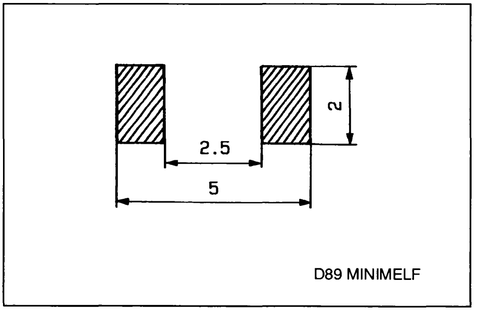
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end
Weight 0 05g

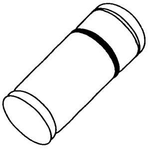
FOOT PRINT DIMENSIONS (millimeter)



SGS-THOMSON MICROELECTRONICS

TMBYV 10-20 → 40

SMALL SIGNAL SCHOTTKY DIODE



MELF
(Glass)

DESCRIPTION

Metal to silicon rectifier diodes in glass case featuring very low forward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(AV)}$	Average Forward Current	T_l = 60°C	1	A
I_{FSM}	Surge non Repetitive Forward Current	T_l = 25°C t_p = 10ms	25 Sinusoidal Pulse	A
		T_l = 25°C t_p = 300µs	50 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

Symbol	Parameter	BYV 10-20	BYV 10-30	BYV 10-40	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	40	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	110	°C/W

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	T_j = 25°C	$V_R = V_{RRM}$			0.5	mA
	T_j = 100°C				10	
V_F*	I_F = 1A	T_j = 25°C			0.55	V
	I_F = 3A				0.85	

* * Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

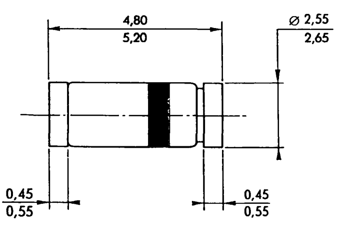
DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C	$V_R = 0$		220		pF

Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.
Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is required to charge the depletion capacitance of the diode.
This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifer consists of an ideal diode in parallel with a variable capacitance equal to the junction capacitance (see fig. 5 page 4/4).

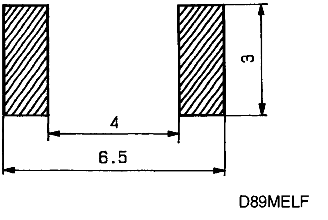
PACKAGE MECHANICAL DATA

MELF (Glass)



Cooling method by convection and conduction
Marking ring at cathode end
Weight 0 15g

FOOT PRINT DIMENSIONS (Millimeter)



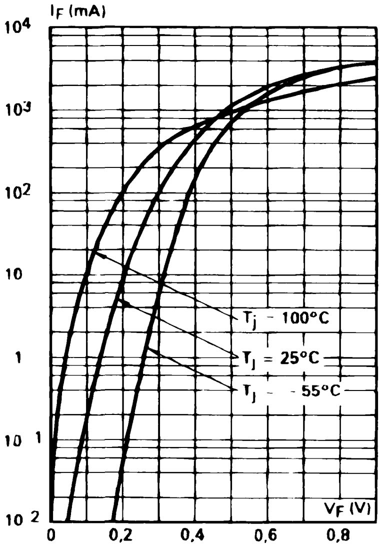


Fig.1 Forward current versus forward voltage at low level (typical values)

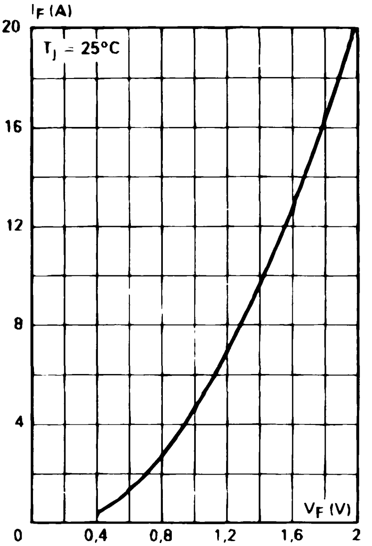


Fig.2 Forward current versus forward voltage at high level (typical values)

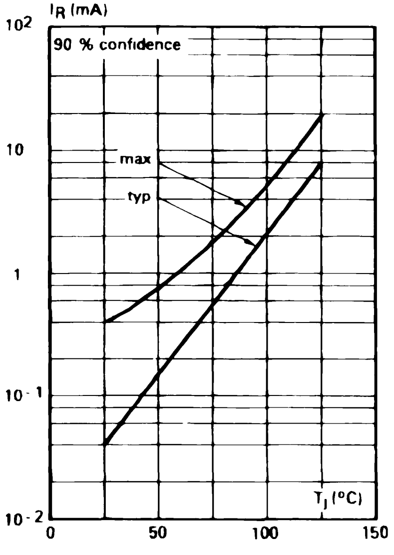


Fig 3 - Reverse current versus junction temperature

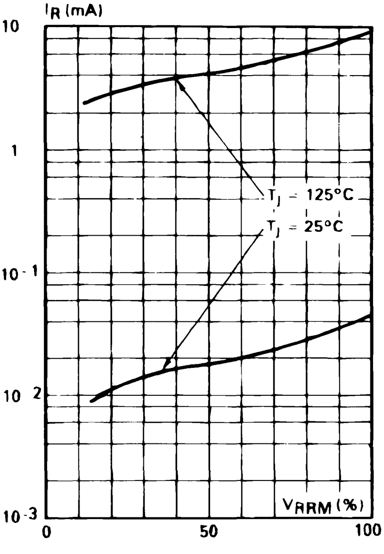


Fig.4 Reverse current versus V_{RRM} in per cent

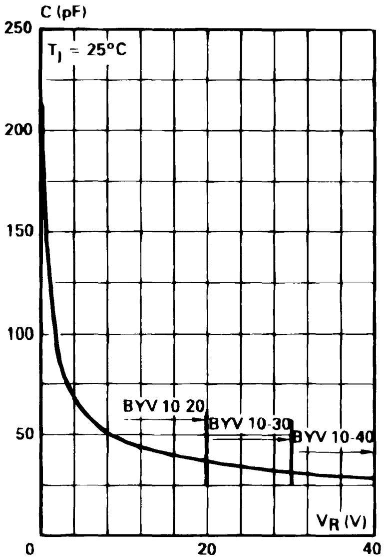


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values)

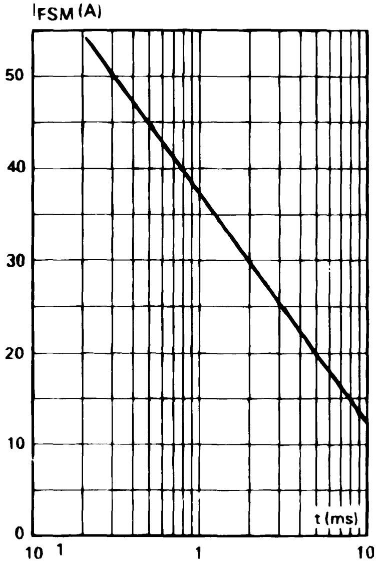


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ≤ 10 ms

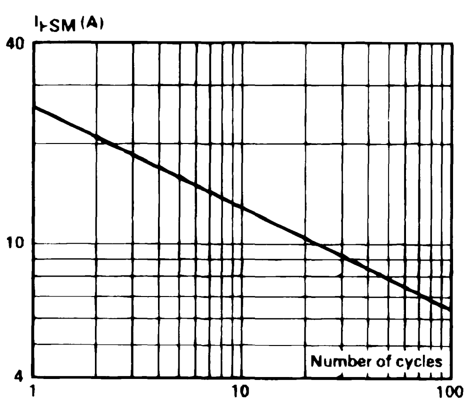
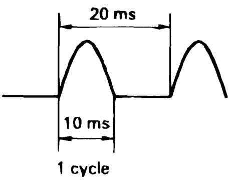
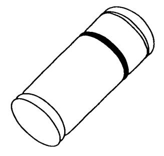


Fig.7 Surge non repetitive forward current versus number of cycles.



SMALL SIGNAL SCHOTTKY DIODE



MELF
(Glass)

DESCRIPTION

Metal to silicon rectifier diode in glass case featuring very low forward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	V
$I_{F(AV)}$	Average Forward Current	T_l = 60°C	1	A
I_{FSM}	Surge non Repetitive Forward Current	T_l = 25°C t_p = 10ms	25 Sinusoidal Pulse	A
		T_l = 25°C t_p = 300μs	50 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Lead Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	110	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	T_j = 25°C	$V_R = V_{RRM}$			0 3	mA
	T_j = 100°C				10	
V_F*	I_F = 1A	T_j = 25°C			0 45	V
	I_F = 3A				0 75	

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0		330		pF

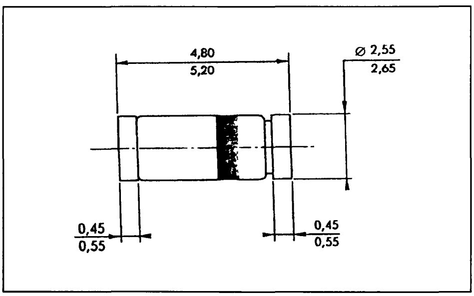
Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.

Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is required to charge the depletion capacitance of the diode.

This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifier consists of an ideal diode in parallel with a variable cpacitance equal to the junction capacitance (see fig. 5 page 4/4).

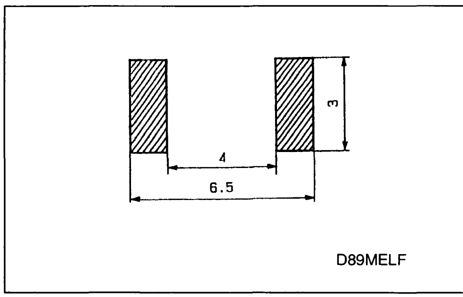
PACKAGE MECHANICAL DATA

MELF Glass



Marking . ring at cathode end
Weight 0 15g

FOOT PRINT DIMENSIONS (millimeter)



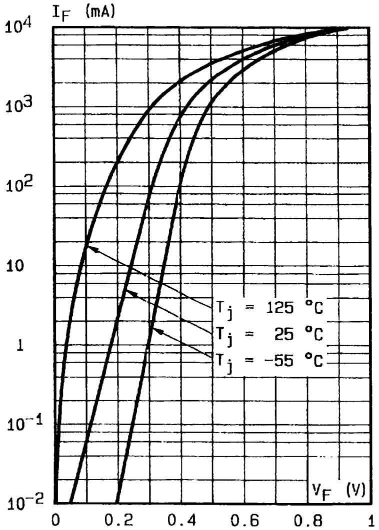


Fig.1 - Forward current versus forward voltage at low level (typical values).

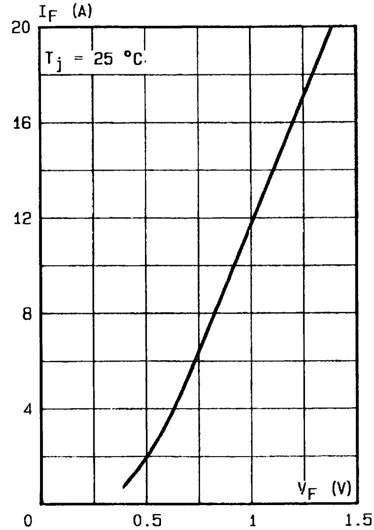


Fig.2 - Forward current versus forward voltage at high level (typical values).

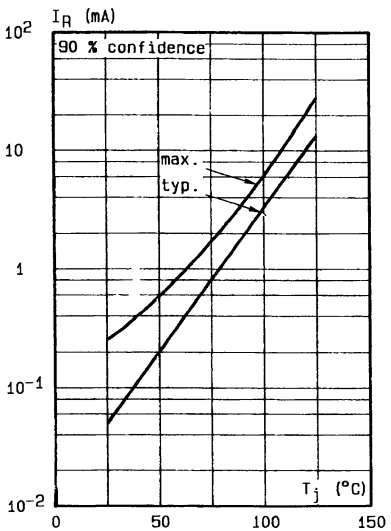


Fig.3 - Reverse current versus junction temperature.

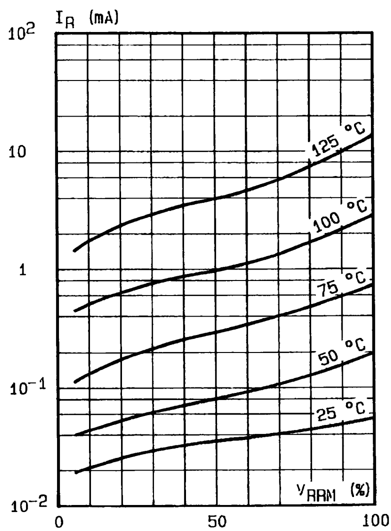


Fig.4 - Reverse current versus V_{RRM} in per cent.

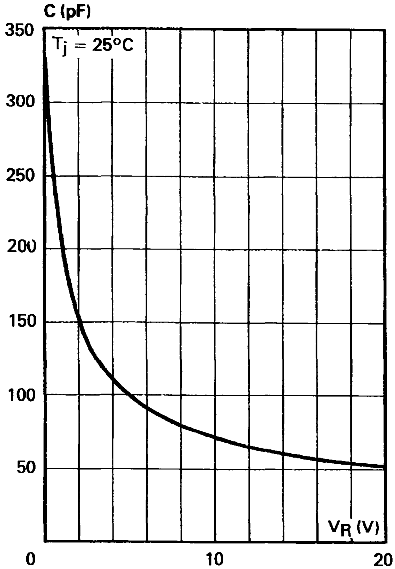


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values)

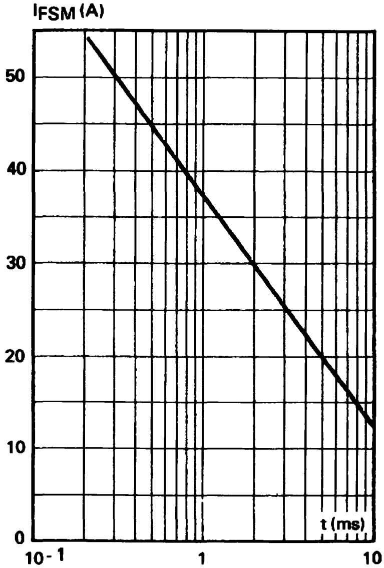
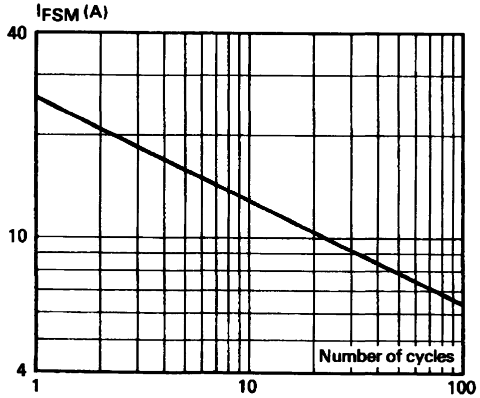


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ≤10 ms.



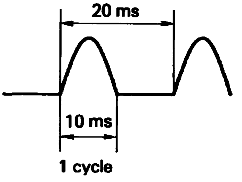
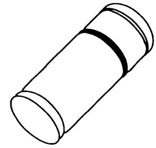


Fig.7 - Surge non repetitive forward current versus number of cycles.

SMALL SIGNAL SCHOTTKY DIODE



MELF
(Glass)

DESCRIPTION

Metal to silicon rectifier diode in glass case featuring very low forward voltage drop and fast recovery time, intended for low voltage switching mode power supply, polarity protection and high frequency circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		60	V
$I_{F(AV)}$	Average Forward Current	$T_l = 25°C$	1	A
I_{FSM}	Surge non Repetitive Forward Current	$T_l = 25°C$ $t_p = 10ms$	20 Sinusoidal Pulse	A
		$T_l = 25°C$ $t_p = 300µs$	40 Rectangular Pulse	
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	110	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	T_j = 25°C	$V_R = V_{RRM}$			0.5	mA
	T_j = 100°C				10	
V_F*	I_F = 1A	T_j = 25°C			0.7	V
	I_F = 3A				1	

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

DYNAMIC CHARACTERISTICS

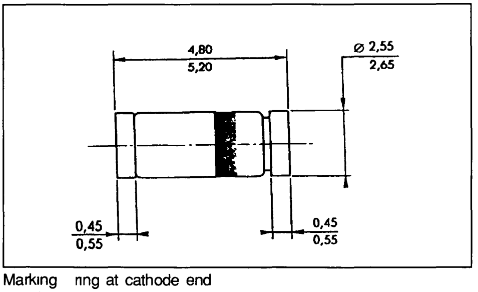
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
C	T_j = 25°C V_R = 0		150		pF
	T_j = 25°C V_R = 5V		40		

Forward current flow in a schottky rectifier is due to majority carrier conduction. So reverse recovery is not affected by stored charge as in conventional PN junction diodes.
Nevertheless, when the device switches from forward biased condition to reverse blocking state, current is required to charge the depletion capacitance of the diode.

This current depends only of diode capacitance and external circuit impedance. Satisfactory circuit behaviour analysis may be performed assuming that schottky rectifier consits of an ideal diode in parallel with a variable capacitance equal to the junction capacitance (see fig. 5 page 4/4).

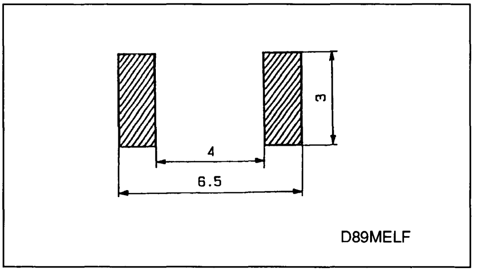
PACKAGE MECHANICAL DATA

MELF Glass



Marking ring at cathode end
Weight 0.15g

FOOT PRINT DIMENSIONS (millimeter)



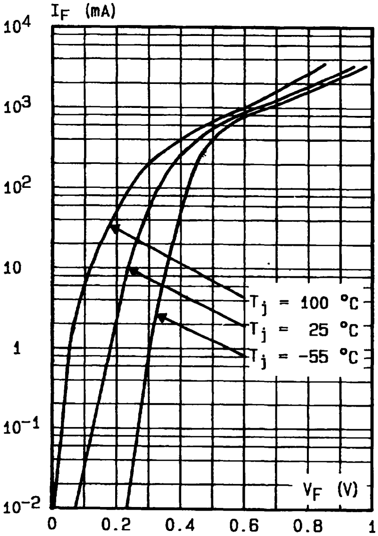


Fig.1 - Forward current versus forward voltage at low level (typical values).

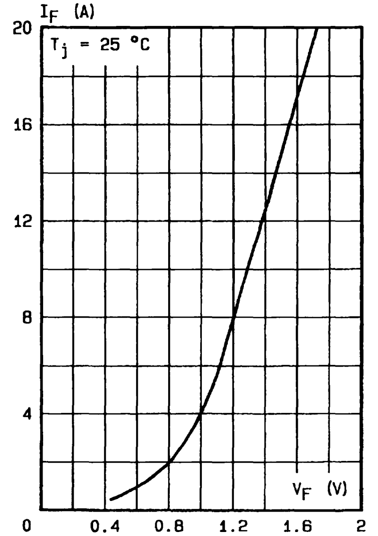


Fig.2 - Forward current versus forward voltage at high level (typical values).

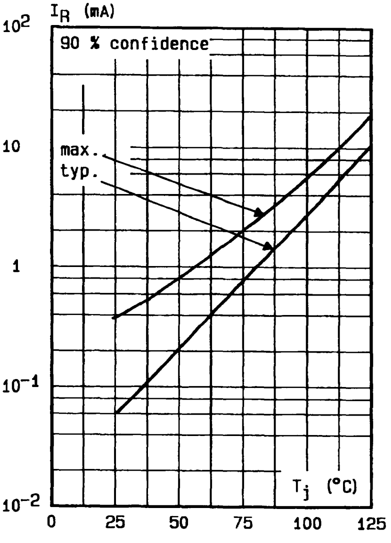


Fig.3 - Reverse current versus junction temperature.

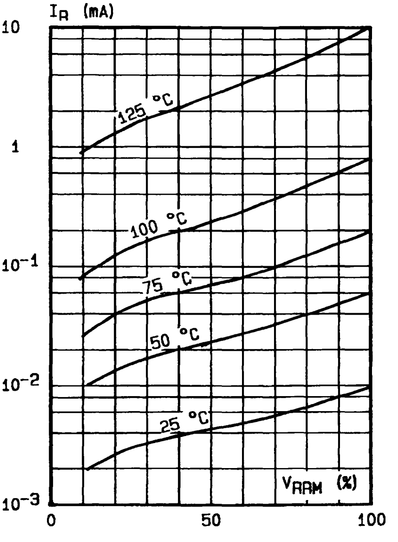


Fig.4 - Reverse current versus V_{RRM} in per cent.

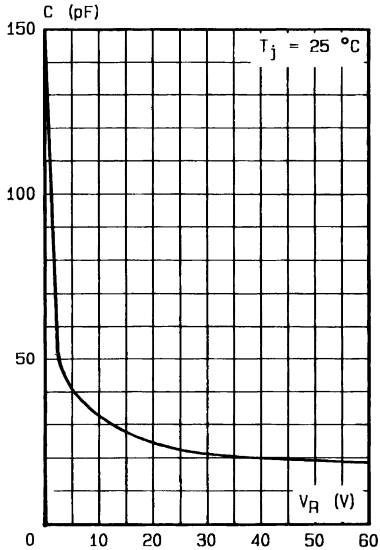


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

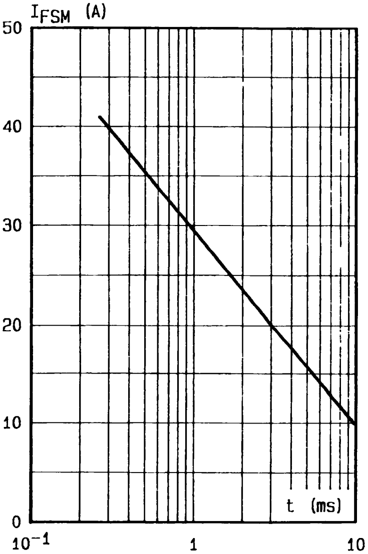


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ⩽ 10 ms.

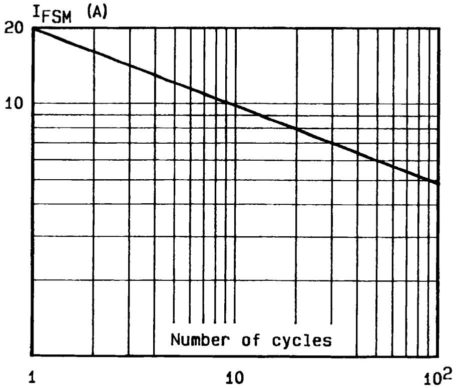
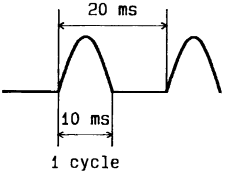


Fig.7 - Surge non repetitive forward current versus number of cycles.



SGS-THOMSON
MICROELECTRONICS

TMMBAR 10
TMMBAR 11

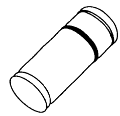
SMALL SIGNAL SCHOTTKY DIODES

DESCRIPTION

Metal to silicon junction diodes featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

Matched batches are available on request, (TMMBAR11 only).



MINIMELF
(Glass)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		TMMBAR 10	TMMBAR 11	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	15	V
I_F	Forward Continuous Current	T_l = 25°C	35	20	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	100		mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200		°C
T_L	Maximum Temperature for Soldering during 15s		260		°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	TMMBAR 10	20			V
	T_{amb} = 25°C	I_R = 10µA	TMMBAR 11	15			
V_F *	T_{amb} = 25°C	I_F = 1mA				0.41	V
	T_{amb} = 25°C	I_F = 35mA	TMMBAR 10			1	
	T_{amb} = 25°C	I_F = 20mA	TMMBAR 11			1	
I_R *	T_{amb} = 25°C	V_R = 15V	TMMBAR 10			0.1	µA
	T_{amb} = 25°C	V_R = 8V	TMMBAR 11			0.1	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			1.2	pF
τ	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$.
Matched batches available on request. Test conditions (forward voltage and/or capacitance) according to customer specification.

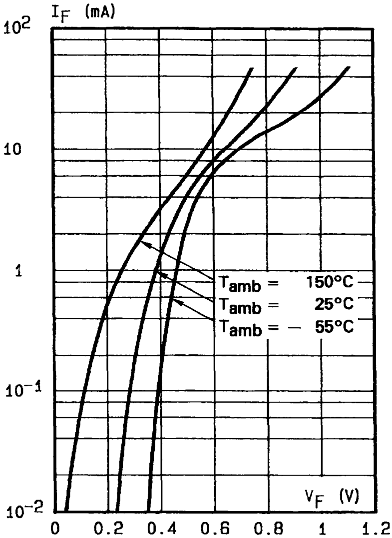


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

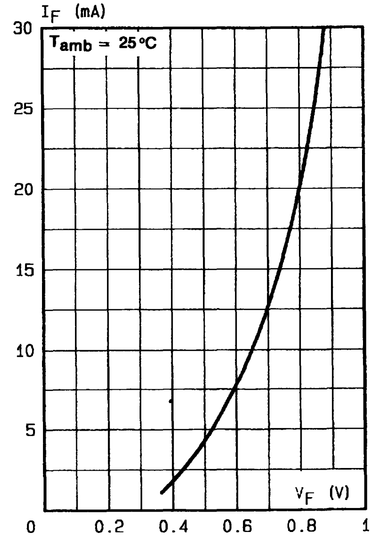


Fig.2 - Forward current versus forward voltage (typical values).

Fig.3a - BAR 10

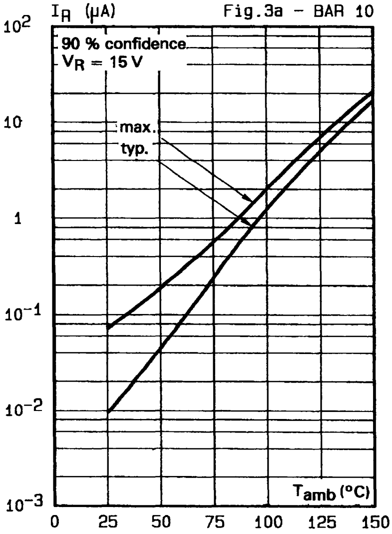


Fig.3b - BAR 11

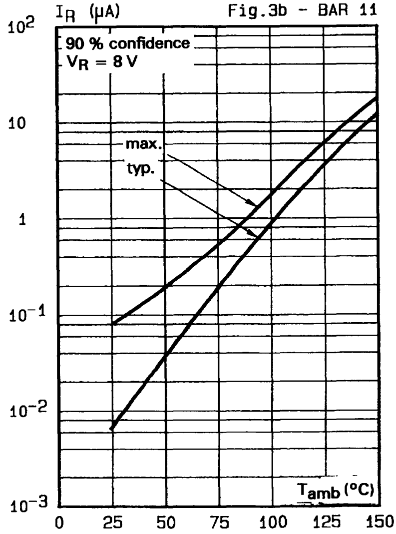


Fig.3a/3b - Reverse current versus ambient temperature.

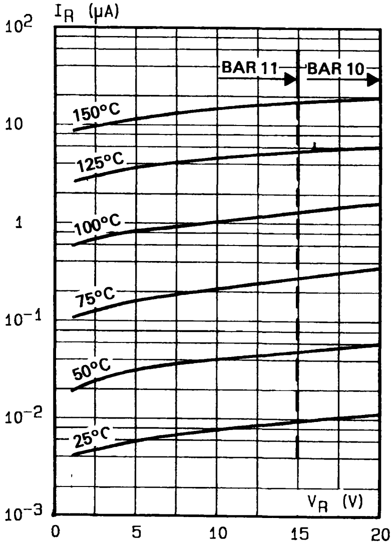


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

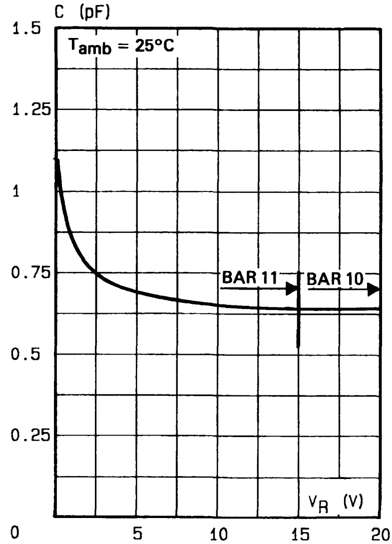
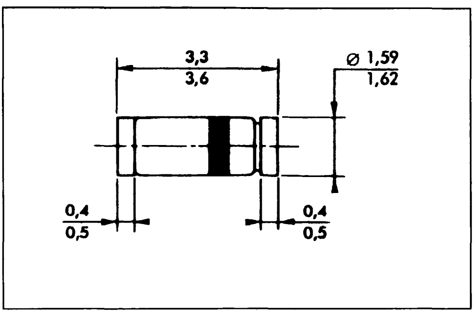


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

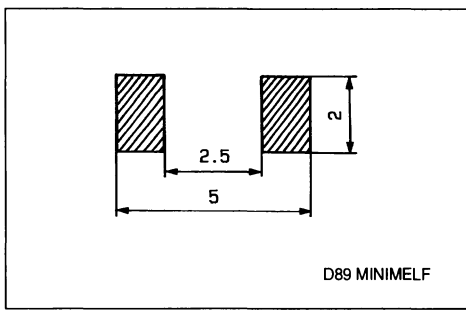
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking : ring at cathode end
Weight · 0 05g

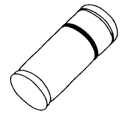
FOOT PRINT DIMENSIONS (millimeter)



SGS-THOMSON MICROELECTRONICS

TMMBAR 19

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode primarly intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		4	V
I_F	Forward Continuous Current	$T_l = 25°C$	30	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$		4			V
V_F (1)	$T_{amb} = 25°C$	$I_F = 10mA$				0.6	V
I_R (1)	$T_{amb} = 25°C$	$V_R = 3V$				0.25	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 1V$	f = 1MHz			1	pF
F (2)	$T_{amb} = 25°C$	f = 1GHz			6		dB

(1) Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
(2) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1 5dB

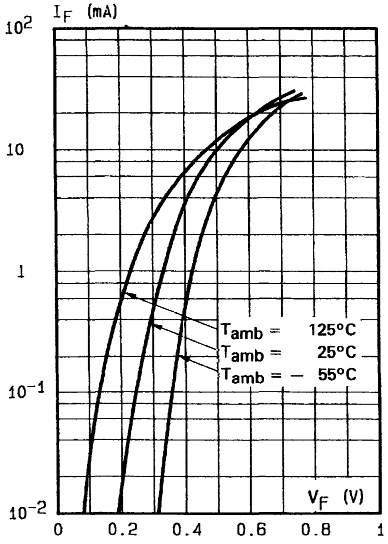


Fig.1 - Forward current versus forward voltage (typical values).

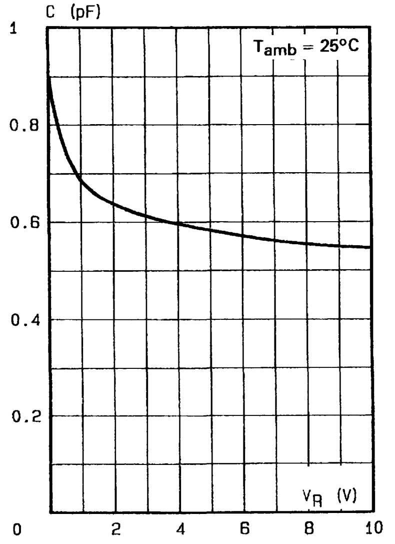


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

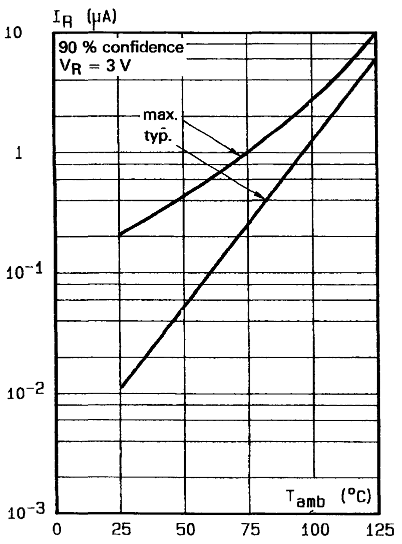


Fig.3 - Reverse current versus ambient temperature.

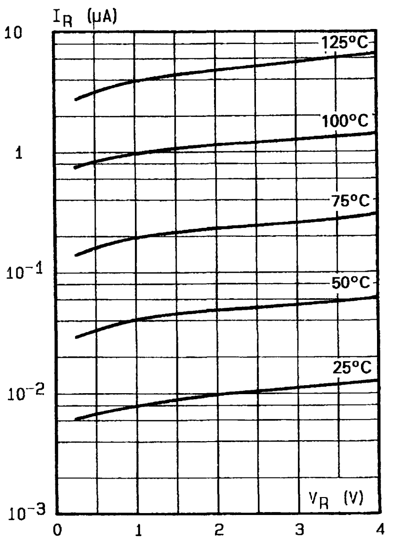
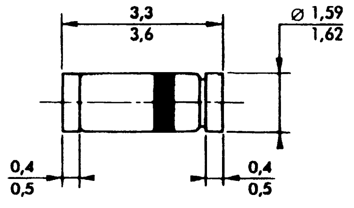


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

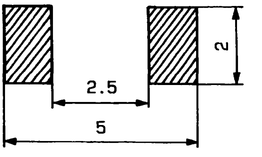
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)

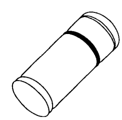


D89 MINIMELF

SGS-THOMSON
MICROELECTRONICS

TMMBAR 28

SMALL SIGNAL SCHOTTKY DIODE


MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode featuring high breakdown, low turn-on voltage and ultrafast switching.

Primarily intended for high level UHF/VHF detection and pulse application with broad dynamic range.

Matched batches are available on request.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		70	V
I_F	Forward Continuous Current	T_l = 25°C	15	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	50	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 200	°C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	70			V
V_F*	T_{amb} = 25°C	I_F = 1mA			0.41	V
	T_{amb} = 25°C	I_F = 15mA			1	
I_R*	T_{amb} = 25°C	V_R = 50V			0.2	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 0V	f = 1MHz			2	pF
τ	T_{amb} = 25°C	I_F = 5mA	Krakauer Method			100	ps

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

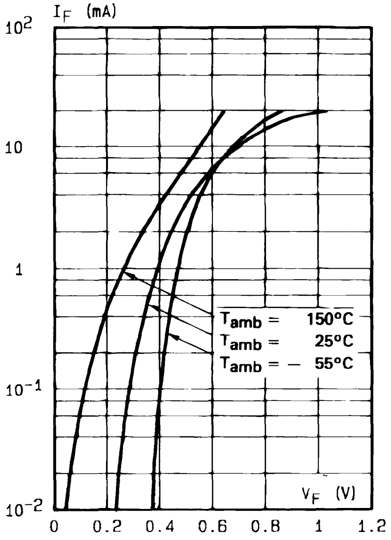


Fig.1 Forward current versus forward voltage at low level (typical values).

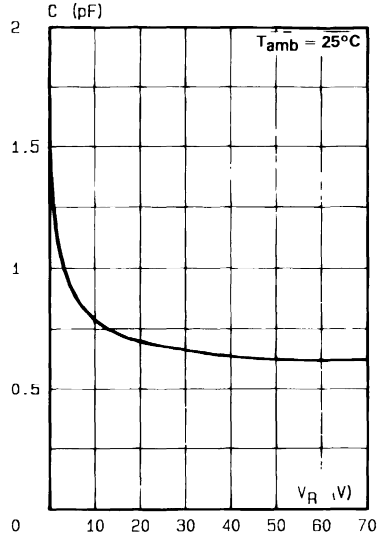


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

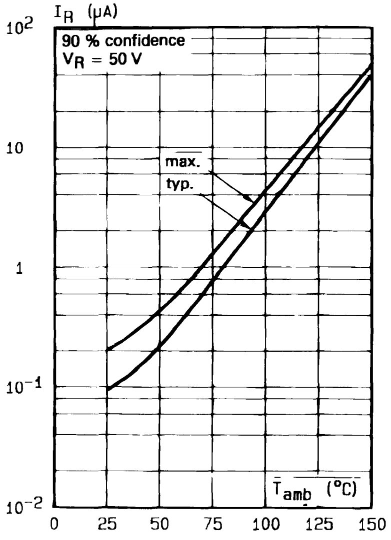


Fig.3 - Reverse current versus ambient temperature.

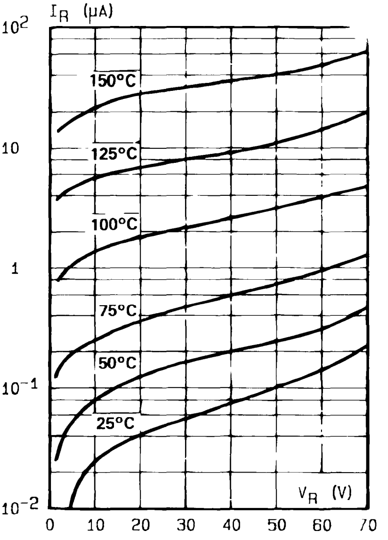
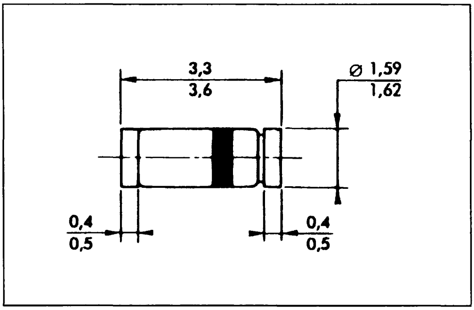


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

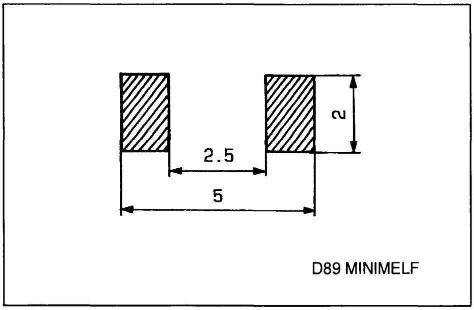
PACKAGE MECHANICAL DATA

MINIMELF Glass

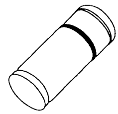


Marking ring at cathode end
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)



SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode primarly intended for UHF mixers and ultrafast switching applications.

Matched batches are available on request.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		10	V
I_F	Forward Continuous Current	$T_l = 25°C$	30	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 10\mu A$	10			V
V_F (1)	$T_{amb} = 25°C$	$I_F = 1mA$			0.4	V
	$T_{amb} = 25°C$	$I_F = 20mA$			1	
I_R (1)	$T_{amb} = 25°C$	$V_R = 5V$			0.1	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	f = 1GHz			1 2	pF
τ	$T_{amb} = 25°C$	$I_F = 20mA$	Krakauer Method			100	ps
F (2)	$T_{amb} = 25°C$	f = 1GHz			6		dB

(1) Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
(2) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1 5dB

Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification

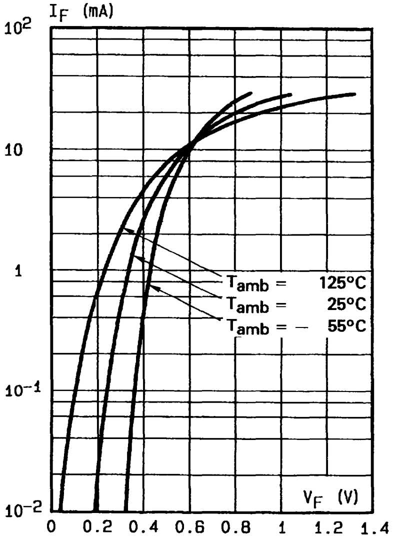


Fig.1 - Forward current versus forward voltage at low level (typical values).

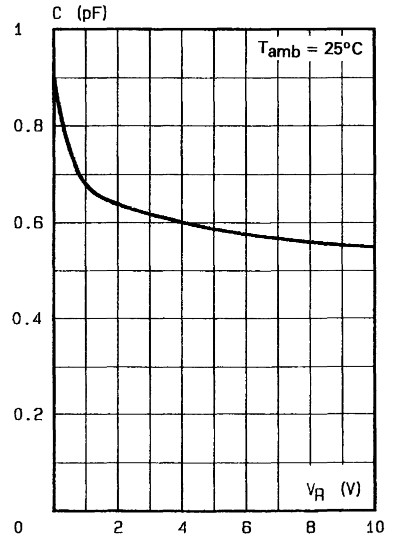


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

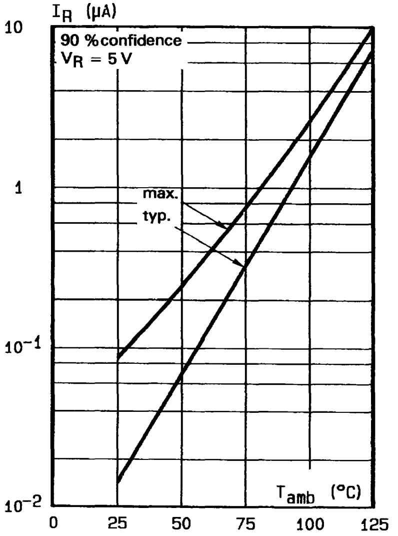


Fig.3 - Reverse current versus ambient temperature.

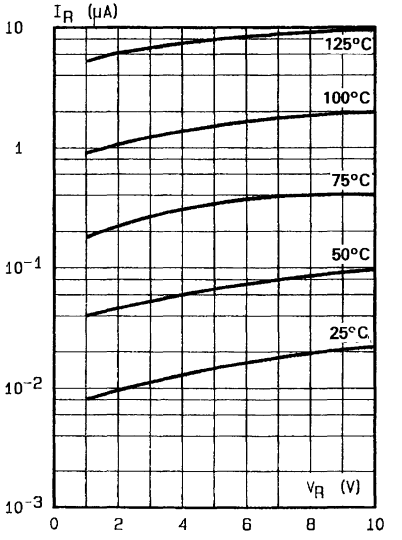
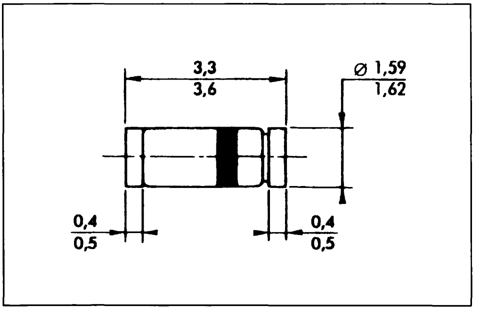


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

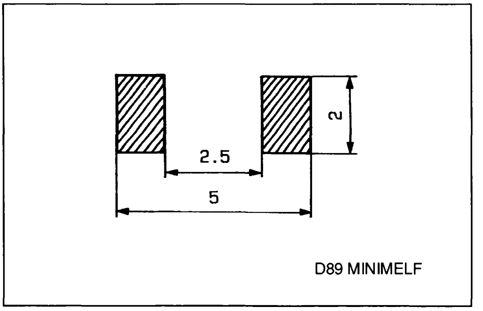
PACKAGE MECHANICHAL DATA

MINIMELF Glass

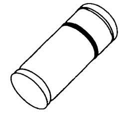


Marking ring at cathode end
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)



SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		5	V
I_F	Forward Continuous Current	$T_l = 25°C$	30	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_{amb} = 25°C$	$I_R = 100\mu A$	5			V
V_F (1)	$T_{amb} = 25°C$	$I_F = 10mA$			0.55	V
I_R (1)	$T_{amb} = 25°C$	$V_R = 1V$			0.05	µA

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_{amb} = 25°C$	$V_R = 0V$	$f = 1MHz$			1	pF
Q_S (2)	$T_{amb} = 25°C$	$I_F = 10mA$				3	pC
F (3)	$T_{amb} = 25°C$	$f = 1GHz$			6	7	dB

(1) Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$.
(2) Measured on B-line Electronics QS-3 stored charge meter.
(3) Noise figure test

- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW

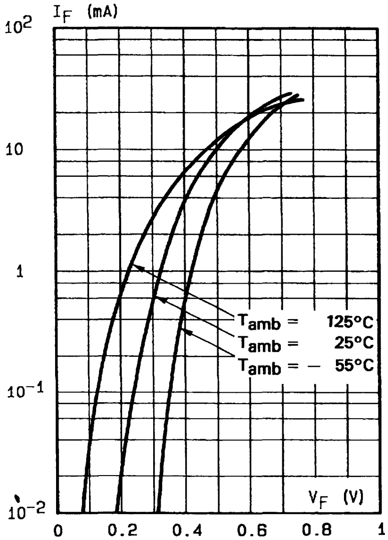


Fig.1 - Forward current versus forward voltage (typical values).

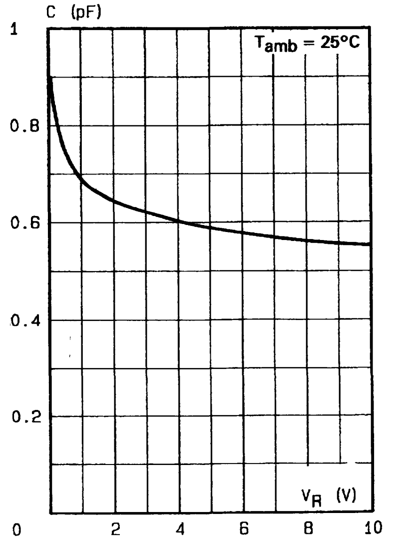


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

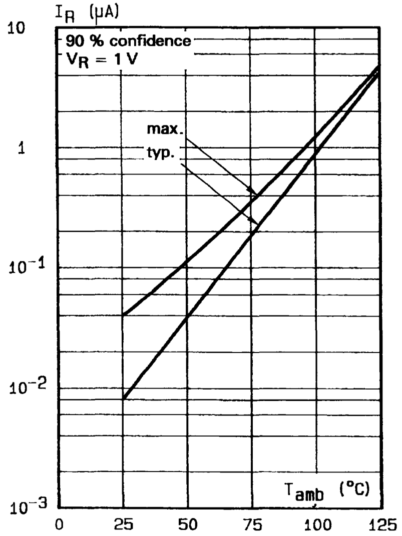


Fig.3 - Reverse current versus ambient temperature.

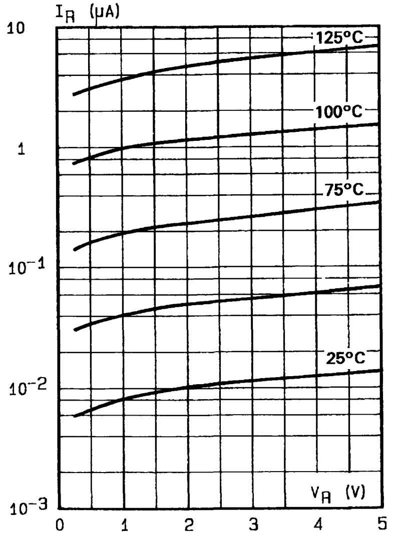
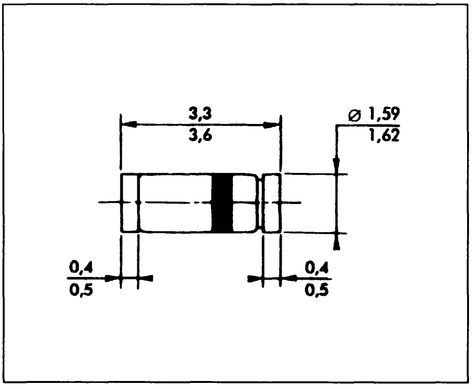


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

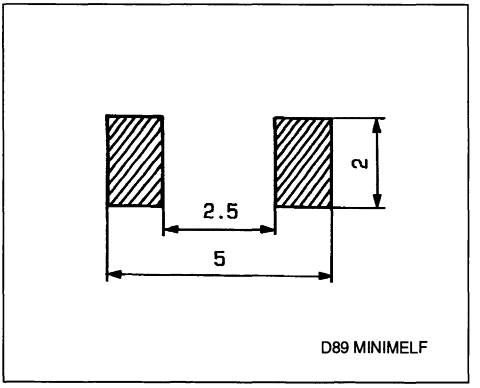
PACKAGE MECHANICAL DATA

MINIMELF Glass



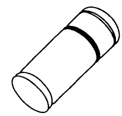
Marking · ring at cathode end.
Weight : 0.05g

FOOT PRINT DIMENSIONS (millimeter)



TMMBAT 41

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

General purpose metal to silicon diode featuring very low turn-on voltage and fast switching.

This device has integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		100	V
I_F	Forward Continuous Current	$T_l = 25°C$	100	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1s$ $\delta \leq 0.5$	350	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$	750	mA
P_{tot}	Power Dissipation	$T_l = 95°C$	100	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_j = 25°C$	$I_R = 100\mu A$	100			V
V_F*	$T_j = 25°C$	$I_F = 1mA$		0.4	0.45	V
	$T_j = 25°C$	$I_F = 200mA$			1	
I_R*	$T_j = 25°C$	$V_R = 50V$			0.1	µA
	$T_j = 100°C$				20	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_j = 25°C$	$V_R = 1V$	$f = 1MHz$		2		pF

* Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

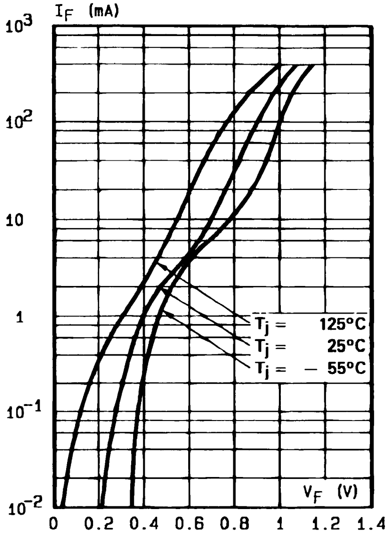


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

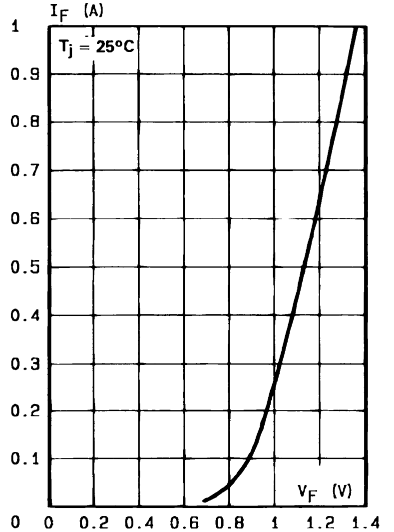


Fig.2 Forward current versus forward voltage (typical values).

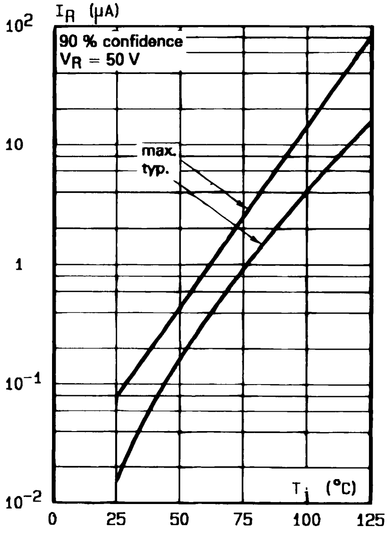


Fig.3 - Reverse current versus junction temperature.

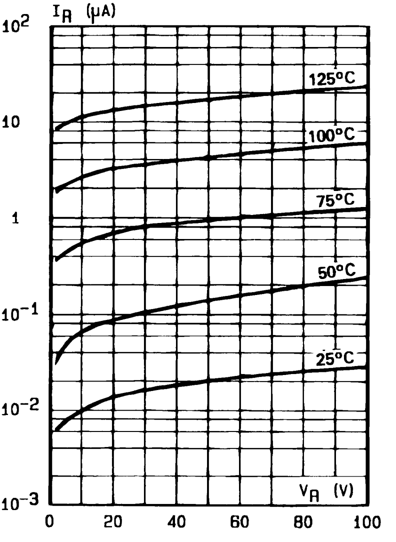


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

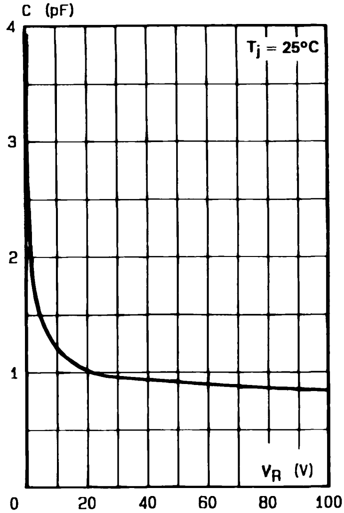
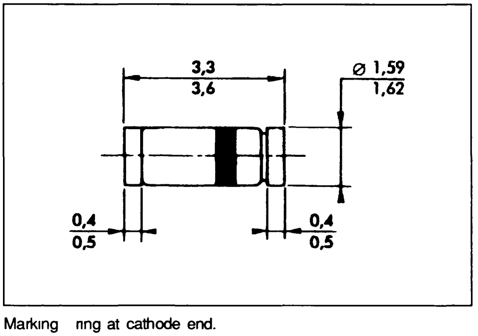


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

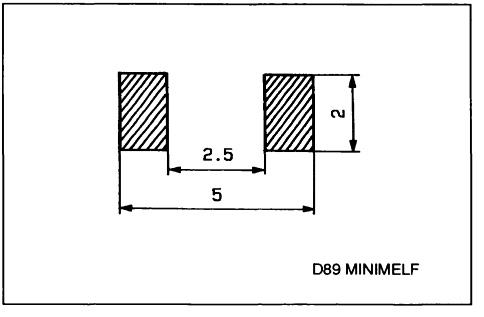
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end.
Weight : 0.05g

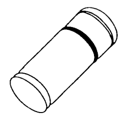
FOOT PRINT DIMENSIONS (millimeter)



SGS-THOMSON MICROELECTRONICS

TMMBAT 42
TMMBAT 43

SMALL SIGNAL SCHOTTKY DIODES



MINIMELF
(Glass)

DESCRIPTION

General purpose metal to silicon diodes featuring very low turn-on voltage fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		30	V
I_F	Forward Continuous Current	$T_l = 25°C$	200	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1s$ $\delta \leq 0.5$	500	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$	4	A
P_{tot}	Power Dissipation	$T_l = 65°C$	200	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_j = 25°C	I_R = 100µA		30			V
V_F*	T_j = 25°C	I_F = 200mA	All Types			1	V
	T_j = 25°C	I_F = 10mA	BAT 42			0.4	
	T_j = 25°C	I_F = 50mA				0.65	
	T_j = 25°C	I_F = 2mA	BAT 43	0.26		0.33	
	T_j = 25°C	I_F = 15mA				0 45	
I_R*	T_j = 25°C		V_R = 25V			0.5	µA
	T_j = 100°C					100	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
C	T_j = 25°C V_R = 1V f = 1MHz		7		pF
t_{rr}	T_j = 25°C I_F = 10mA I_R = 10mA i_{rr} = 1mA R_L = 100Ω			5	ns
η	T_j = 25°C R_L = 15KΩ C_L = 300pF f = 45MHz V_i = 2V	80			%

* Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$

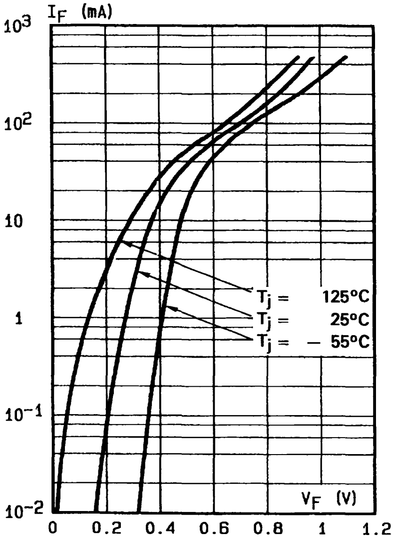


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

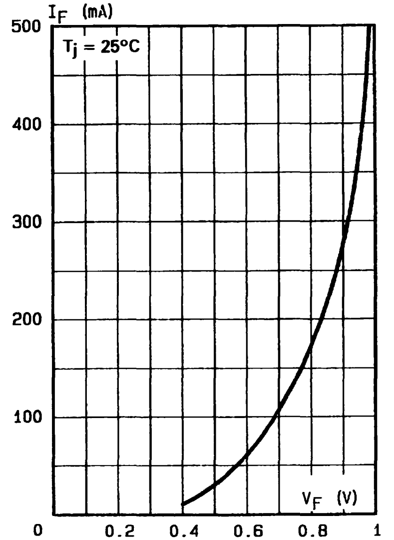


Fig.2 - Forward current versus forward voltage (typical values).

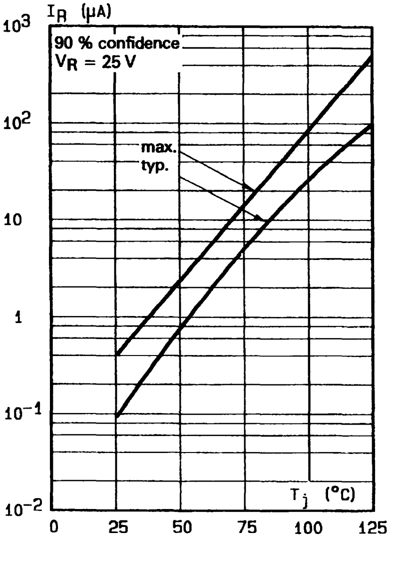


Fig.3 - Reverse current versus junction temperature.

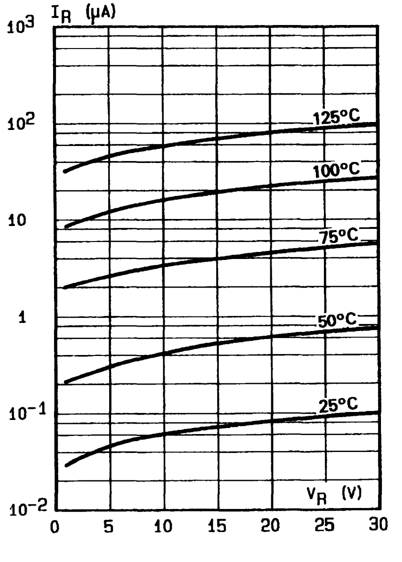


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

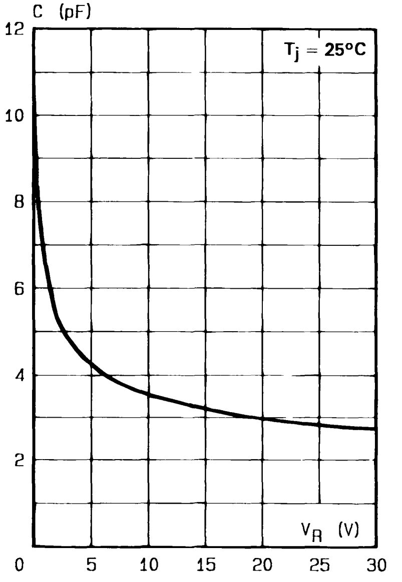
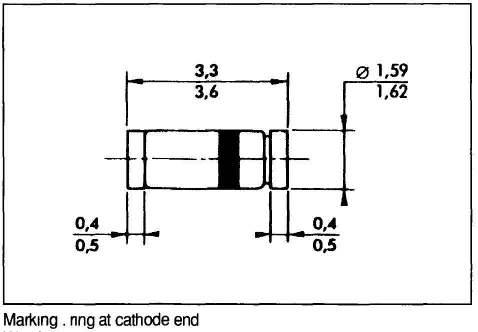


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

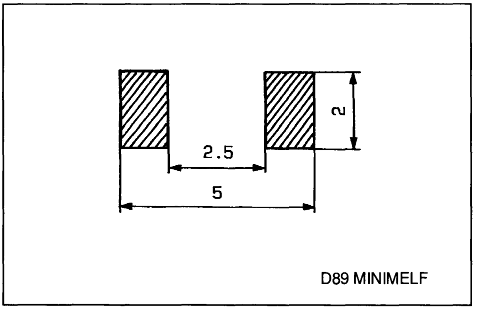
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking . ring at cathode end
Weight 0 05g

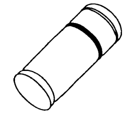
FOOT PRINT DIMENSIONS (millimeter)



SGS-THOMSON
MICROELECTRONICS

TMMBAT 45

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

Metal to silicon junction diode primarily intented for UHF mixers and ultrafast switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		15	V
I_F	Forward Continuous Current	$T_l = 25°C$	30	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p \leq 1s$	60	mA
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	400	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_{amb} = 25°C	I_R = 10µA	15			V
V_F (1)	T_{amb} = 25°C	I_F = 1mA			0.38	V
	T_{amb} = 25°C	I_F = 10mA			0.5	
	T_{amb} = 25°C	I_F = 30mA			1	
I_R (1)	T_{amb} = 25°C	V_R = 6V			0.1	µA

DYNAMIC CHARACTERISTICS

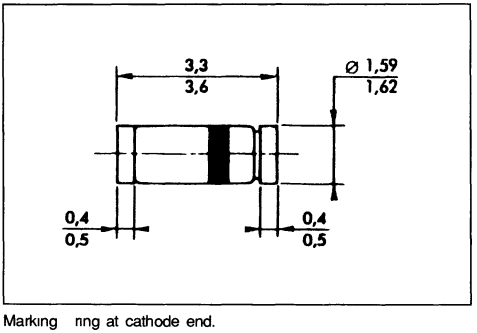
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_{amb} = 25°C	V_R = 1V	f = 1MHz			1.1	pF
τ	T_{amb} = 25°C	I_F = 20mA	Krakauer Method			100	ps
F (2)	T_{amb} = 25°C	f = 1GHz			6	7	dB

(1) Pulse test $t_p \leq 300\mu s$ $\delta < 2\%$
(2) Noise figure test
- diode is inserted in a tuned stripline circuit
- local oscillator frequency 1GHz
- local oscillator power 1mW
- intermediate frequency amplifier, tuned on 30MHz, has a noise figure 1.5dB

Matched batches available on request Test conditions (forward voltage and/or capacitance) according to customer specification.

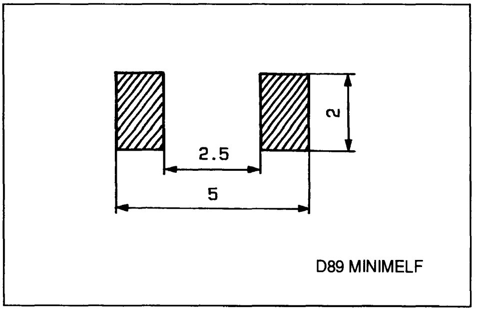
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end.
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)



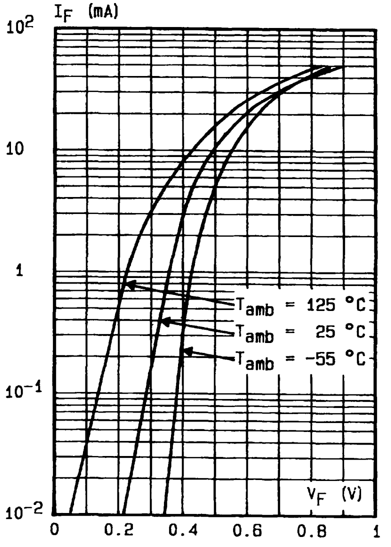


Fig.1 - Forward current versus forward voltage (typical values).

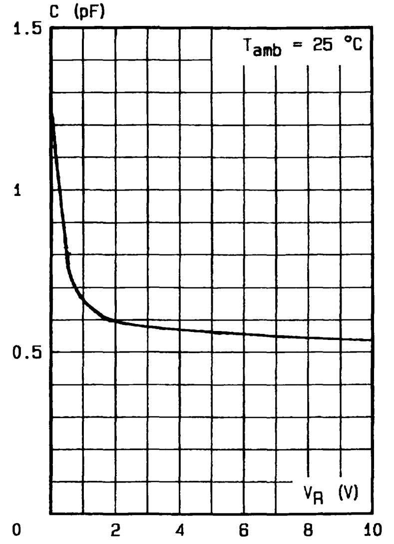


Fig.2 - Capacitance C versus reverse applied voltage V_R (typical values).

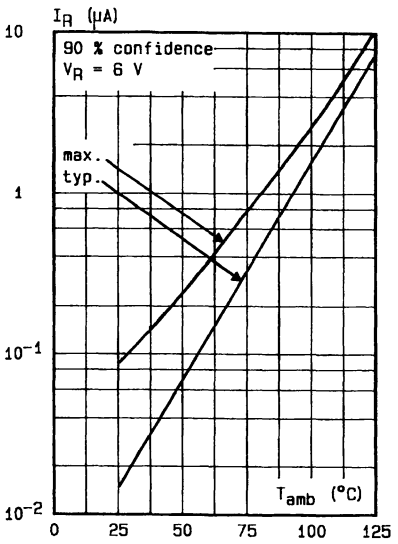


Fig.3 - Reverse current versus ambient temperature.

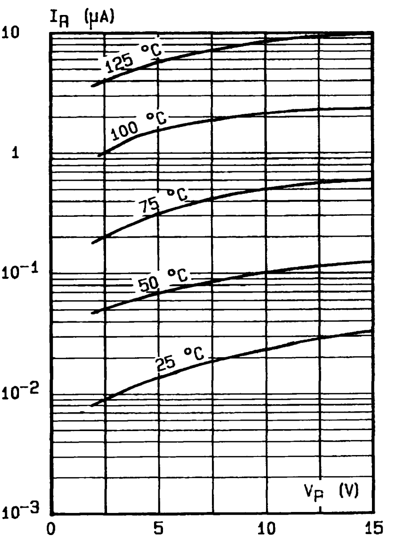
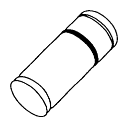


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

SGS-THOMSON MICROELECTRONICS

TMMBAT 46

SMALL SIGNAL SCHOTTKY DIODE



MINIMELF
(Glass)

DESCRIPTION

General purpose, metal to silicon diode featuring high breakdown voltage low turn-on voltage.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		100	V
I_F	Forward Continuous Current	$T_l = 25°C$	150	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1s$ $\delta \leq 0.5$	350	mA
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$	750	mA
P_{tot}	Power Dissipation	$T_l = 80°C$	150	mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)}$	$T_j = 25°C$	$I_R = 100\mu A$	100			V
V_F*	$T_j = 25°C$	$I_F = 0.1mA$			0.25	V
	$T_j = 25°C$	$I_F = 10mA$			0.45	
	$T_j = 25°C$	$I_F = 250mA$			1	
I_R*	$T_j = 25°C$	$V_R = 1.5V$			0.5	µA
	$T_j = 60°C$				5	
	$T_j = 25°C$	$V_R = 10V$			0.8	
	$T_j = 60°C$				7.5	
	$T_j = 25°C$	$V_R = 50V$			2	
	$T_j = 60°C$				15	
	$T_j = 25°C$	$V_R = 75V$			5	
	$T_j = 60°C$				20	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	$T_j = 25°C$	$V_R = 0V$	f = 1MHz		10		pF
	$T_j = 25°C$	$V_R = 1V$			6		

* Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$

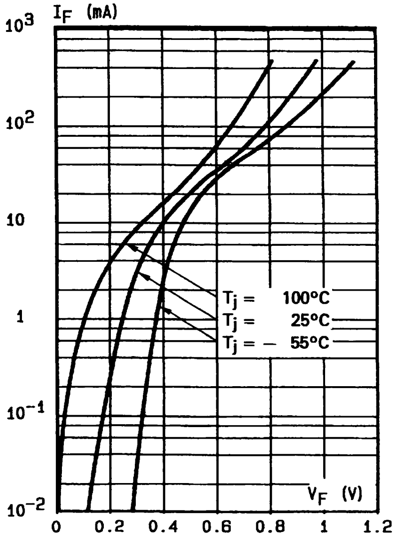


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

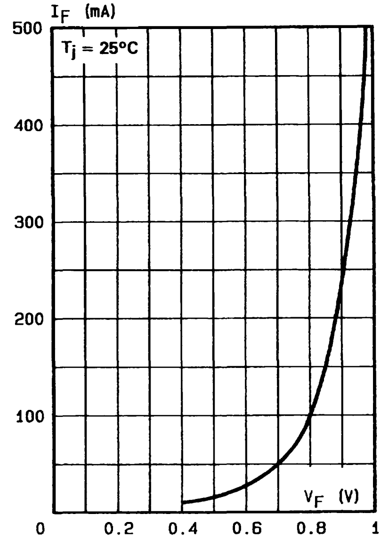


Fig.2 - Forward current versus forward voltage (typical values).

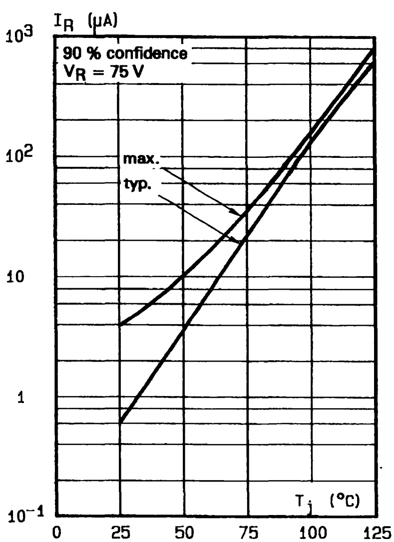


Fig.3 - Reverse current versus junction temperature (typical values).

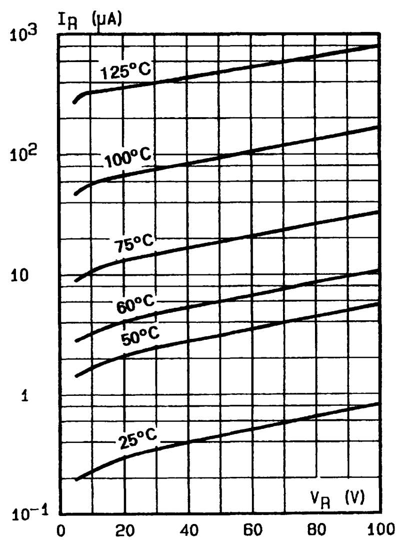


Fig.4 - Reverse current versus continuous reverse voltage

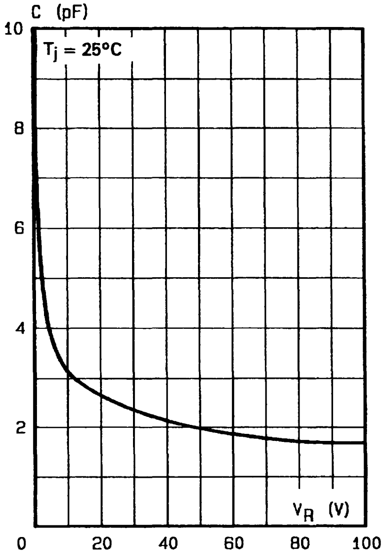
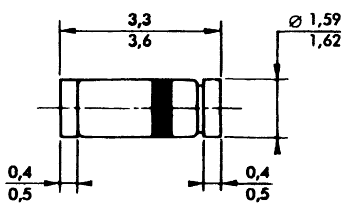


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

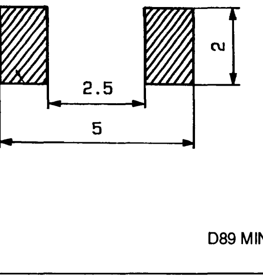
PACKAGE MECHANICAL DATA

MINIMELF Glass



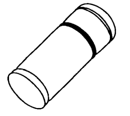
Marking ring at cathode end
Weight 0 05g

FOOT PRINT DIMENSIONS (millimeter)



TMMBAT 47
TMMBAT 48

SMALL SIGNAL SCHOTTKY DIODES



MINIMELF
(Glass)

DESCRIPTION

General purpose metal to silicon diodes featuring very low turn-on voltage and fast switching.

These devices have integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		TMMBAT47	TMMBAT48	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		20	40	V
I_F	Forward Continuous Current	$T_l = 25°C$	350		mA
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 1s$ $\delta \leq 0.5$	1		A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$	7.5		A
		$t_p = 1s$	1.5		
P_{tot}	Power Dissipation	$T_l = 25°C$	330		mW
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125		°C °C
T_L	Maximum Temperature for Soldering during 15s		260		°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	300	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)}$	T_j = 25°C	I_R = 10μA	TMMBAT47	20			V
	T_j = 25°C	I_R = 25μA	TMMBAT48	40			
V_F*	T_j = 25°C	I_F = 0.1mA	All Types			0.25	V
	T_j = 25°C	I_F = 1mA				0.3	
	T_j = 25°C	I_F = 10mA				0.4	
	T_j = 25°C	I_F = 30mA	TMMBAT47			0.5	
	T_j = 25°C	I_F = 150mA				0.8	
	T_j = 25°C	I_F = 300mA				1	
	T_j = 25°C	I_F = 50mA	TMMBAT48			0.5	
	T_j = 25°C	I_F = 200mA				0.75	
	T_j = 25°C	I_F = 500mA				0.9	
I_R*	T_j = 25°C	V_R = 1.5V	All Types			1	μA
	T_j = 60°C					10	
	T_j = 25°C	V_R = 10V	TMMBAT47			4	
	T_j = 60°C					20	
	T_j = 25°C	V_R = 20V				10	
	T_j = 60°C					30	
	T_j = 25°C	V_R = 10V	TMMBAT48			2	
	T_j = 60°C					15	
	T_j = 25°C	V_R = 20V				5	
	T_j = 60°C					25	
	T_j = 25°C	V_R = 40V				25	
	T_j = 60°C					50	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
C	T_j = 25°C	V_R = 0V	f = 1MHz		20		pF
	T_j = 25°C	V_R = 1V			12		
t_{rr}	T_j = 25°C I_F = 10mA V_R = 1V i_{rr} = 1mA R_L = 100Ω				10		ns

* Pulse test . $t_p \leq 300\mu s$ $\delta < 2\%$

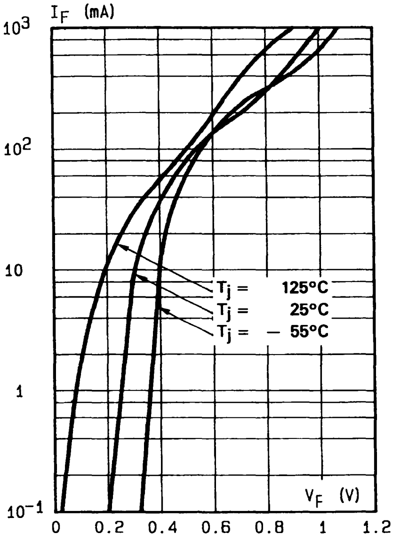


Fig.1 - Forward current versus forward voltage at different temperatures (typical values).

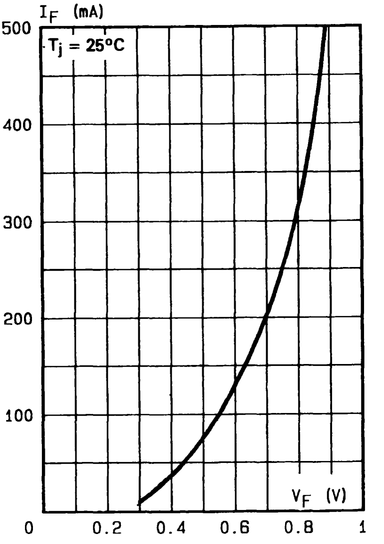


Fig.2 - Forward current versus forward voltage (typical values).

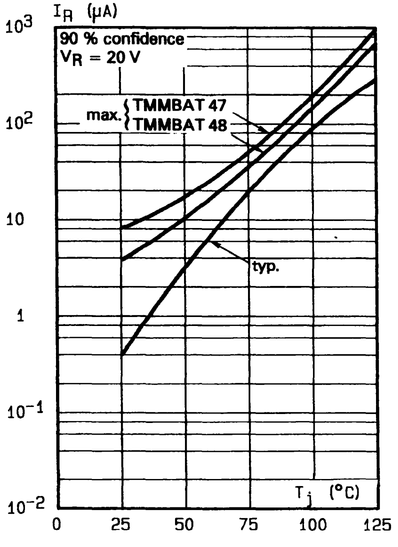


Fig.3 - Reverse current versus junction temperature.

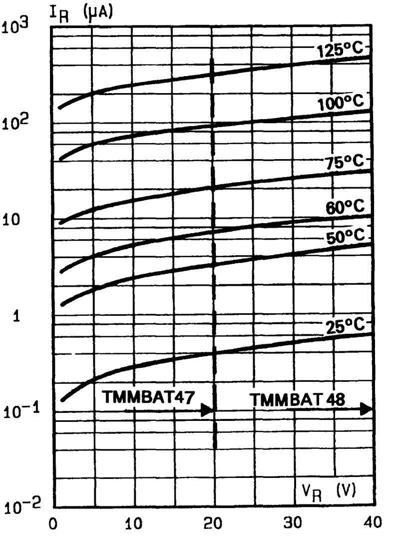


Fig.4 - Reverse current versus continuous reverse voltage (typical values).

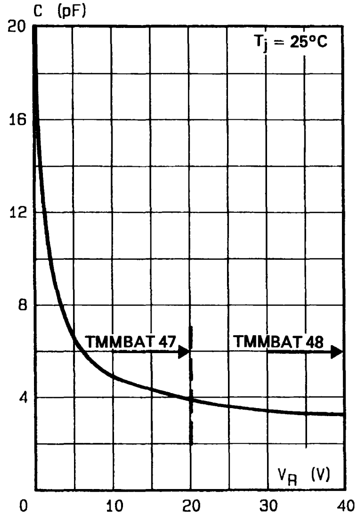
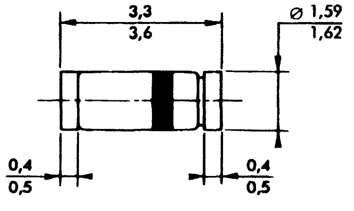


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

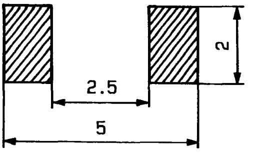
PACKAGE MECHANICAL DATA

MINIMELF Glass



Marking ring at cathode end
Weight · 0 05g

FOOT PRINT DIMENSIONS (millimeter)

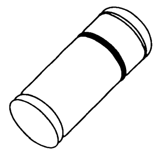


D89 MINIMELF

SGS-THOMSON
MICROELECTRONICS

TMMBAT 49

SMALL SIGNAL SCHOTTKY DIODE



MELF
(Glass)

DESCRIPTION

General purpose metal to silicon diode featuring very low turn-on voltage and fast switching.

This device has integrated protection against excessive voltage such as electrostatic discharges.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		80	V
I_F	Forward Continuous Current	$T_l = 70°C$	500	mA
I_{FRM}	Repetitive Peak Forward Current	$t_p = 1s$ $\delta \leq 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$	10	A
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150 – 65 to 125	°C °C
T_L	Maximum Temperature for Soldering during 15 s		260	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	110	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R*	$T_j = 25°C$	$V_R = 80V$			200	µA
V_F*	$T_j = 25°C$	$I_F = 10mA$			0.32	V
	$T_j = 25°C$	$I_F = 100mA$			0.42	
	$T_j = 25°C$	$I_F = 1A$			1	

DYNAMIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
C	$T_j = 25°C$ f = 1MHz	$V_R = 0V$		120		pF
		$V_R = 5V$		35		

* Pulse test : $t_p \leq 300\mu s$ $\delta < 2\%$.

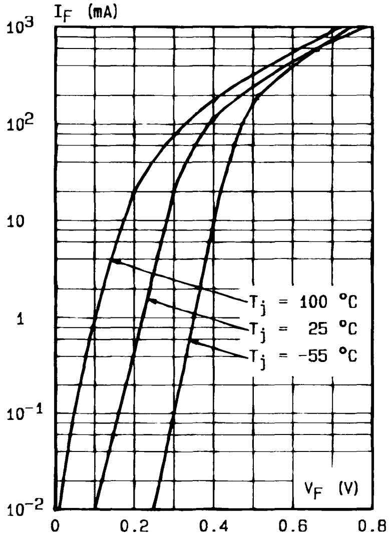


Fig.1 - Forward current versus forward voltage at low level (typical values).

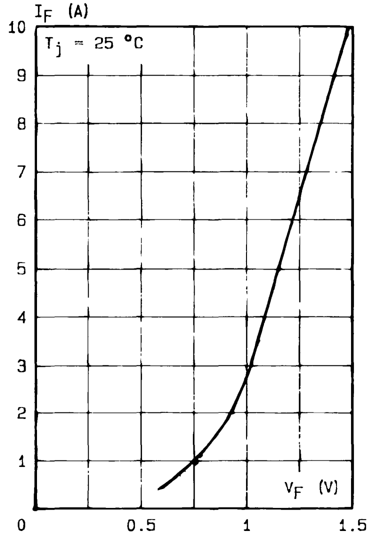


Fig.2 - Forward current versus forward voltage at high level (typical values).

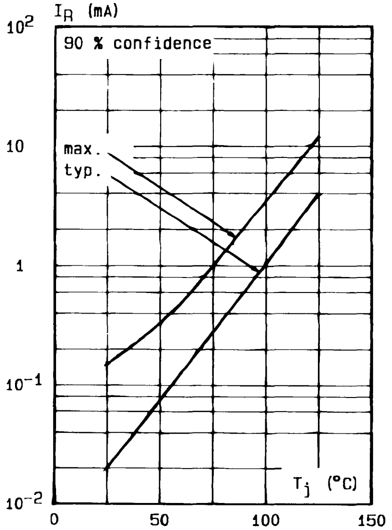


Fig.3 - Reverse current versus junction temperature.

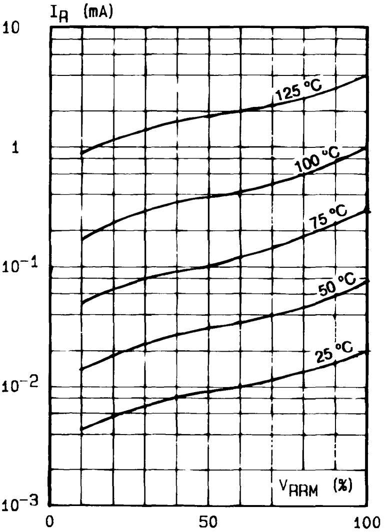


Fig.4 - Reverse current versus V_{RRM} in per cent.

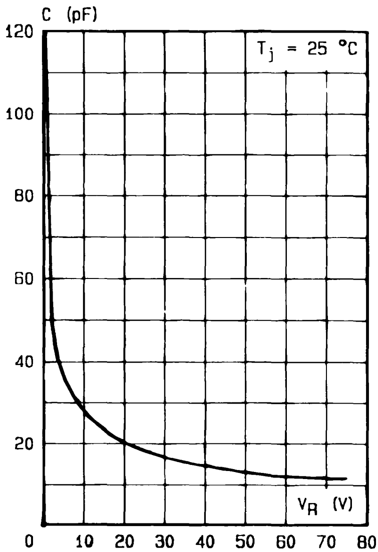


Fig.5 - Capacitance C versus reverse applied voltage V_R (typical values).

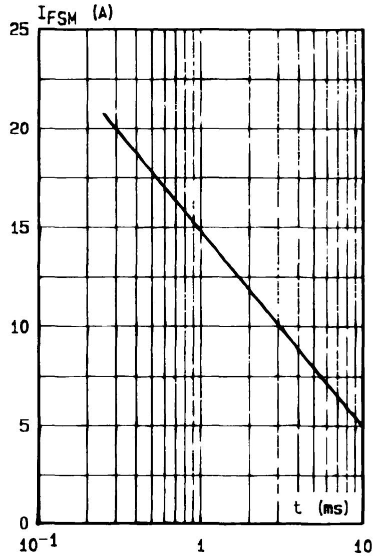


Fig.6 - Surge non repetitive forward current for a rectangular pulse with t ⩽ 10 ms.

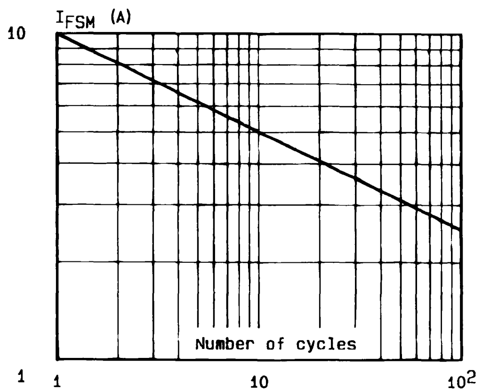
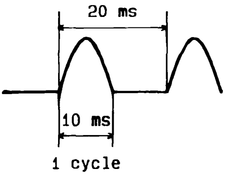
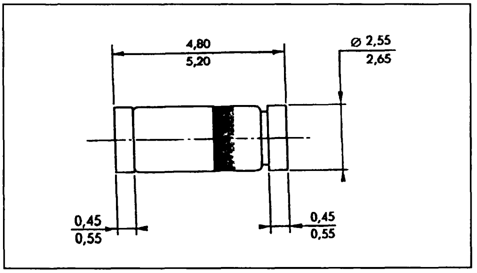


Fig.7 - Surge non repetitive forward current versus number of cycles.



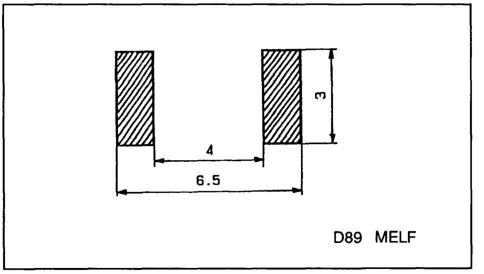
PACKAGE MECHANICAL DATA

MELF Glass



Marking · nng at cathode end
Weight : 0 15g

FOOT PRINT DIMENSIONS (millimeter)



RECTIFIER DIODES

HIGH EFFICIENCY FAST RECOVERY RECTIFIERS

V_{RRM} = 50, 100, 150 200V T_{rr} max 35 ... 80 ns V_F max 0.85-0,90V

$I_{F(AV)}$ (A) \ V_{RRM} (V)	50 … 100 … 150 … 200		Case
1,5	BYW 100	35 ns	F126
3	BYW 98	35ns	DO27A
8	BYW 29 BYW 80	35ns	DO220
8	BYW 80PI	35ns	DO220I
15	BYW 81	35ns	DO4
15	BYW 81P	35ns	DO220
15	BYW 81PI	35ns	DO220I
2x10	BYW 51	35ns	TO220
25	BYW 77	50ns	DO4
25	BYW 77P/PI	50ns	DOP3/I
2x15	BYW 99P/PI	35ns	TOP3/I
35	BYW 92	35ns	DO5
50	BYW 78	60ns	DO5
2x30	BYV 52/PI	50ns	TOP3/I
80	BYW 08	60ns	DO5
2x50	BYV 54(V)	60ns	ISOTOP
2x100	BYV 255(V)	80ns	ISOTOP

SUPERSWITCH 2 ULTRAFAST RECOVERY RECTIFIERS

V_{RRM} up to 1200V T_{rr} max 25 ... 70ns, V_F max 1,5 - 1,9V

$I_{F(AV)}$ (A)	V_{RRM} (V): 200 – 400 – 600 – 800 – 1000 – 1200		Case
1	BYT 01	25ns	F126
3	BYT 03	25ns	DO27A
8	BYT 08P	35/50/65ns	DO220
8	BYT 08PI	35/50/65ns	DO220I
12	BYT 12	50/65ns	DO4
12	BYT 12P	50/65ns	DO220
12	BYT 12PI	50/65ns	DO220I
2x8	BYT 16P	35ns	TO220
30	BYT 30	50/55/70ns	DO5
30	BYT 30P/PI	50/55/70ns	DOP3/I
2x30	BYT 230PI	50/55/70ns	ISOTOP
60	BYT 60P	50ns	DOP3
60	BYT 60	50/65/70ns	DO5
2x60	BYT 261PI(V)	50/65/70ns	ISOTOP

FAST RECTIFIERS

V_{RRM} (V): 50 100 200 300 400 600 800 1000

$I_{F\ (AV)}$ (A)	Type		Case
1	BYT 11	100ns	
	PLQ08/1	35ns	F126
3	PFR 305/310	50ns	
	PFR 850/856	75ns	
	BYT 13	150ns	DO27A
6	1N 3879...23	200ns	DO4
6	BYT 71	300ns	
8	BY 233	150ns	DO220
10	ESM 765	300ns	DO220I
10	ESM765PI	300ns	
12	BYX 61	100ns	DO4
	1N3889...93 / BYX 62	200ns	
20	1N3899...03 / BYX 63	200ns	DO5
30	BYX 65	100ns	
	1N3909...13 / BYX 64	200ns	DO5
60	ESM 243	100ns	
	ESM 244	200ns	DO5

STANDARD RECTIFIERS

$I_{F(AV)}$ (A)	VRRM (V): 50 100 200 300 400 500 600 800 1000	Case
6	BY 214	AG
6	1N1341... / 1N3988/90	DO4
10	BY 239	DO220
12	BYW 88	DO4
20	1N248B... / 1N1195A ... / RN820 ...	DO5
40	1N1183 ... / 1N3766 ...	DO5

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
1N4942		BYT11-600
1N4942GP		BYT11-600
1N4944		BYT11-600
1N4944GP		BYT11-600
1N4946		BYT11-600
1N4946GP		BYT11-600
1N4947		BYT11-800
1N4947GP		BYT11-800
1N4948		BYT11-1000
1N4948GP		BYT11-1000
1N5615		BYT11-600
1N5615GP	BYT11-600	
1N5617		BYT11-600
1N5617GP	BYT11-600	
1N5619		BYT11-600
1N5619GP	BYT11-600	
1N5621		BYT11-800
1N5621GP	BYT11-800	
1N5623		BYT11-1000
1N5623GP	BYT11-1000	
BYD33D		BYT01-200
BYD33G		BYT01-400
BYD33J		BYT11-600
BYD33K		BYT11-800
BYD33M		BYT11-800
BYR29600		BYT12-600
BYR29800		BYT12-800
BYV27-100		BYW98-100
BYV27-150		BYW98-150
BYV27-200		BYW98-200
BYV27-50		BYW98-50
BYV28-100		BYW98-100
BYV28-150		BYW98-150
BYV28-200		BYW98-200
BYV28-50		BYW98-50
BYV29-300	BYT08P300A	
BYV29-400	BYT08P400A	
BYV32100-	BYW51-100A	
BYV32150-	BYW51-150A	
BYV32200-	BYW51-200A	
BYV3250-	BYW51-50A	
BYV34300	BYT12P-300A	
BYV34400	BYT12P-400A	
BYV34500	BYT12P-600A	
BYV36A		BYT11-600
BYV36B		BYT11-600
BYV36C		BYT11-600
BYV36D		BYT11-800
BYV36E		BYT11-1000
BYV42100	BYW51-100A	
BYV42150	BYW51-150A	
BYV42200	BYW51-200A	
BYV4250	BYW51-50A	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
BYV52100	BYV52-100	
BYV52150	BYV52-150	
BYV52200	BYV52-200	
BYV5250	BYV52-50	
BYV72100	BYW99P-100	
BYV72150	BYW99P-150	
BYV72200	BYW99P-200	
BYV7250	BYW99P-50	
BYV79-100	BYW81P-100A	
BYV79-150	BYW81P-150A	
BYV79-200	BYW81P-200A	
BYV79-50	BYW81P-50A	
BYV95A		BYT11-600
BYV95A		BYT13-600
BYV95B		BYT11-600
BYV95B		BYT13-600
BYV95C		BYT11-600
BYV95C		BYT13-600
BYV96D		BYT11-800
BYV96E		BYT11-1000
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BYW29-150	BYW29-150A	
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BYW31200U	BYW77-200	
BYW3150U	BYW77-50	
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BYW9250U	BYW92-50	
BYW93100U	BYW78-100	
BYW93150U	BYW78-150	
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BYW9350U	BYW78-50	
BYW94100U	BYW08-100	
BYW94150U	BYW08-150	
BYW9450U	BYW08-50	
BYW94200U	BYW08-200	
BYW96D		BYT13-800
BYW96E		BYT13-1000
EGP10A		BYW100-50
EGP10B		BYW100-100
EGP10C		BYW100-150

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
EGP10D		BYW100-200
EGP10F		BYT01-300
EGP10G		BYT01-400
EGP20A		BYW98-50
EGP20B		BYW98-100
EGP20C		BYW98-150
EGP20D		BYW98-200
EGP20F		BYT03-300
EGP20G		BYT03-400
EGP30A		BYW98-50
EGP30B		BYW98-100
EGP30C		BYW98-150
EGP30D		BYW98-200
EGP30F		BYT03-300
EGP30G		BYT03-400
FE1A		BYW100-50
FE1B		BYW100-100
FE1C		BYW100-150
FE1D		BYW100-200
FE2A		BYW98-50
FE2B		BYW98-100
FE2C		BYW98-150
FE2D		BYW98-200
FE3A		BYW98-50
FE3B		BYW98-100
FE3C		BYW98-150
FE3D		BYW98-200
FEP16AT		BYW51-50A
FEP16BT		BYW51-100A
FEP16CT		BYW51-150A
FEP16DT		BYW51-200A
FEP30AP		BYW99P-50
FEP30BP		BYW99P-100
FEP30CP		BYW99P-150
FEP30DP		BYW99P-200
FES16AT		BYW77-50
FES16BT		BYW77-100
FES16CT		BYW77-150
FES16DT		BYW77-200
FES16FT		BYT12P-300A
FES16GT		BYT12P-400A
FES16HT		BYT12P-600A
FES16JT		BYT12P-600A
FES8AT		BYW29-50A
FES8BT		BYW29-100A
FES8CT		BYW29-150A
FES8DT		BYW29-200A
FES8FT		BYT08P-300A
FES8GT		BYT08P-400A
FES8HT		BYT12P-600A
FES8JT		BYT12P-600A
GI1001		BYW100-50
GI1002		BYW100-100

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
GI1003		BYW100-150
GI1004		BYW100-200
GI1101		BYW98-50
GI1102		BYW98-100
GI1103		BYW98-150
GI1104		BYW98-200
GI12401	BYW51-50A	
GI12402	BYW51-100A	
GI12403	BYW51-150A	
GI12404	BYW51-200A	
GI1401		BYW29-50
GI1402		BYW29-100
GI1403		BYW29-150
GI1404		BYW29-200
GI812		BYT01-200
GI814		BYT01-400
GI816		BYT11-600
GI817		BYT11-800
GI818		BYT11-1000
GI917	BYT13-800	
GI918	BYT13-1000	
MR812		BYT01-200
MR813		BYT01-300
MR814		BYT01-400
MR816		BYT11-600
MR817		BYT11-800
MR818		BYT11-1000
MR917	BYT13-800	
MR918	BYT13-1000	
MUR105	BYW100-50	
MUR110	BYW100-100	
MUR115	BYW100-150	
MUR120	BYW100-200	
MUR130	BYT01-300	
MUR140	BYT01-400	
MUR1505	BYW81P-50A	
MUR1510	BYW81P-100A	
MUR1515	BYW81P-150A	
MUR1520	BYW81P-200A	
MUR1530	BYT12P-400A	
MUR1540	BYT12P-600A	
MUR1550	BYT12P-600A	
MUR1605CT	BYW51-50A	
MUR1610CT	BYW51-100A	
MUR1615CT	BYW51-150A	
MUR1620CT	BYW51-200A	
MUR2505	BYW77-50	
MUR2510	BYW77-100	
MUR2515	BYW77-150	
MUR2520	BYW77-200	
MUR3005PT	BYW99P-50	
MUR3010PT	BYW99P-100	
MUR3015PT	BYW99P-150	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
MUR3020PT	BYW99P-200	
MUR405	BYW98-50	
MUR410	BYW98-100	
MUR415	BYW98-150	
MUR420	BYW98-200	
MUR430	BYT03-300	
MUR440	BYT03-400	
MUR5005	BYW78-50	
MUR5010	BYW78-100	
MUR5015	BYW78-150	
MUR5020	BYW78-200	
MUR605CT	BYW51-50A	
MUR610CT	BYW51-100A	
MUR615CT	BYW51-150A	
MUR620CT	BYW51-200A	
MUR7005	BYW08-50	
MUR7010	BYW08-100	
MUR7015	BYW08-150	
MUR7020	BYW08-200	
MUR805	BYW29-50A	
MUR810	BYW29-100A	
MUR8100	BYT12P-1000A	
MUR815	BYW29-150A	
MUR820	BYW29-200A	
MUR830	BYT08P-300A	
MUR840	BYT08P-400A	
MUR850	BYT12P-600A	
MUR860	BYT12P-600A	
MUR870	BYT12P-800A	
MUR880	BYT12P-800A	
MUR890	BYT12P-1000A	
NS1002		BYT01-200
NS1004		BYT01-400
NS1005		BYT11-600
NS1006		BYT11-600
NS502		BYT01-200
NS504		BYT01-400
NS505		BYT11-600
NS506		BYT11-600
PHS1001	BYW100-50	
PHS1002	BYW100-100	
PHS1003	BYW100-150	
PHS2401	BYW51-50A	
PHS2402	BYW51-100A	
PHS2403	BYW51-150A	
PHS2404	BYW51-200A	
PLR812	BYT01-200	
PLR813	BYT01-300	
PLR814	BYT01-400	
PLR816	BYT11-600	
PLR817	BYT11-800	
PLR818	BYT11-1000	
RG1D		BYT01-200
RG1G		BYT01-400
RG1J		BYT11-600
RG1K		BYT11-800
RG1M		BYT11-1000
RG2J		BYT13-600
RG2K		BYT13-800
RG2M		BYT13-1000
RG3J		BYT13-600
RG3K		BYT13-800
RG3M		BYT13-1000
RGP10D		BYT01-200
RGP10F		BYT01-300
RGP10G		BYT01-400
RGP10H		BYT11-600
RGP10J		BYT11-600
RGP10K		BYT11-800
RGP10M		BYT11-1000
RGP15K		BYT13-800
RGP15M		BYT13-1000
RGP20K		BYT13-800
RGP20M		BYT13-1000
RGP25K		BYT13-800
RGP25M		BYT13-1000
RGP30K		BYT13-800
RGP30M		BYT13-1000
RGP80A	BYW29-50A	
RGP80B	BYW29-100A	
RGP80D	BYW29-200A	
RGP80G	BYT12P-400A	
RGP80J	BYT12P-600A	
RGP80K	BYT12P-800A	
RMC0100		BYT11-1000
RMC020		BYT01-200
RMC040		BYT01-400
RMC060		BYT11-600
RMC080		BYT11-800
RP16AT		BYW51-50A
RP16BT		BYW51-100A
RP16DT		BYW51-200A
RP30KP	BYT30P-800	
RP30MP	BYT30P-1000	
RS8AT		BYW29-50A
RS8BT		BYW29-100A
RS8DT		BYW29-200A
RS8GT		BYT08P-400A
RS8JT		BYT12P-600A
RS8KT		BYT12P-800A
RS8MT		BYT12P-1000A
RUD805	BYW29-50A	
RUD810	BYW29-100A	
RUD815	BYW29-150A	
RUD820	BYW29-200A	
RUD805	BYW29-50A	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
RUR810	BYW29-100A	
RUR815	BYW29-150A	
RUR820	BYW29-200A	
RURD1610	BYW99P-100	
RURD1615	BYW99P-150	
RURD1620	BYW99P-200	
RURD805	BYW51-50A	
RURD810	BYW51-100A	
RURD815	BYW51-150A	
RURD820	BYW51-200A	
S110F		BYT11-1000
S1A2F		BYT01-200
S1A3F		BYT01-300
S1A4F		BYT01-400
S1A5F		BYT11-600
S310F		BYT13-1000
S3A8F		BYT13-800
SES5401	BYW29-50A	
SES5401C	BYW51-50A	
SES5402	BYW29-100A	
SES5402C	BYW51-100A	
SES5403	BYW29-150A	
SES5403C	BYW51-150	
SES5404	BYW29-200A	
SES5404C	BYW51-200	
SES5501	BYW81-50	
SES5502	BYW81-100	
SES5503	BYW81-150	
SES5504	BYW81-200	
SES5701	BYW77-50	
SES5702	BYW77-100	
SES5703	BYW77-150	
SES5801	BYW78-50	
SES5802	BYW78-100	
SES5803	BYW78-150	
SGI5401	BYW29-50A	
SGI5401C	BYW51-50A	
SGI5402	BYW29-100A	
SGI5402C	BYW51-100A	
SGI5403	BYW29-150A	
SGI5403C	BYW51-150A	
SGI5404	BYW29-200A	
SGI5404C	BYW51-200A	
SRP100D		BYT01-200
SRP100G		BYT01-400
SRP100J		BYT11-600
SRP100K		BYT11-800
SRP300J		BYT13-600
SRP300K		BYT13-800
SRSFR120		BYT01-200
SRSFR140		BYT01-400
SRSFR150		BYT11-600
SRSFR160		BYT11-600

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
SRSFR180		BYT11-800
TS20		BYT01-200
TS3		BYT01-300
TS40		BYT01-400
TS5		BYT11-600
TS60		BYT11-600
UES1001		BYW100-50
UES1001		BYW100-50
UES1002		BYW100-100
UES1003		BYW100-150
UES1102		BYW100-100
UES1103		BYW100-150
UES1104		BYT01-200
UES1105		BYT01-300
UES1106		BYT01-400
UES1301		BYW98-50
UES1302		BYW98-100
UES1303		BYW98-150
UES1304		BYW98-200
UES1305		BYT03-300
UES1306		BYT03-400
UES1401	BYW29-50A	
UES1402	BYW29-100A	
UES1403	BYW29-150A	
UES1404	BYW29-200A	
UES1421	BYT12P-600A	
UES1422	BYT12P-800A	
UES1423	BYT12P-1000A	
UES1501	BYW81P-50A	
UES1502	BYW81P-100A	
UES1503	BYW81P-150A	
UES1504	BYW81P-200A	
UES2401	BYW51-50A	
UES2402	BYW51-100A	
UES2403	BYW51-150A	
UES2404	BYW51-200A	
UES2601		BYW99P-50
UES2602		BYW99P-100
UES2603		BYW99P-150
UES2604		BYW99P-200
UES701	BYW77-50	
UES702	BYW77-100	
UES703	BYW77-150	
UES704	BYW77-200	
UES801	BYW08-50	
UES802	BYW08-100	
UES803	BYW08-150	
UES804	BYW08-200	
UF4001	BYW100-50	
UF4002	BYW100-100	
UF4003	BYW100-200	
UF4004	BYT01-400	
UF54001	BYW98-50	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
UF54002	BYW98-5100	
UF54003	BYW98-200	
UF54004	BYT03-40	
VHE1401	BYW29-50A	
VHE1402	BYW29-100A	
VHE1403	BYW29-150A	
VHE1404	BYW29-200A	
VHE205	BYW100-50	
VHE210	BYW100-100	
VHE215	BYW100-150	
VHE220	BYW100-200	
VHE2401	BYW51-50A	
VHE2402	BYW51-100A	
VHE2403	BYW51-150A	

INDUSTRY PART NUMBER	SGS-THOMSON DIRECT REPLACEMENT	SGS-THOMSON SIMILAR REPLACEMENT
VHE2404	BYW51-200A	
VHE605		BYW98-50
VHE610		BYW98-100
VHE615		BYW98-150
VHE620		BYW98-200
VHE701	BYW77-50	
VHE702	BYW77-100	
VHE703	BYW77-150	
VHE704	BYW77-20	
VHE801	BYW08-50	
VHE802	BYW08-100	
VHE803	BYW08-150	
VHE804	BYW08-200	
VHE804	BYW08-200	

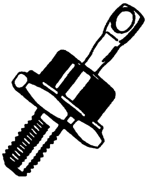
RECTIFIER DIODES DATASHEETS

SGS-THOMSON MICROELECTRONICS

1N 248 B → 1N 250 B
1N 1195 A → 1N 1198 A
RN 820/RN 1120

RECTIFIER DIODES

- STANDARD RECTIFIER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



DO 5
(Metal)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\,(AV)}$	Average Forward Current*	T_c = 150°C	20	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	450	A
P_{tot}	Power Dissipation*	T_c = 150°C	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 175	°C

Symbol	Parameter	1N							RN		Unit
		248B	249B	250B	1195A	1196A	1197A	1198A	820	1120	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	1	°C/W

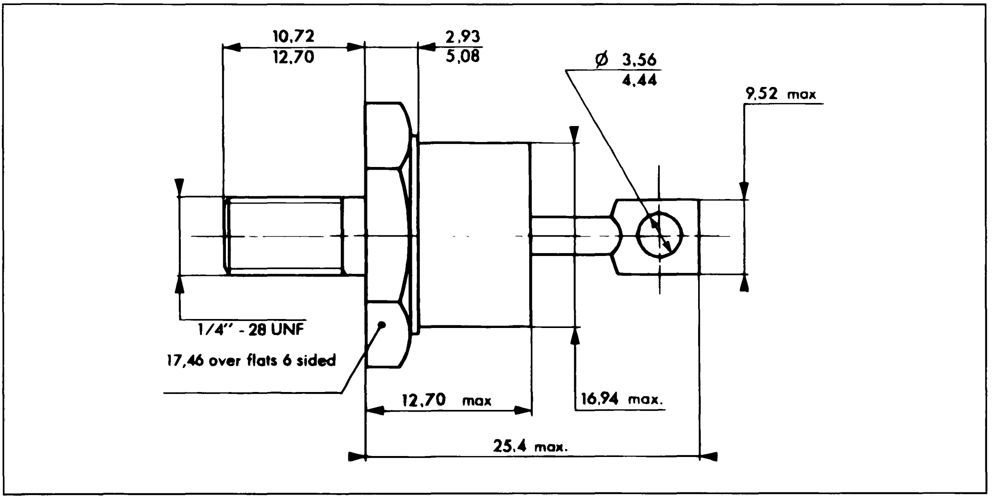
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 150°C	$V_R = V_{RRM}$			5	mA
V_F	T_j = 25°C	I_F = 70A			1.5	V

* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

DO 5 Metal



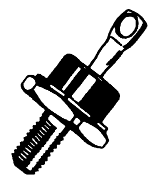
Cooling method . by conduction (method C)
Marking . Cathode connected to case type number
Anode connected to case . type number + suffix R (consult us for these reverse version datasheets)
Weight . 18.84g
Recommended torque value : 250cm N
Maximum torque value . 310cm N

SGS-THOMSON
MICROELECTRONICS

1N 1183/84/1N 1186 → 90
1N 3766/1N 3768

RECTIFIER DIODES

- STANDARD RECTIFIER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



DO 5
(Metal)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\ (AV)}$	Average Forward Current*	T_c = 140°C	40	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	700	A
P_{tot}	Power Dissipation*	T_c = 140°C	44	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 175	°C

Symbol	Parameter	1N									Unit
		1183	1184	1186	1187	1188	1189	1190	3766	3768	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.8	°C/W

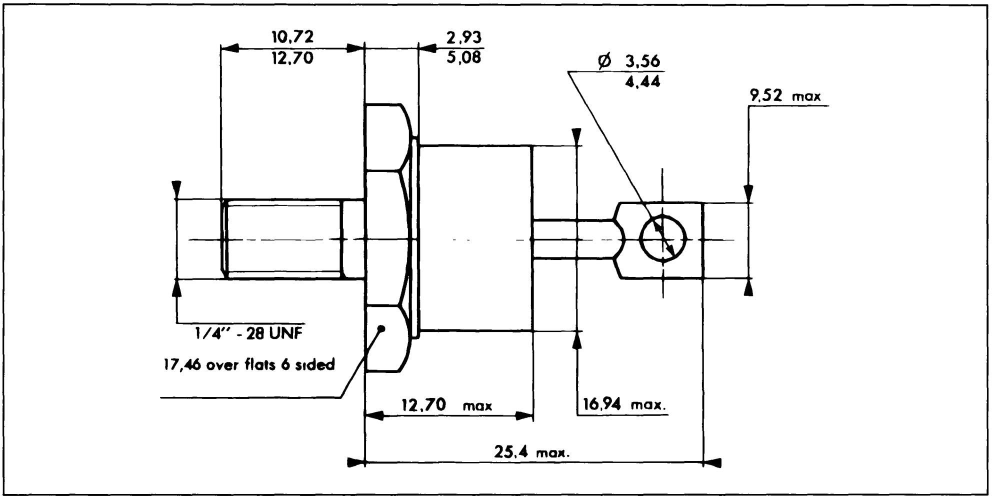
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 150°C	$V_R = V_{RRM}$			500	µA
V_F	T_j = 25°C	I_F = 110A			1.5	V

* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

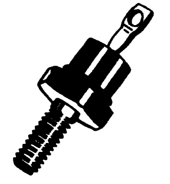
DO 5 Metal



Cooling method . by conduction (method C)
Marking · Cathode connected to case type number
Anode connected to case . type number + suffix R (consult us for these reverse version datasheets)
Weight 18 84g
Recommended torque value . 250cm N
Maximum torque value · 310cm. N

RECTIFIER DIODES

- STANDARD RECTIFER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



DO 4
(Metal)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\,(AV)}$	Average Forward Current*	T_c = 150°C	20	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	450	A
P_{tot}	Power Dissipation*	T_c = 150°C	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 175	°C

Symbol	Parameter	1N									Unit
		1341B	1342B	1344B	1345B	1346B	1347B	1348B	3988	3990	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	3.5	°C/W

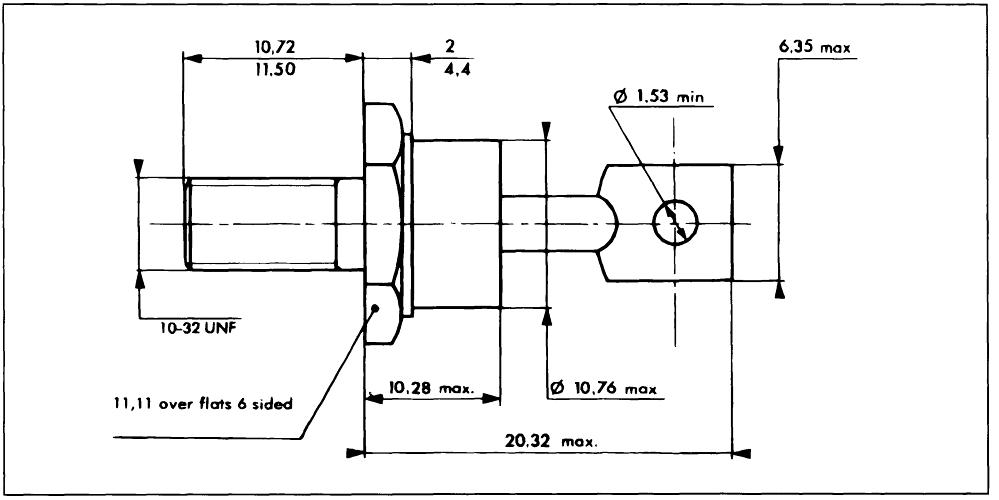
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 150°C	$V_R = V_{RRM}$			500	µA
V_F	T_j = 25°C	I_F = 20A			1.2	V

* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

DO 4 Metal

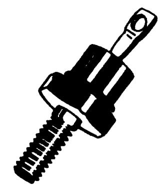


Cooling method by conduction (method C)
Marking Cathode connected to case type number
Anode connected to case · type number + suffix R (consult us for these reverse version datasheets)
Weight · 5 1g
Recommended torque value 180cm N
Maximum torque value 220cm N

1N 3879 → 1N 3883

FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME



DO 4
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	130	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100°C$	6	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	1N					Unit
		3879	3880	3881	3882	3883	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 6A			1.4	V

RECOVERY CHARACTERISTICS

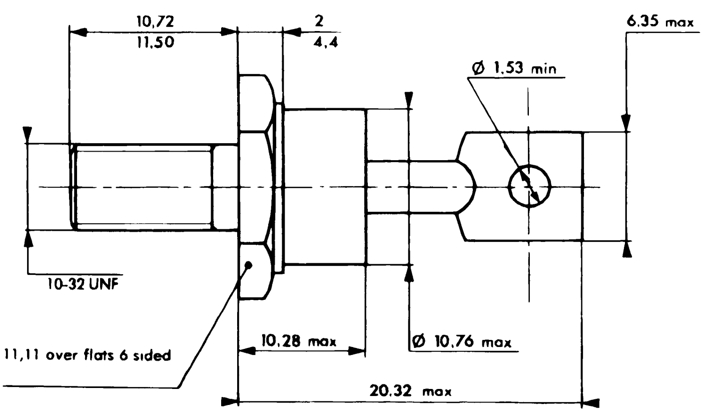
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			200	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			0.2	µC
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.02\ I_F$ $\qquad$ $P = 1.2 \times I_{F(AV)} + 0.02\ I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 4 Metal

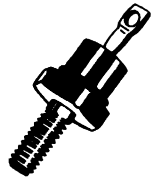


Coolıng method by conductıon (method C)
Markıng Cathode connected to case type number
Anode connected to case type number + suffıx R (consult us for these reverse versıon datasheets)
Weıght 5 1g
Recommended torque value 220cm N
Maxımum torque value 220cm N

1N 3889→1N 3893 BYX 62-600

FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME
- AVAILABLE UP TO 600V



DO 4
(Metal)

APPLICATIONS
- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	130	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 100°C$	12	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	1N					BYX	Unit
		3889	3890	3891	3892	3893	62-600	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	600	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				3	mA
V_F	T_j = 25°C	I_F = 12A			1.4	V

RECOVERY CHARACTERISTICS

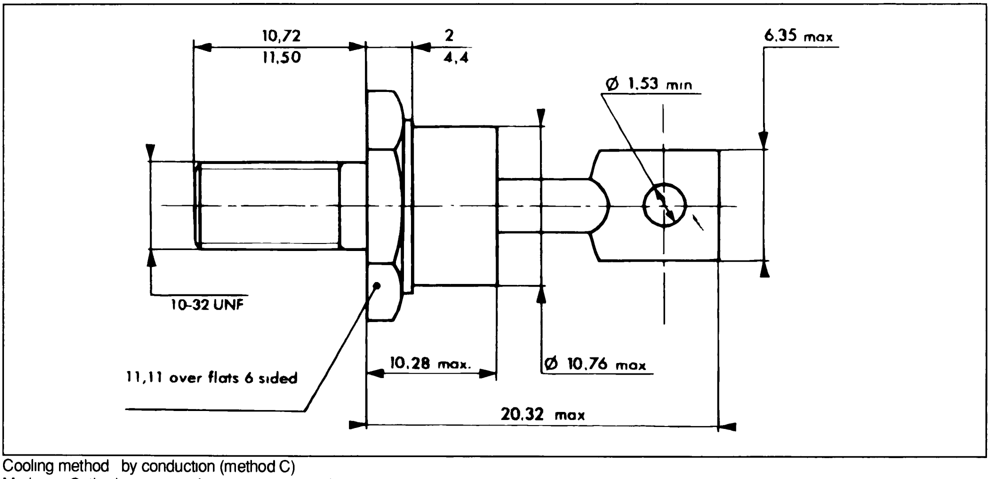
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			200	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			0.2	µC
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.012\ I_F$ $\qquad P = 1.2 \times I_{F(AV)} + 0.012\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 4 Metal



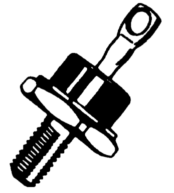
Cooling method by conduction (method C)
Marking Cathode connected to case . type number
Anode connected to case type number + suffix R (consult us for these reverse version datasheets)
Weight · 5 1g
Recommended torque value 180cm. N
Maximum torque value 220cm N

SGS-THOMSON
MICROELECTRONICS

1N 3899→1N 3903
BYX 63-600

FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME
- AVAILABLE UP TO 600V



DO 5
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	200	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100°C$	20	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	225	A
P_{tot}	Power Dissipation	$T_C = 100°C$	35	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	1N					BYX	Unit
		3899	3900	3901	3902	3903	63-600	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	600	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	1.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 20A			1 4	V

RECOVERY CHARACTERISTICS

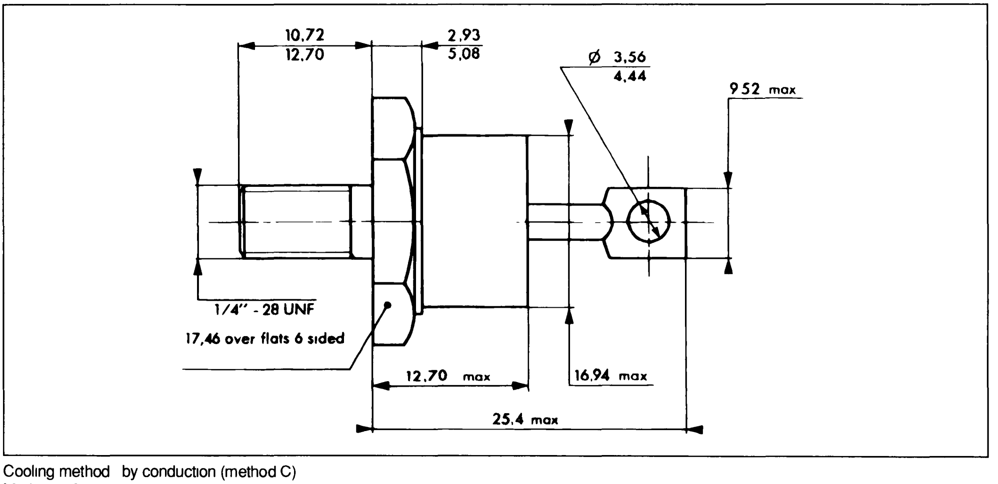
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			200	ns
Q_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			0 3	µC
I_{RM}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			3	A

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.008\ I_F$ $\qquad$ $P = 1.2 \times I_{F(AV)} + 0.008\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal

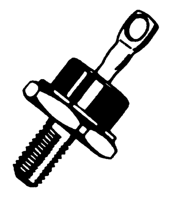


Coolıng method by conductıon (method C)
Markıng Cathode connected to case type number
Anode connected to case type number + suffıx R (consult us for these reverse versıon datasheets)
Weıght · 18 84g
Recommended torque value 250cm. N
Maxımum torque value · 310cm N

1N 3909→1N 3913
BYX 64-600

FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME
- AVAILABLE UP TO 600V



DO 5
(Metal)

APPLICATIONS
- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	250	A
$I_{F(AV)}$	Average Forward Current	$T_c = 100°C$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	300	A
P_{tot}	Power Dissipation	$T_c = 100°C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	1N					BYX 64-600	Unit
		3909	3910	3911	3912	3913		
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	600	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 30A			1.4	V

RECOVERY CHARACTERISTICS

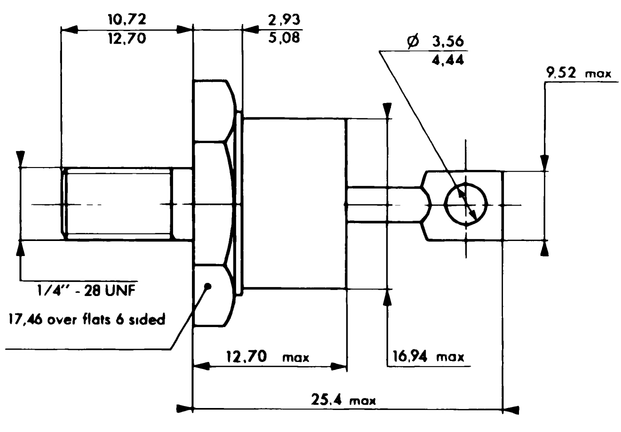
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			200	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			0.3	µC
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			3	A

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.006\ I_F$ $\qquad$ $P = 1.2 \times I_{F(AV)} + 0.006\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



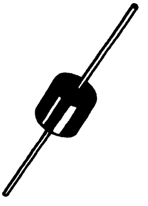
Coolıng method by conduction (method C)
Markıng Cathode connected to case type number
Anode connected to case · type number + suffıx R (consult us for these reverse version datasheets)
Weıght 18 84g
Recommended torque value 250cm N
Maxımum torque value . 310cm. N

SGS-THOMSON
MICROELECTRONICS

BY 214-50 → 1000

RECTIFIER DIODES

- STANDARD RECTIFIER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



AG
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\ (AV)}$	Average Forward Current*	T_a = 90°C	6	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	400	A
P_{tot}	Power Dissipation*	T_a = 90°C	6	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C
T_L	Maximun Lead Temperature For Soldering During 10s at 4mm From Case		230	°C

Symbol	Parameter	BY 214-					Unit
		200	400	600	800	1000	
V_{RRM}	Repetitive Peak Reverse Voltage	200	400	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	10	°C/W

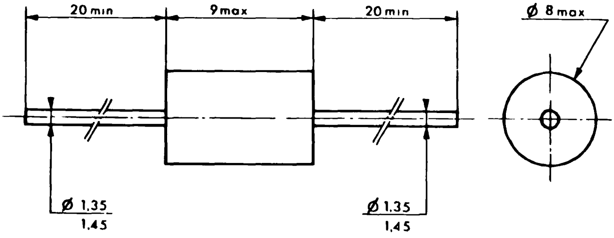
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 100°C	$V_R = V_{RRM}$			250	µA
V_F	T_j = 25°C	I_F = 20A			1.2	V

* On infinite heatsink with 10mm lead length
Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

AG Plastic



Cooling method by convection (method A)
Marking . Type number, white band indicates cathode
Weight 1g

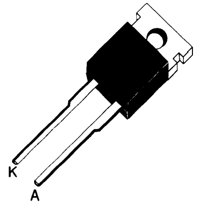
SGS-THOMSON
MICROELECTRONICS

BY 233-200 A → 600 A

FAST RECOVERY RECTIFIER DIODES

- LOW SWITCHING LOSSES
- LOW PEAK RECOVERY CURRENT I_{RM}
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

Cathode connected to case



DO 220 AB
(Plastic)

APPLICATIONS

- MOTOR CONTROLS (FREE-WHEELING DIODE)
- SWITCHMODE POWER SUPPLIES
- SNUBBER DIODES

DESCRIPTION

Fast recovery rectifiers suited for power switching applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	100	A
$I_{F\ (RMS)}$	RMS Forward Current		20	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 115°C$ $\delta = 0.5$	10	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P_{tot}	Power Dissipation	$T_C = 90°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYX 233-			Unit
		200 A	400 A	600 A	
V_{RRM}	Repetitive Peak Reverse Voltage	200	400	600	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	250	450	650	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	3	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 8A			1.5	V
	T_j = 100°C				1.25	

RECOVERY CHARACTERISTICS

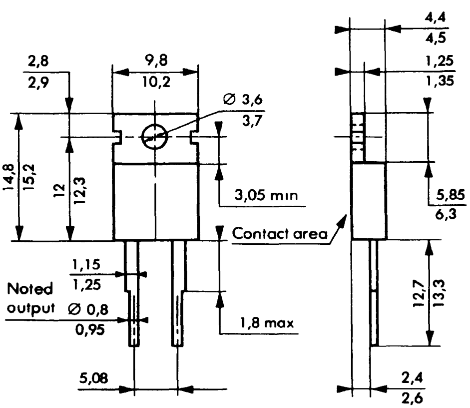
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			150	ns
Q_{rr}	T_j = 25°C V_R = 100V	I_F = 8A	dI_F/dt = – 20A/µs		2.2		µC
I_{RM}	T_j = 25°C V_R = 100V	I_F = 8A	dI_F/dt = – 20A/µs			4	A

To evaluate the conduction losses use the following equations :

$V_F = 0.95 + 0.012\ I_F$ $\qquad$ $P = 0.95 \times I_{F(AV)} + 0.012\ I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method by conduction (method C)
Marking type number
Weight 2 4 g
Recommended torque value 80cm N
Maximum torque value 100cm N

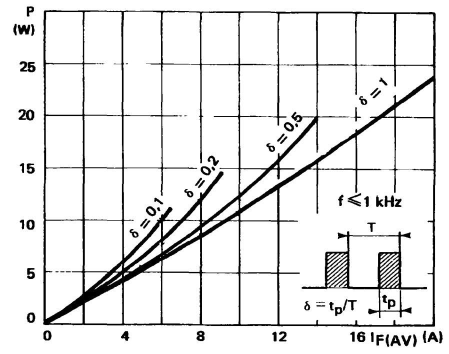


FIGURE 1 : Low frequency power losses versus average current

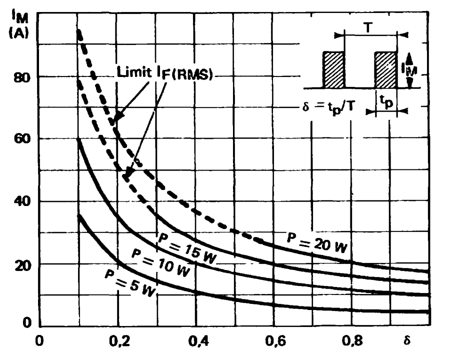


FIGURE 2 : Peak current versus form factor

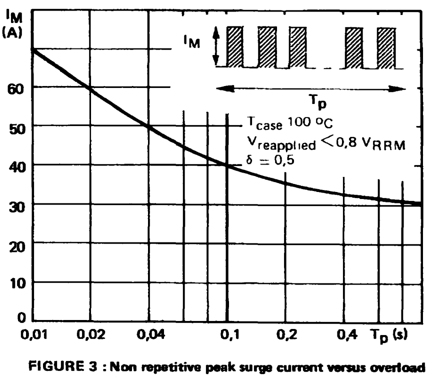


FIGURE 3 : Non repetitive peak surge current versus overload duration

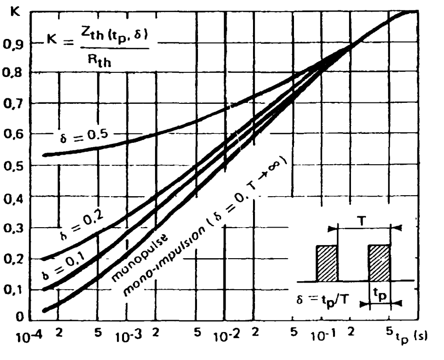


FIGURE 4 : Thermal impedance versus pulse width

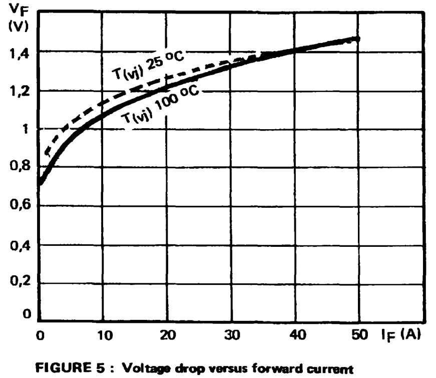


FIGURE 5 : Voltage drop versus forward current

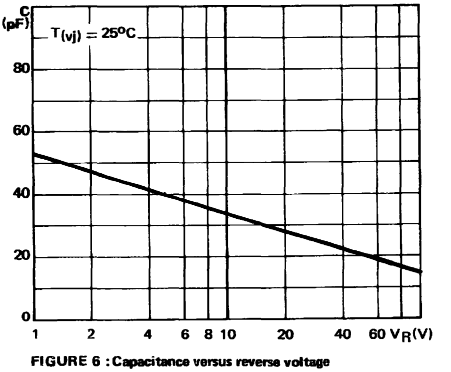


FIGURE 6 : Capacitance versus reverse voltage

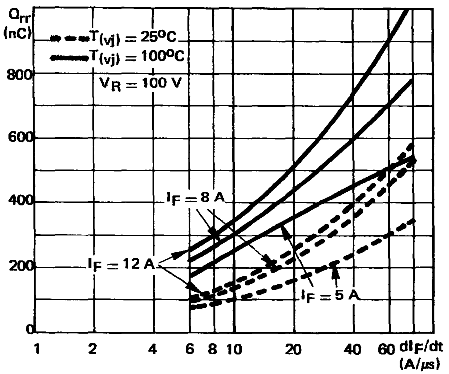


FIGURE 7 : Recovery charge versus dI_F/dt

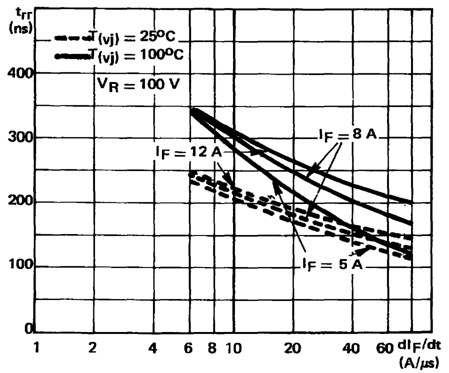


FIGURE 8 : Recovery time versus dI_F/dt

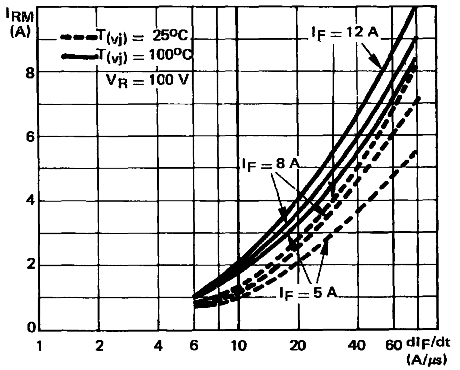


FIGURE 9 : Peak reverse current versus dI_F/dt

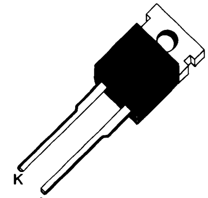
SGS-THOMSON MICROELECTRONICS

BY 239-200 A → 800 A

RECTIFIER DIODES

- STANDARD RECTIFIER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP

Cathode connected to case



DO 220 AB
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\,(AV)}$	Average Forward Current*	T_c = 100°C	10	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	140	A
P_{tot}	Power Dissipation*	T_c = 100°C	12.5	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 125	°C

Symbol	Parameter	BY 239–				Unit
		200 A	400 A	600 A	800 A	
V_{RRM}	Repetitive Peak Reverse Voltage	200	400	600	800	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	2	°C/W

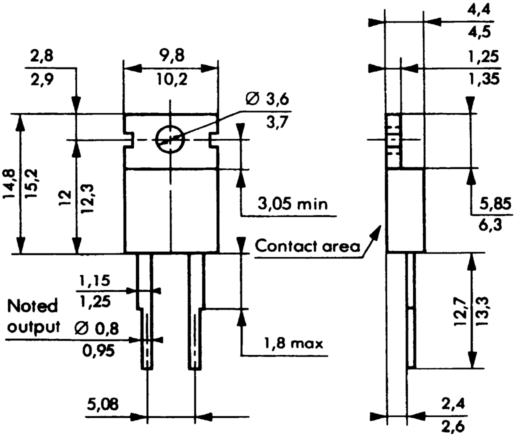
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 125°C	$V_R = V_{RRM}$			500	µA
V_F	T_j = 25°C	I_F = 30A			1.45	V

* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



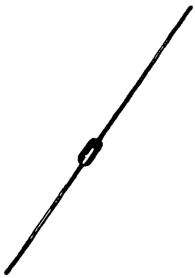
Cooling method · by conduction (method C)
Marking Type number
Weight 2 4g
Recommended torque value . 80cm. N
Maximum torque value 100cm. N

SGS-THOMSON
MICROELECTRONICS

BYT 01-200→400

FAST RECOVERY RECTIFIER DIODES

FAST RECOVERY RECTIFIER
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



F-126
(Plastic)

SUITABLE APPLICATIONS
- FREE WHEELING DIODE IN CONVERTERS AND MOTORS CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	30	A
$I_{F(AV)}$	Average Forward Current *	$T_a = 70°C$ $\delta = 0.5$	1	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	30	A
P	Power Dissipation *	$T_a = 70°C$	1.33	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 01-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient *	60	°C/W

* On infinite heatsink with 10mm lead lengh.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 1A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			55	ns
	T_j = 25°C	I_F = 0.5A I_R = 1A I_{rr} = 0.25A			25	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

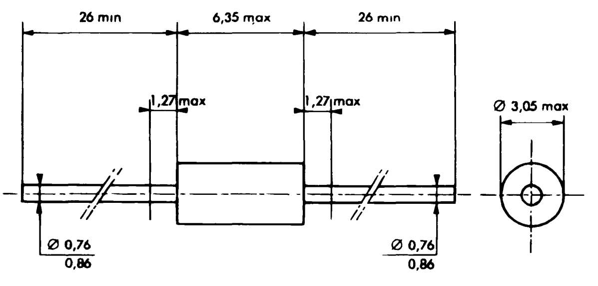
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 50A/µs	T_j = 100°C V_{CC} = 200V I_F = 1A		35	50	ns
I_{RM}	dI_F/dt = – 50A/µs	L_p ≤ 0.05µA See figure 12		1.5	2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.05 + 0.145\ I_F$ $P = 1.05 \times I_{F(AV)} + 0.145\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

F126 Plastic



Cooling method : by convection (method A)
Marking type number
Weight : 0 4g

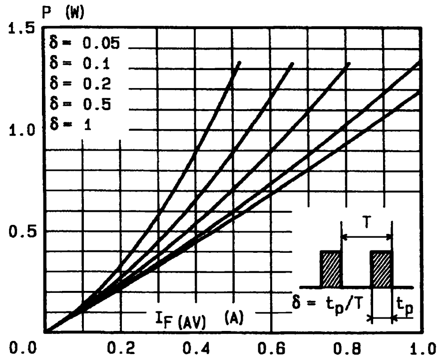


Fig.1 - Maximum average power dissipation versus average forward current.

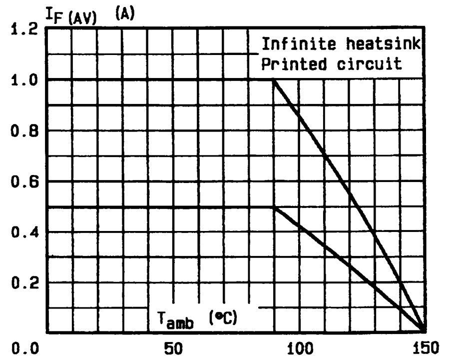


Fig.2 - Average forward current versus ambient temperature.

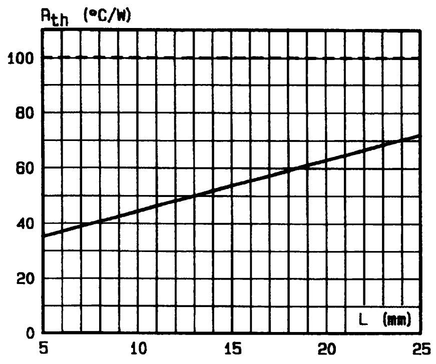
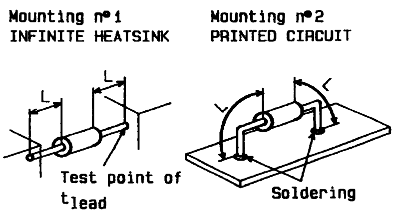


Fig.3 - Thermal resistance versus lead length.



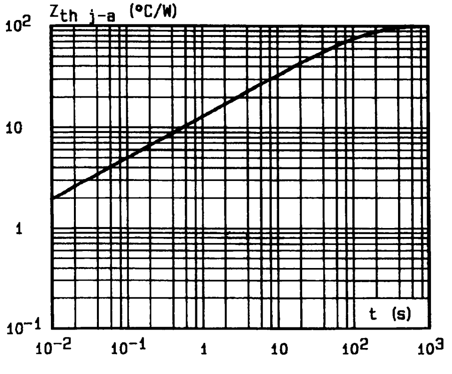


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

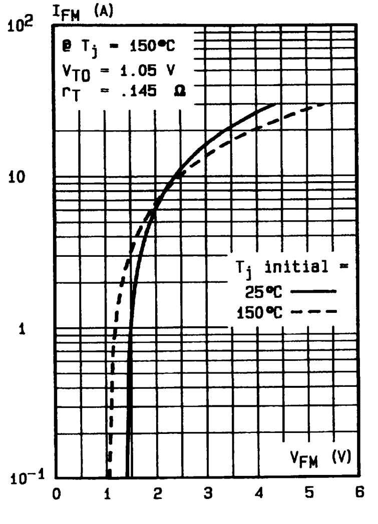


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

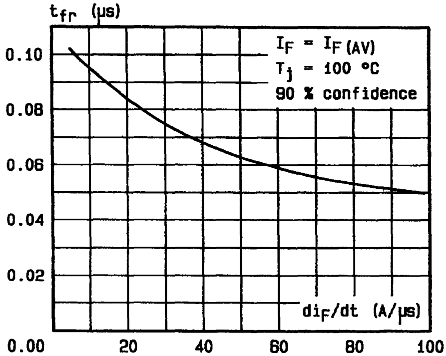


Fig.7 - Recovery time versus di_F/dt.

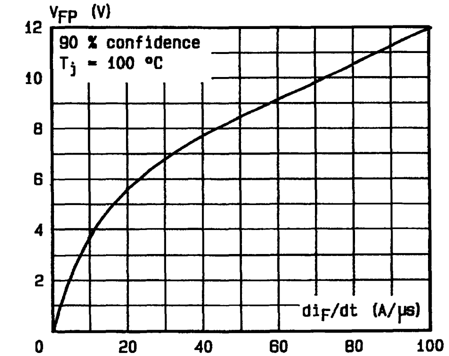


Fig.8 - Peak forward voltage versus di_F/dt.

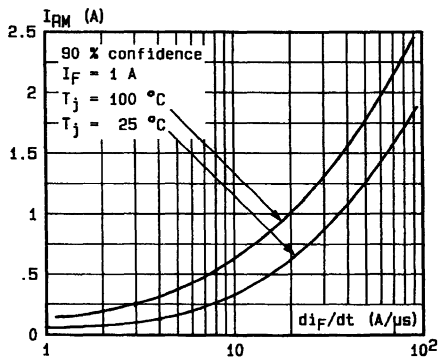


Fig.9 - Peak reverse current versus di_F/dt.

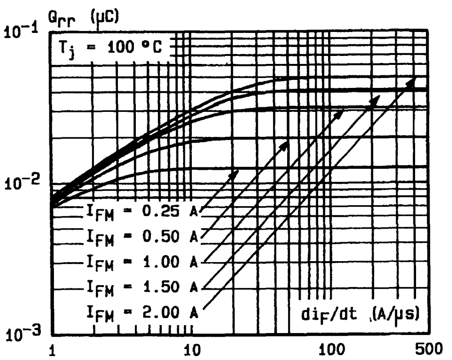


Fig.10 - Recovered charge versus di_F/dt (typical values).

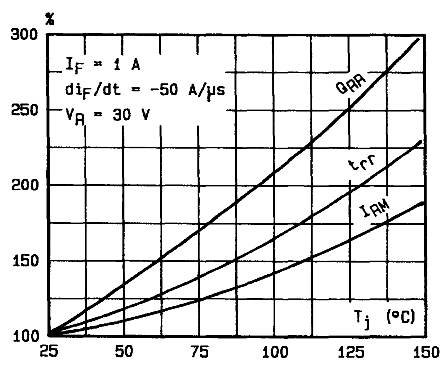


Fig.11 - Dynamic parameters versus junction temperature.

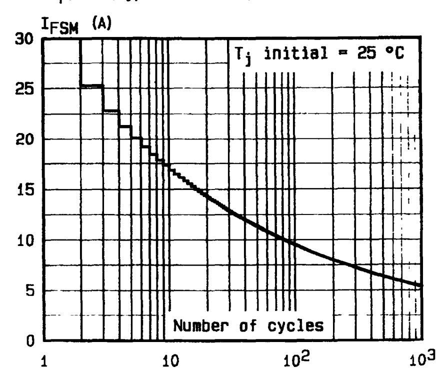


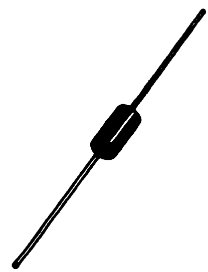
Fig.12 - Non repetitive surge peak current versus number of cycles

SGS-THOMSON MICROELECTRONICS

BYT 03-200→400

FAST RECOVERY RECTIFIER DIODES

FAST RECOVERY RECTIFIER
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



DO 27A
(Plastic)

SUITABLE APPLICATIONS
- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIERS IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	60	A
$I_{F(AV)}$	Average Forward Current *	$T_a = 65°C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	60	A
P	Power Dissipation *	$T_a = 65°C$	4.2	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 03-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	20	°C/W

* On infinite heatsink with 10mm lead lengh

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 3A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			55	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			25	

TURN -OFF SWITCHING CHARACTERISTICS - Without Series Inductance

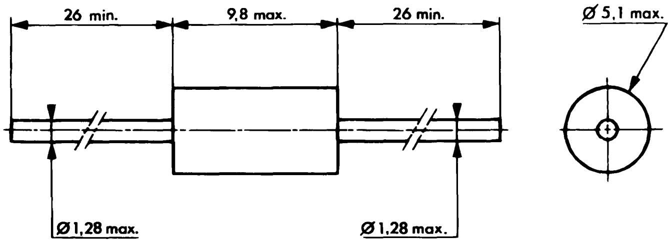
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 50A/µs	T_j = 100°C V_{CC} = 200V I_F = 3A		35	50	ns
I_{RM}	di_F/dt = – 50A/µs	$L_P \leq 0.05\mu H$		1.5	2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.050\ I_F$ $P = 1.1 \times I_{F\,(AV)} + 0.050\ I_{F\,(RMS)}^2$

PACKAGE MECHANICAL DATA

DO 27A Plastic



Cooling method . by convection (method A)
Marking · type number , white band indicates cathode
Weight · 1g

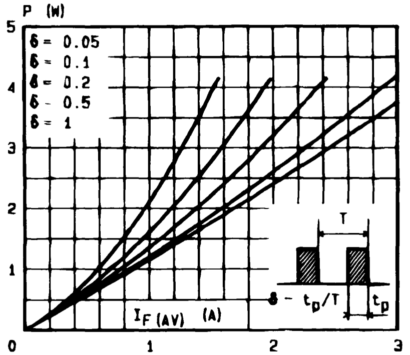


Fig.1 - Maximum average power dissipation versus average forward current.

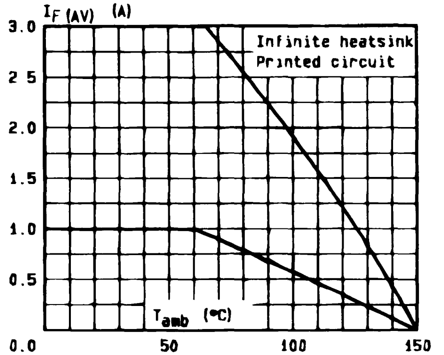


Fig.2 - Average forward current versus ambient temperature.

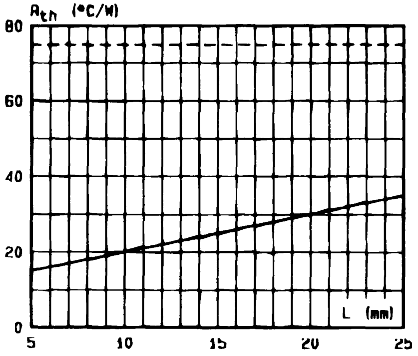
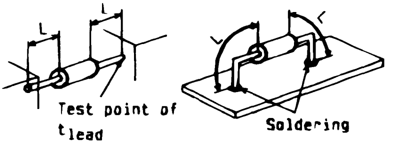


Fig.3 Thermal resistance versus lead length.

Mounting n°1
INFINITE HEATSINK

Mounting n°2
PRINTED CIRCUIT



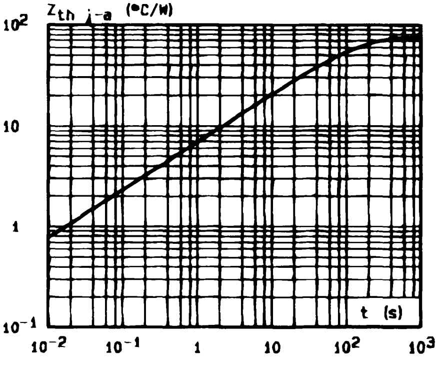


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

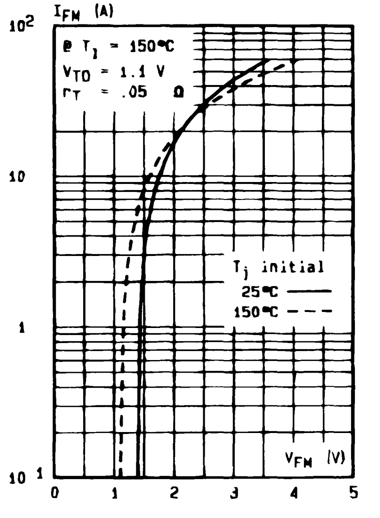


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

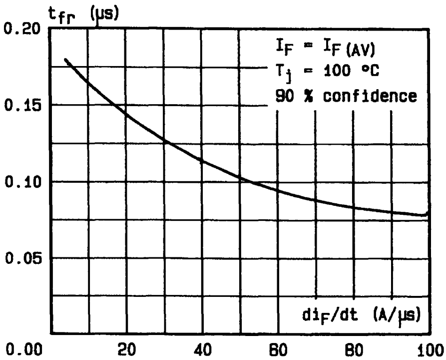


Fig.7 - Recovery time versus di_F/dt.

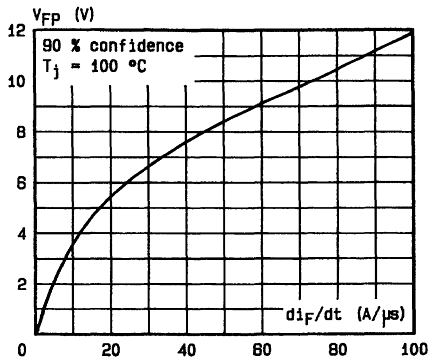


Fig.8 - Peak forward voltage versus di_F/dt.

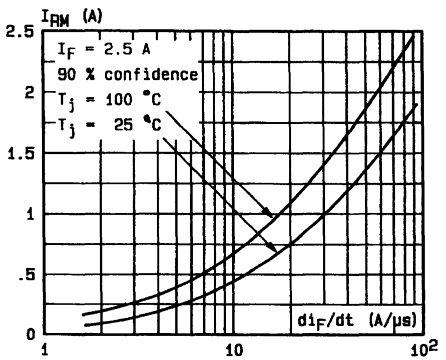


Fig.9 - Peak reverse current versus di_F/dt.

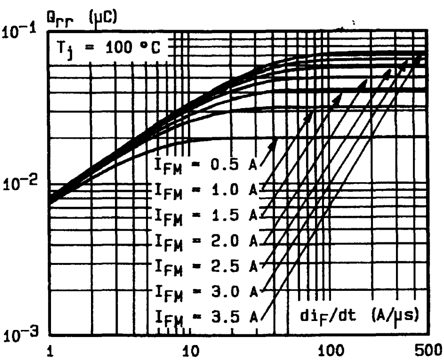


Fig.10 - Recovered charge versus di_F/dt (typical values).

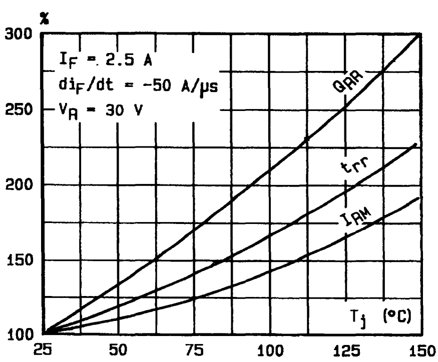


Fig.11 - Dynamic parameters versus junction temperature.

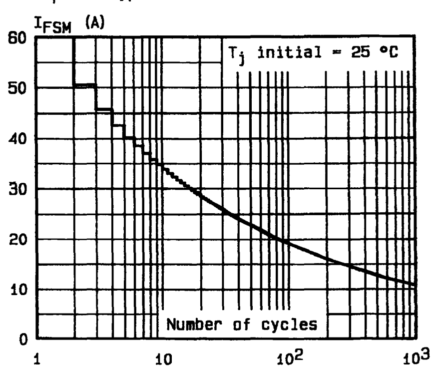


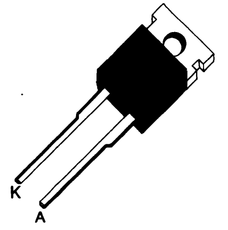
Fig.12 - Non repetitive surge peak current versus number of cycles

SGS-THOMSON MICROELECTRONICS

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p < 10\mu s$	130	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 120°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_P = 10ms$ sinusoidal	100	A
P	Power Dissipation	$T_{case} = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 08P-			Unit
		200A	300A	400A	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 8A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			75	ns
t_{rr}		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			35	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 32A/µs	V_{CC} = 200V I_F = 8A $L_p \le$ 0.05µH T_j = 100°C See Figure 11			75	ns
	di_F/dt = – 64A/µs			50		
I_{RM}	di_F/dt = – 32A/µs				2.2	A
	di_F/dt = – 64A/µs			2.8		

TURN -OFF OVERVOLTAGE COEFFICIENT - (With Series Inductance)

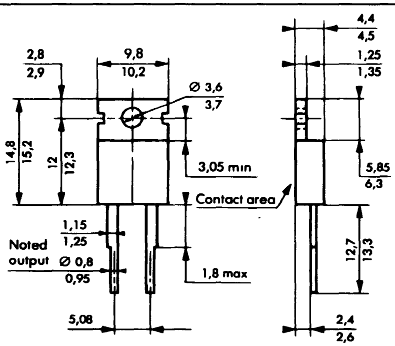
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 120V $I_F = I_{F(AV)}$ See note di_F/dt = – 8A/µs L_p = 9µH See figure 12		3.3		

Note : Applicable to BYT 08 P-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.024\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.024\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value : 80cm.N
Maximum torque value · 100cm.N

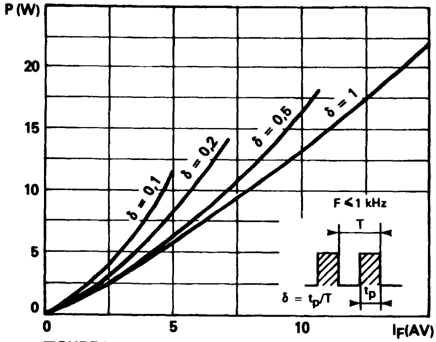


FIGURE 1 : Low frequency power losses versus average current.

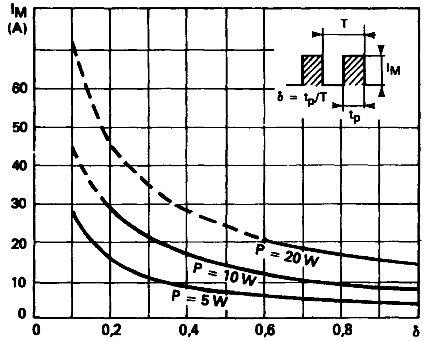


FIGURE 2 : Peak current versus form factor

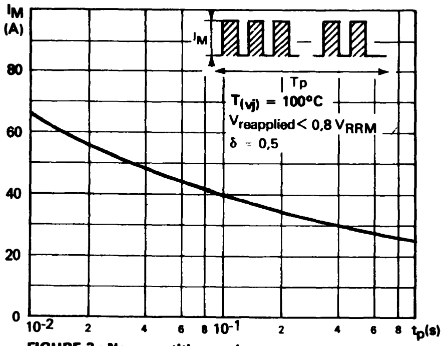


FIGURE 3 : Non repetitive peak surge current versus overload duration.

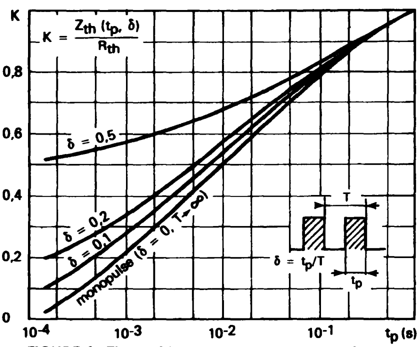


FIGURE 4 : Thermal impedance versus pulse width.

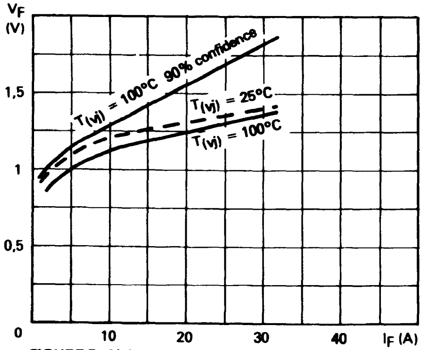


FIGURE 5 : Voltage drop versus forward current.

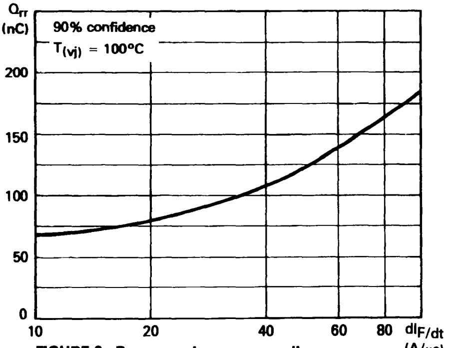


FIGURE 6 : Recovery charge versus dI_F/dt.

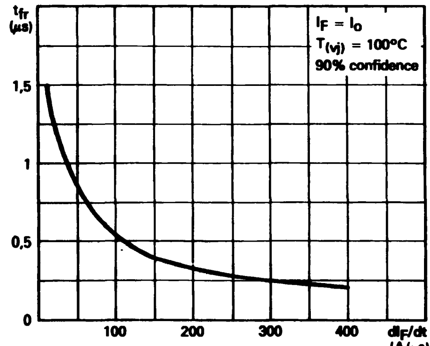


FIGURE 7 : Recovery time versus dI_F/dt.

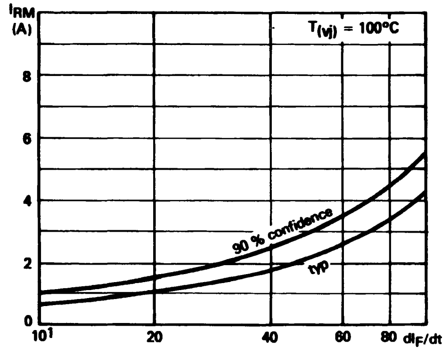


FIGURE 8 : Peak reverse current versus dI_F/dt.

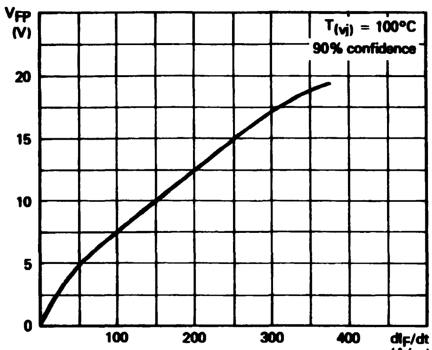


FIGURE 9 : Peak forward voltage versus dI_F/dt.

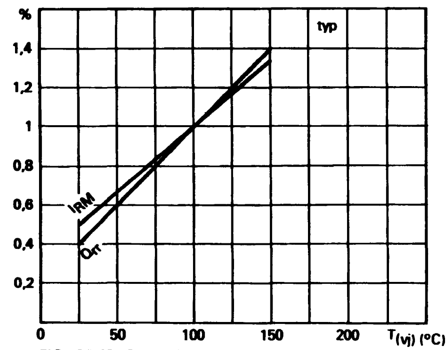


FIGURE 10 : Dynamic parameters versus junction temperature.

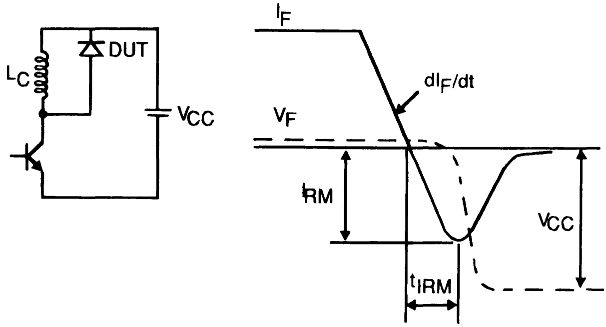


Figure 11 : Turn-off switching characteristics (without series inductance).

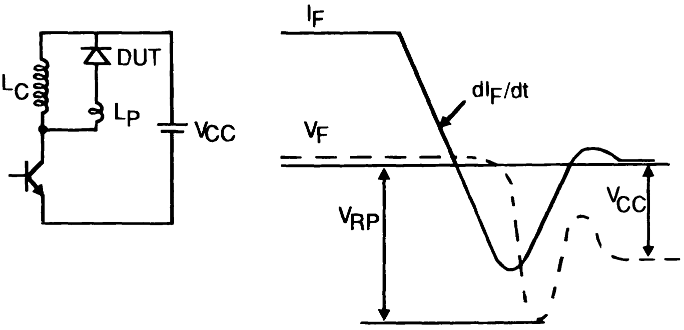


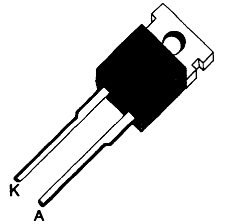
Figure 12 : Turn-off switching characteristics (with series inductance).

BYT 08P-600A/800A

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p < 10\mu s$	100	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 115°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_P = 10ms$ sinusoidal	50	A
P	Power Dissipation	$T_{case} = 115°C$	17	W
T_{stg} T_j	Storage and Junction Temperature Range		− 40 to + 150	°C

Symbol	Parameter	BYT 08P-		Unit
		600A	800A	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			35	µA
	$T_j = 100°C$				2	mA
V_F	$T_j = 25°C$	$I_F = 8A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			120	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -32A/\mu s$	$V_{CC} = 200V$ $I_F = 8A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See Figure 1			160	ns
	$dI_F/dt = -64A/\mu s$			100		
I_{RM}	$dI_F/dt = -32A/\mu s$				4	A
	$dI_F/dt = -64A/\mu s$			5		

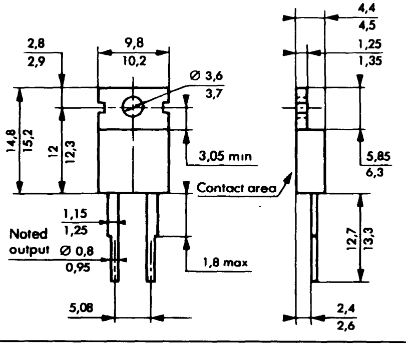
TURN -OFF OVERVOLTAGE COEFFICIENT - With Series Inductance

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 150V$ $I_F = I_{F(AV)}$ $dI_F/dt = -8A/\mu s$ $L_p = 12\mu H$ See figure 2			4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.04\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.04\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method . by conduction (method C)
Marking : type number
Weight · 2.42g
Recommended torque value . 80cm.N
Maximum torque value · 100cm.N

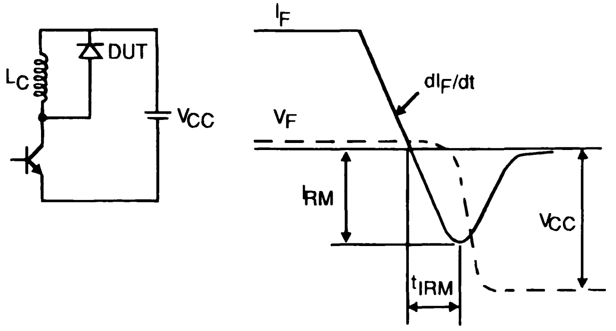


Figure 1 : Turn-off switching characteristics (without series inductance).

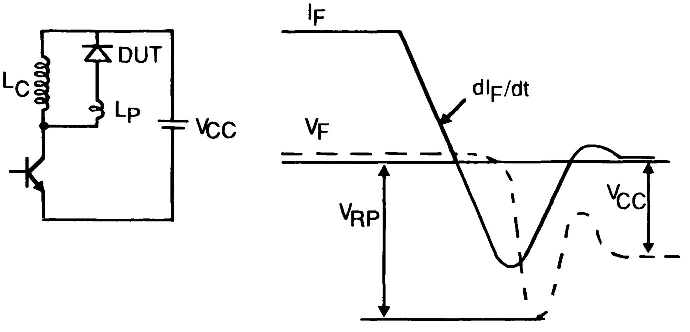


Figure 2 : Turn-off switching characteristics (with series inductance).

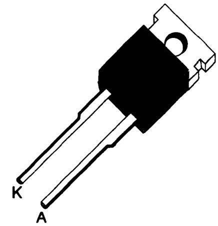
SGS-THOMSON MICROELECTRONICS

BYT 08P-1000A

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	100	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 115°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	50	A
P	Power Dissipation	$T_{case} = 115°C$	17	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				2	mA
V_F	T_j = 25°C	I_F = 8A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			155	ns
t_{rr}		I_F = 0.5A I_R=1A I_{rr} = 0.25A			65	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 32A/µs	V_{CC} = 200V I_F = 8A $L_p \leq$ 0.05µH T_j = 100°C See Figure 1			200	ns
	di_F/dt = – 64A/µs			120		
I_{RM}	di_F/dt = – 32A/µs				5.5	A
	di_F/dt = – 64A/µs			6		

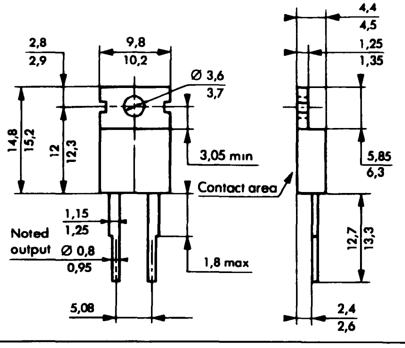
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ di_F/dt = – 8A/µs L_p = 12µH See Figure 2			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.041\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.041\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value : 80cm.N
Maximum torque value : 100cm.N

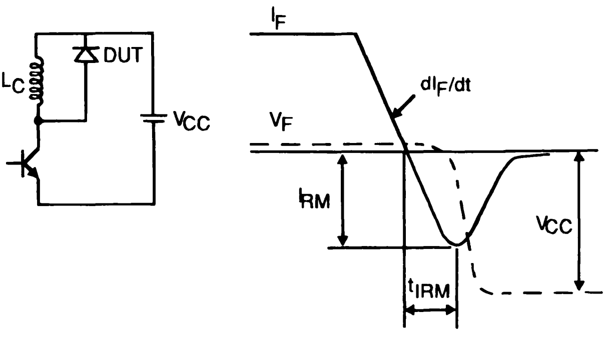


Figure 1 : Turn-off switching characteristics (without series inductance).

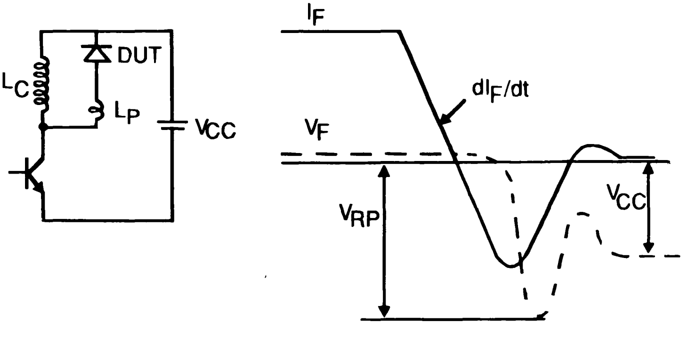


Figure 2 : Turn-off switching characteristics (with series inductance).

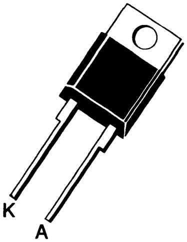
SGS-THOMSON
MICROELECTRONICS

BYT 08PI-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF

Insulating voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	130	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 105°C δ = 0.5	8	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoïdal	100	A
P	Power Dissipation	T_{case} = 80°C	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 08PI-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	3.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			15	µA
	$T_j = 100°C$				2.5	mA
V_F	$T_j = 25°C$	$I_F = 8A$			1.5	V
	$T_j = 100°C$				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $di_F/dt = -15A/\mu s$ $V_R = 30V$			75	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			35	

TURN -OFF SWITCHING CHARACTERISTICS ((Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -32A/\mu s$	$V_{CC} = 200V$ $I_F = 8A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See Figure 11			75	ns
	$di_F/dt = -64A/\mu s$			50		
I_{RM}	$di_F/dt = -32A/\mu s$				2.2	A
	$di_F/dt = -64A/\mu s$			2.8		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

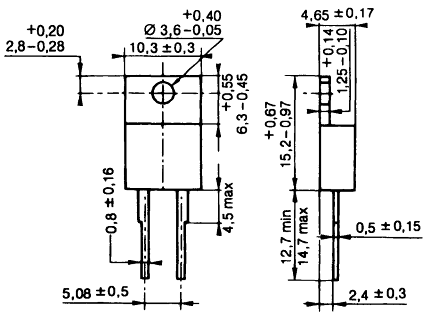
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 120V$ $I_F = I_{F(AV)}$ See note $di_F/dt = -8A/\mu s$ $L_p = 9\mu H$ See Figure 12		3.3		

Note : Applicable to BYT 08 PI-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.024\ I_F$ $\qquad$ $P = 1.1 \times I_{F(AV)} + 0.024 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.1g
Recommended torque value : 80cm.N
Maximum torque value : 100cm.N

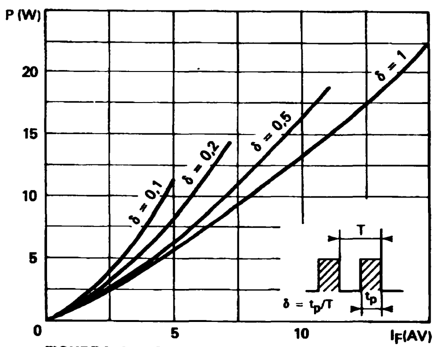


FIGURE 1 : Low frequency power losses versus average current.

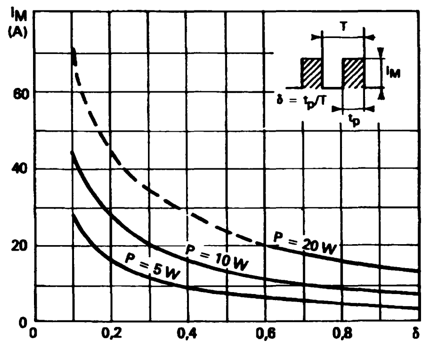


FIGURE 2 : Peak current versus form factor.

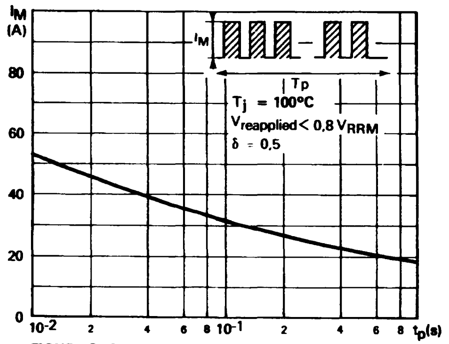


FIGURE 3 : Non repetitive peak surge current versus overload duration.

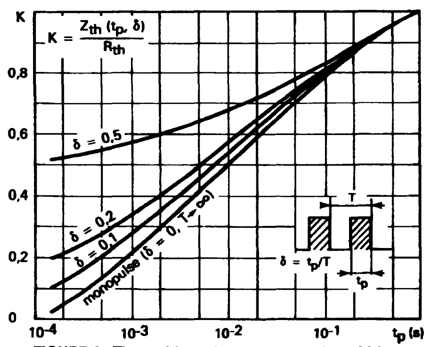


FIGURE 4 : Thermal impedance versus pulse width.

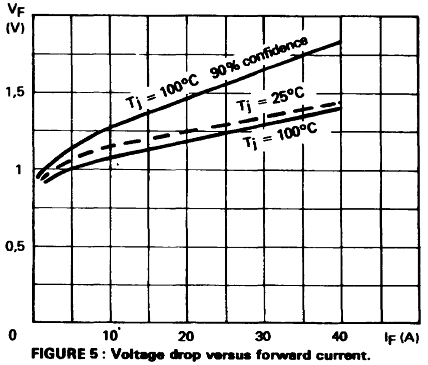


FIGURE 5 : Voltage drop versus forward current.

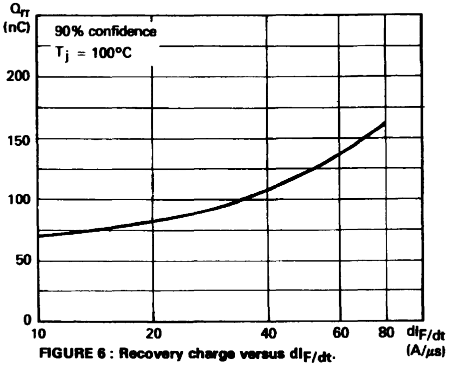


FIGURE 6 : Recovery charge versus dI_F/dt.

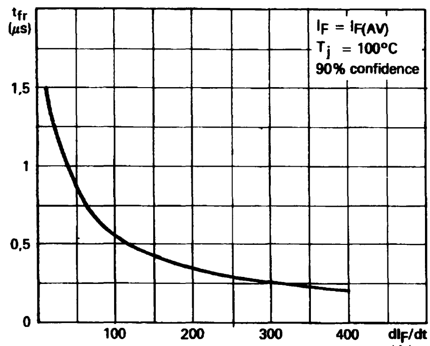


FIGURE 7 : Recovery time versus dI_F/dt.

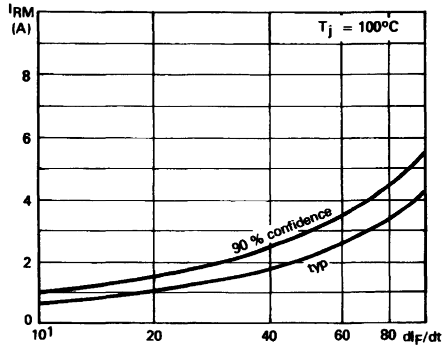


FIGURE 8 : Peak reverse current versus dI_F/dt.

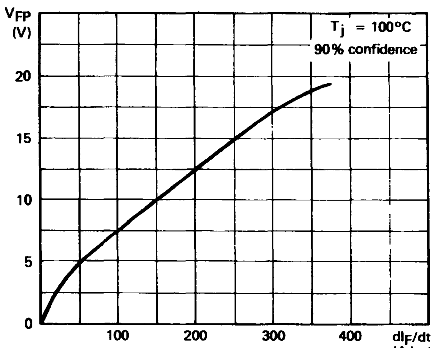


FIGURE 9 : Peak forward voltage versus dI_F/dt.

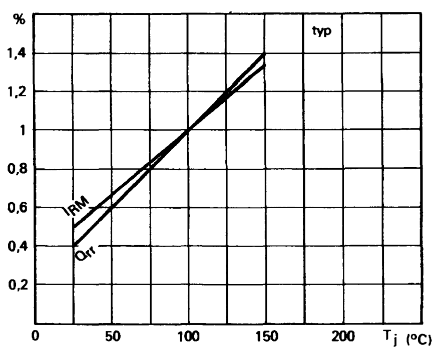


FIGURE 10 : Dynamic parameters versus junction temperature.

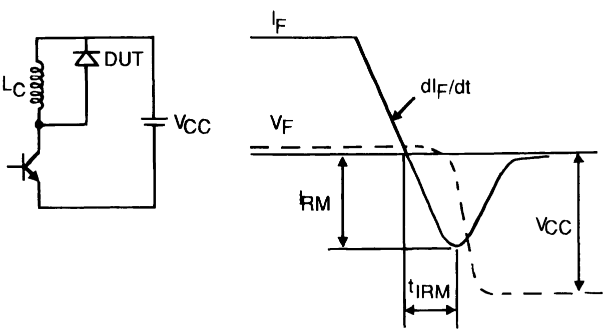


Figure 11 : Turn-off switching characteristics (without series inductance).

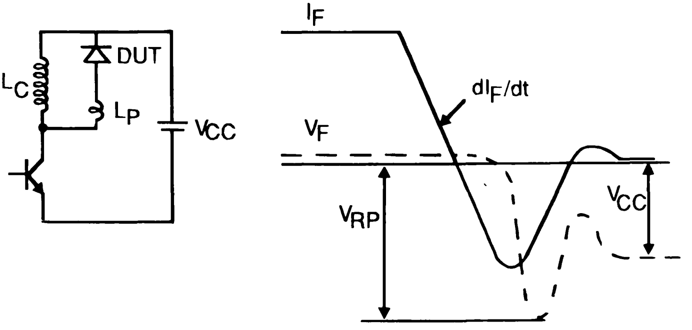


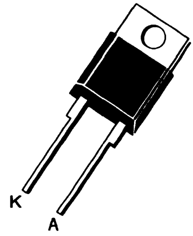
Figure 12 : Turn-off switching characteristics (with series inductance).

BYT 08PI-600/800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSES RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF

Insulting voltage 500 V_{RMS}



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	100	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 80°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	50	A
P	Power Dissipation	$T_{case} = 80°C$	17	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 08PI-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				2	mA
V_F	T_j = 25°C	I_F = 8A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			120	ns
		I_F = 0.5A I_R=1A I_{rr} = 0.25A			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 32A/µs	V_{CC} = 200V I_F = 8A $L_p \leq$ 0.05µH T_j = 100°C See Figure 1			160	ns
	dI_F/dt = – 64A/µs			100		
I_{RM}	dI_F/dt = – 32A/µs				4	A
	dI_F/dt = – 64A/µs			5		

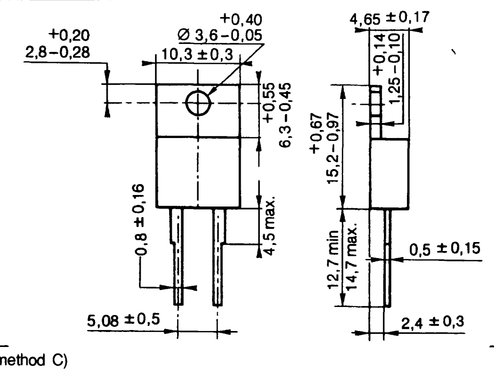
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 150V $I_F = I_{F(AV)}$ dI_F/dt = – 8A/µs L_p = 12µH See Figure 2			4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.04\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.04\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method by conduction (method C)
Marking · type number
Weight 2 1g
Recommended torque value · 80cm N
Maximum torque value 100cm.N

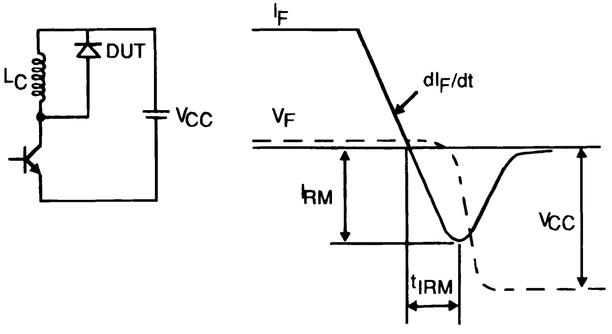


Figure 1 : Turn-off switching characteristics (without series inductance).

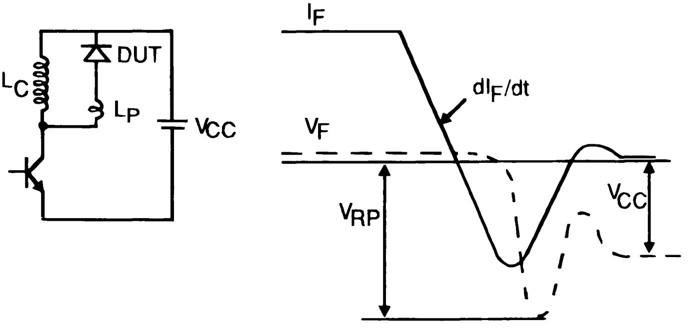


Figure 2 : Turn-off switching characteristics (with series inductance).

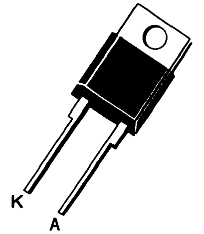
SGS-THOMSON
MICROELECTRONICS

BYT 08PI-1000

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSES RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF

Insulting voltage 500 V_{RMS}



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	100	A
$I_{F(RMS)}$	RMS Forward Current		16	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 80°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	50	A
P	Power Dissipation	$T_{case} = 80°C$	17	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				2	mA
V_F	T_j = 25°C	I_F = 8A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			155	ns
		I_F = 0.5A I_R=1A I_{rr} = 0.25A			65	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 32A/µs	V_{CC} = 200V I_F = 8A $L_p \le$ 0.05µH T_j = 100°C See Figure 1			200	ns
	dI_F/dt = – 64A/µs			120		
I_{RM}	dI_F/dt = – 32A/µs				5.5	A
	dI_F/dt = – 64A/µs			6		

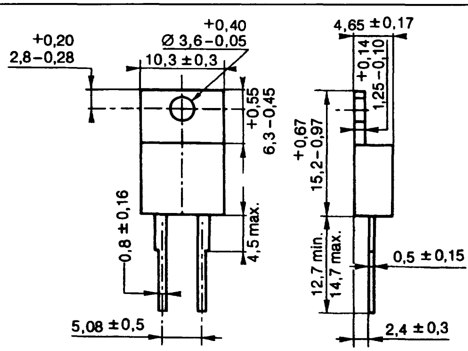
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ dI_F/dt = – 8A/µs L_p = 12µH See Figure 2			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.04\ I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.04\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.1g
Recommended torque value : 80cm.N
Maximum torque value : 100cm.N

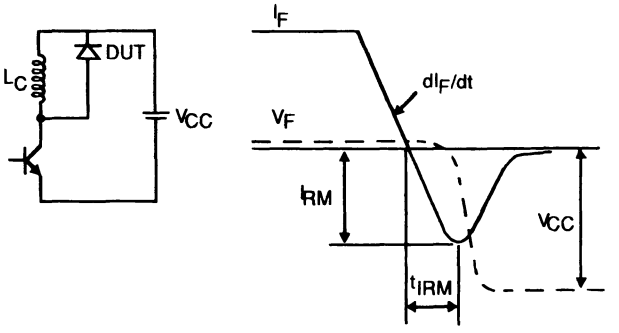


Figure 1 : Turn-off switching characteristics (without series inductance).

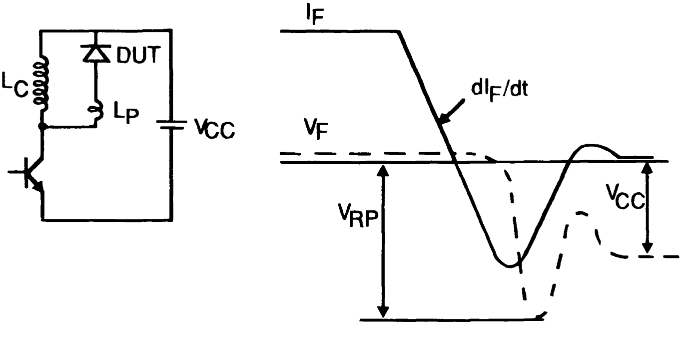
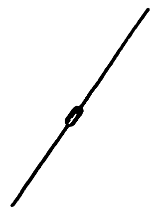


Figure 2 : Turn-off switching characteristics (with series inductance).

BYT 11-600 → 1000

FAST RECOVERY RECTIFIER DIODES

- SOFT RECOVERY
- VERY HIGH VOLTAGE
- SMALL RECOVERY CHARGE



F 126
(Plastic)

APPLICATIONS
- ANTISATURATION DIODES FOR TRANSISTOR BASE DRIVE
- SNUBBER DIODES

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	20	A
$I_{F\,(AV)}$	Average Forward Current*	$T_a = 75°C$ $\delta = 0.5$	1	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	35	A
P_{tot}	Power Dissipation*	$T_a = 75°C$	1.25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	BYT 11–			Unit
		600	800	1000	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-a)}$	Junction-ambient*	60	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	μA
V_F	T_j = 25°C	I_F = 1A			1.3	V

RECOVERY CHARACTERISTICS

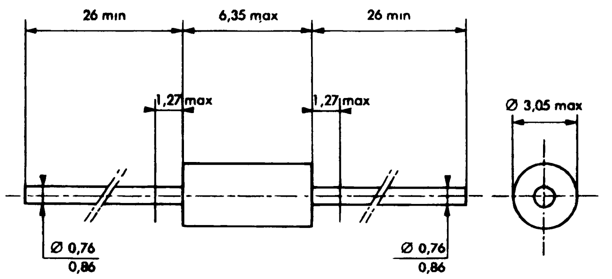
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 0.5A	I_R = 1A	I_{rr} = 0.25A			100	ns

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.075\ I_F$ $\quad$ $P = 1.1 \times I_{F(AV)} + 0.075 \times I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

F 126 Plastic



Cooling method : by convection (method A)
Marking : type number
Weight : 0 4g

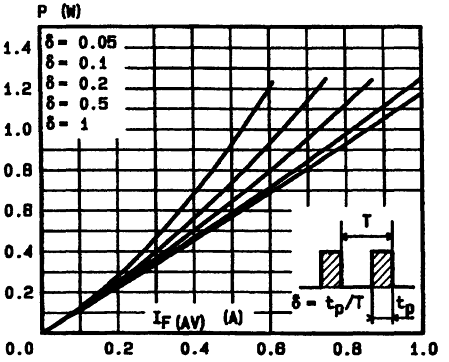


Fig.1 - Maximum average power dissipation versus average forward current.

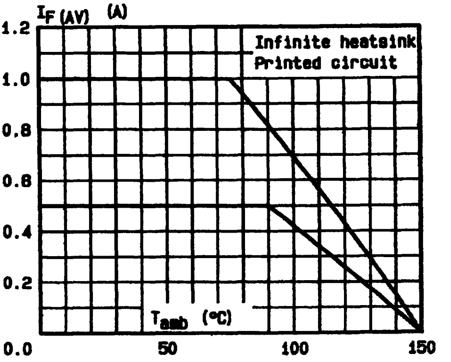


Fig.2 - Average forward current versus ambient temperature.

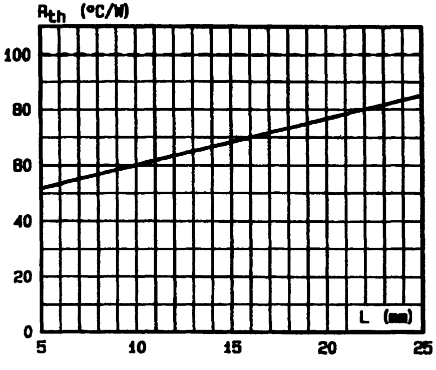
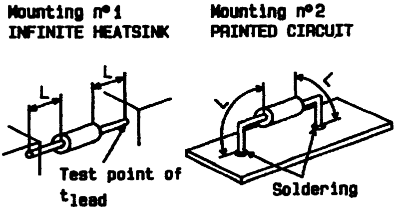


Fig.3 - Thermal resistance versus lead length.



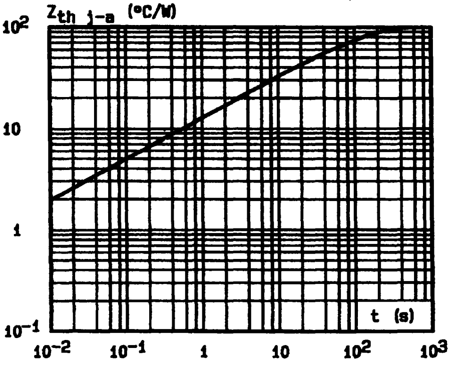


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

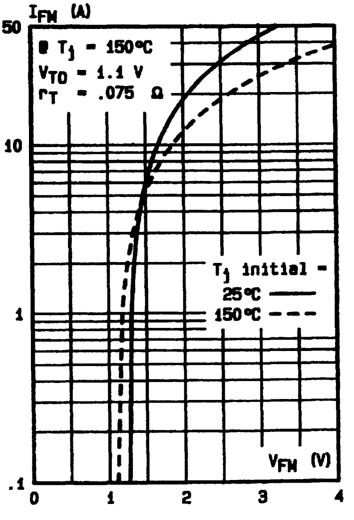


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

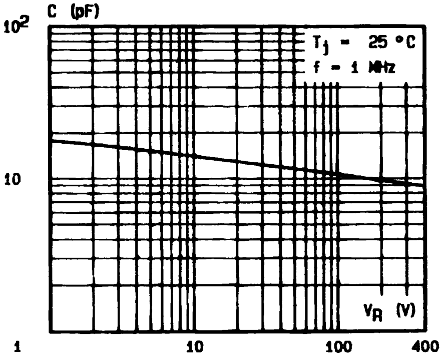


Fig.6 - Capacitance versus reverse applied voltage

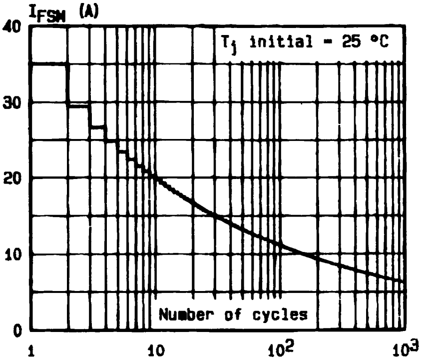


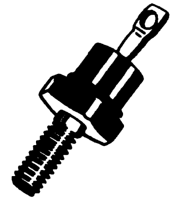
Fig.7 - Non repetitive surge peak current versus number of cycles

SGS-THOMSON MICROELECTRONICS

BYT 12-200 →400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



DO 4
(Metal)

SUITABLE APPLICATIONS :
- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	200	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 100°C $\delta = 0.5$	12	A
I_{FSM}	Surge non Repetitive Forward Current	t_P = 10ms sinusoidal	200	A
P	Power Dissipation	T_{case} = 100°C	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 12–			Unit
		200	**300**	**400**	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			100	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 50A/µs	V_{CC} = 200V I_F = 12A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			75	ns
	di_F/dt = – 100A/µs			50		
I_{RM}	di_F/dt = – 50A/µs				3.8	A
	di_F/dt = – 100A/µs			4.3		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

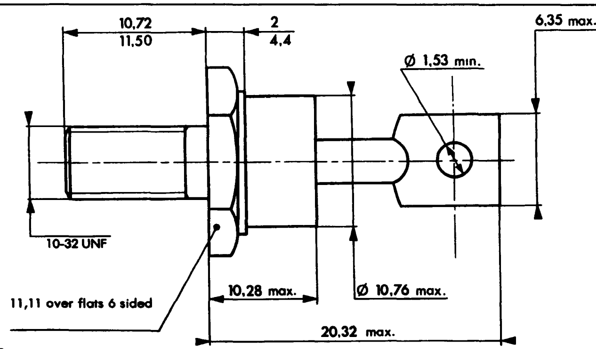
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 120V $I_F = I_{F(AV)}$ See note di_F/dt = – 12A/µs L_p = 7µH See Figure 12		3.3		

Note : Applicable to BYT12-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.022\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.022\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 4 Metal



Cooling method : by conduction (method C)
Marking : Cathode connected to case · type number
Anode connected to case . type number + suffix R (consult us for these reverse version data sheets)
Weight : 5 1g
Recommended torque value · 180cm.N
Maximum torque value · 220cm.N

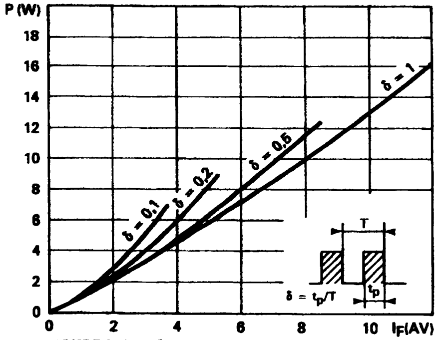


FIGURE 1 : Low frequency power losses versus average current.

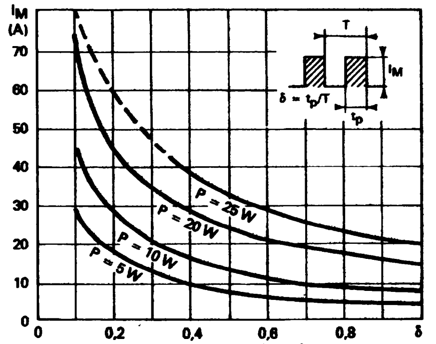


FIGURE 2 : Peak current versus form factor.

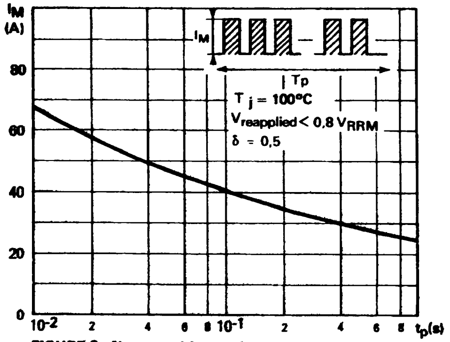


FIGURE 3 : Non repetitive peak surge current versus overload duration.

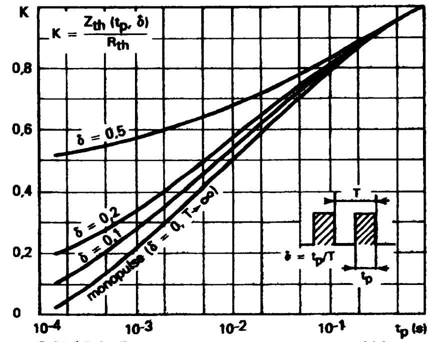


FIGURE 4 : Thermal impedance versus pulse width.

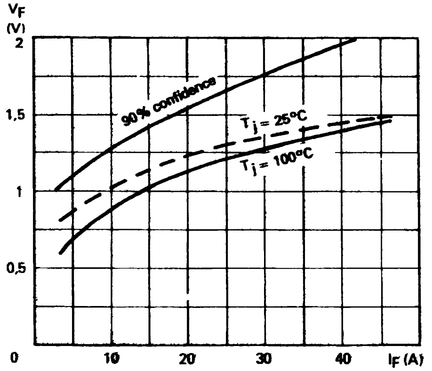


FIGURE 5 : Voltage drop versus forward current.

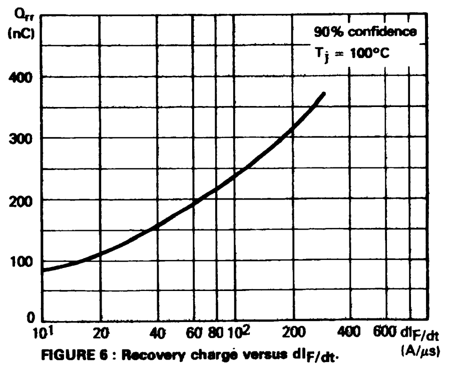


FIGURE 6 : Recovery charge versus dI_F/dt.

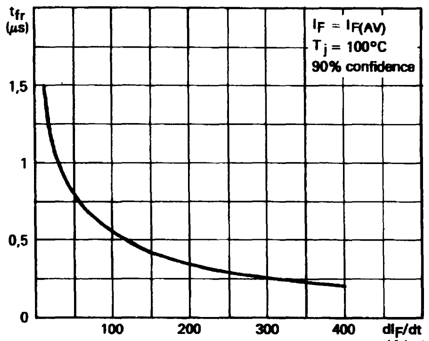


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

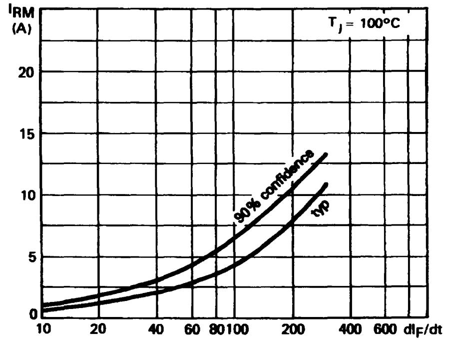


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

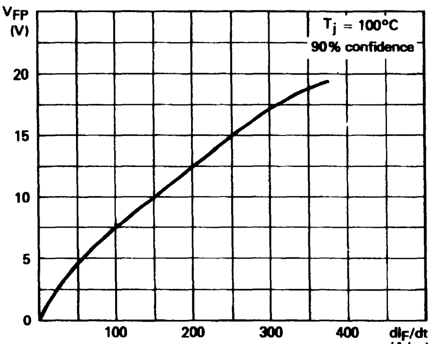


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

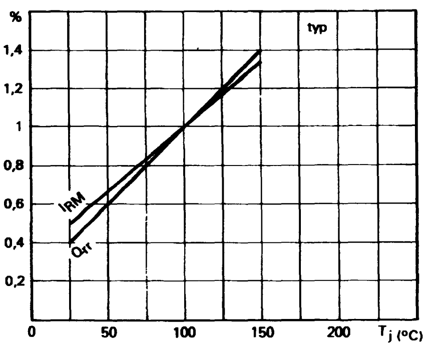


FIGURE 10 : Dynamic parameters versus junction temperature.

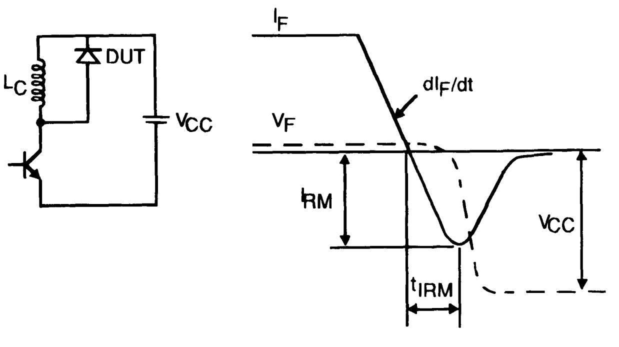


Figure 11 : Turn-off switching characteristics (without series inductance).

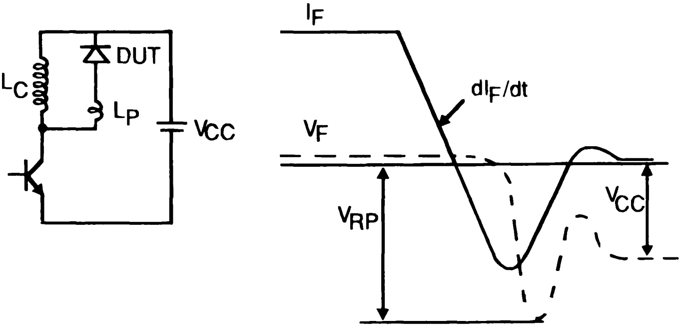


Figure 12 : Turn-off switching characteristics (with series inductance).

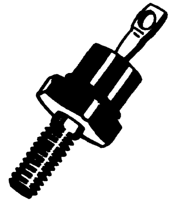
SGS-THOMSON MICROELECTRONICS

BYT 12-600→800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 4
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	200	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 100°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge non Repetitive Forward Current	$t_P = 10ms$ sinusoidal	200	A
P	Power Dissipation	$T_{case} = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 12-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			50	µA
	$T_j = 100°C$				2.5	mA
V_F	$T_j = 25°C$	$I_F = 12A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25\ °C$	$I_F = 1\ A$ $dI_F/dt = -15\ A/\mu s$ $V_R = 30\ V$			120	ns
		$I_F = 0.5\ A$ $I_R = 1\ A$ $I_{rr} = 0.25\ A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -50A/\mu s$	$V_{CC} = 200V$ $I_F = 12A$ $L_p \le 0.05\mu H$ $T_j = 100°C$ See Figure 11			160	ns
	$di_F/dt = -100A/\mu s$			100		
I_{RM}	$di_F/dt = -50A/\mu s$				6	A
	$di_F/dt = -100A/\mu s$			7.5		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

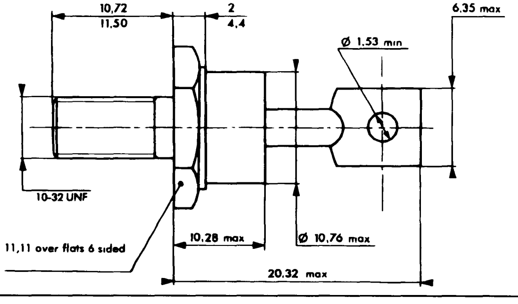
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 200V$ $I_F = I_{F(AV)}$ See note $di_F/dt = -12A/\mu s$ $L_p = 12\mu H$ See Figure 12			4	

Note : Applicable to BYT 12-800 only

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.026\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.026 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 4 Metal



Cooling method . by conduction (method C)
Marking Cathode connected to case . type number
Anode connected to case : type number = suffix R (consult us for these reverse version data sheets)
Weight 5.1g
Recommended torque value . 180cm N

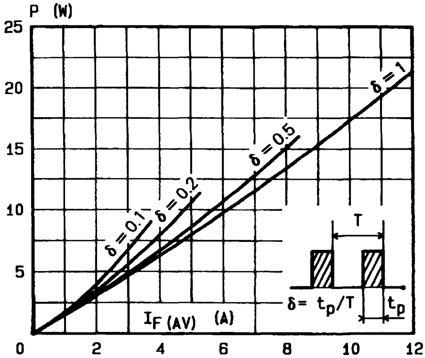


FIGURE 1 : Low frequency power losses versus average current.

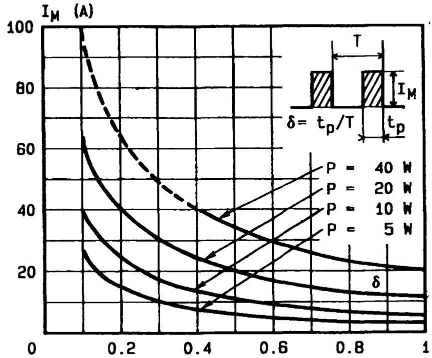


FIGURE 2 : Peak current versus form factor.

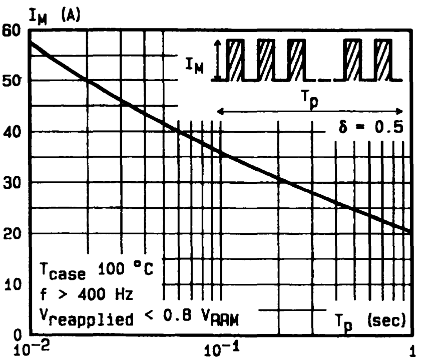


FIGURE 3 : Non repetitive peak surge current versus overload duration.

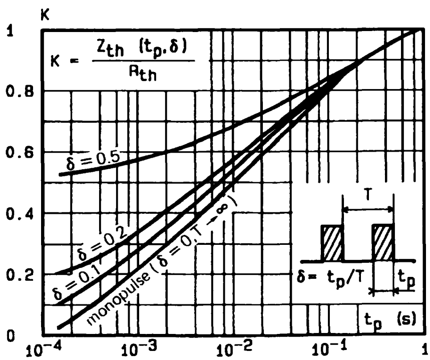


FIGURE 4 : Thermal impedance versus pulse width.

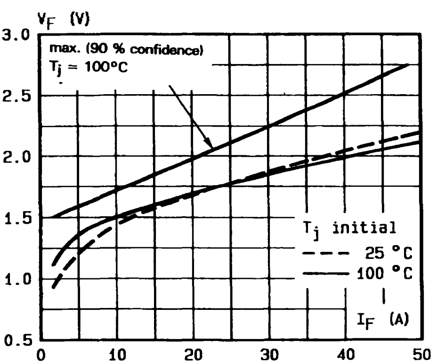


FIGURE 5 : Voltage drop versus forward current.

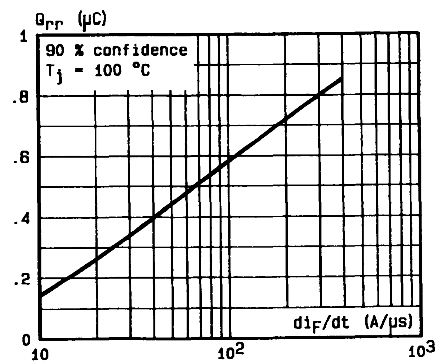


FIGURE 6 : Recovery charge versus di_F/dt.

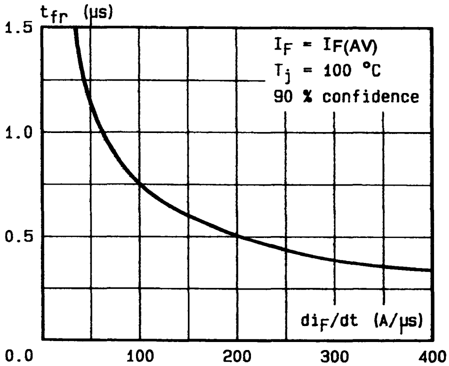


FIGURE 7 : Recovery time versus dI_F/dt.

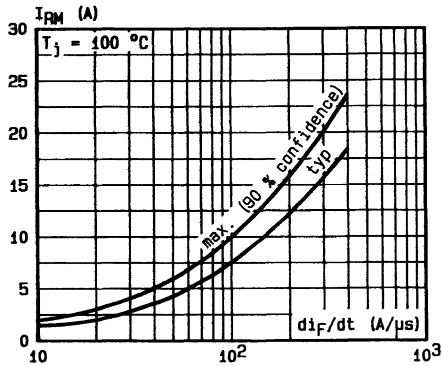


FIGURE 8 : Peak reverse current versus dI_F/dt.

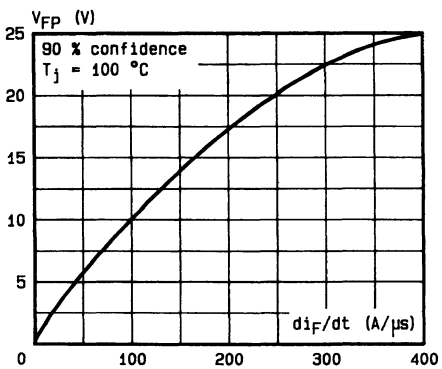


FIGURE 9 : Peak forward voltage versus dI_F/dt.

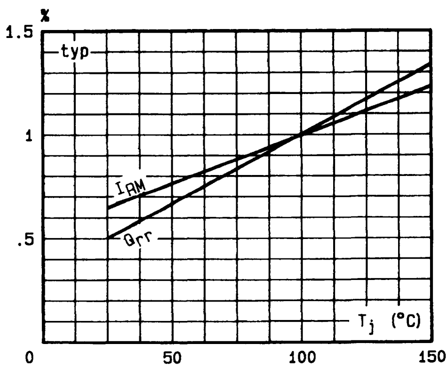


FIGURE 10 : Dynamic parameters versus junction temperature.

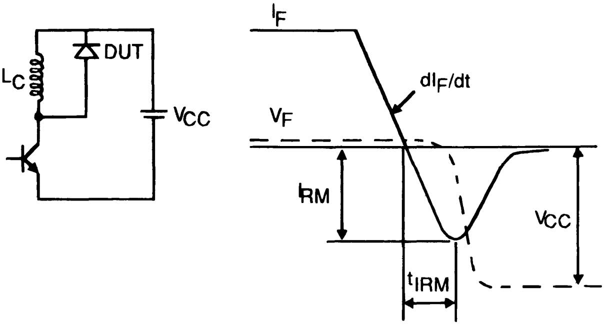


Figure 11 : Turn-off switching characteristics (without series inductance).

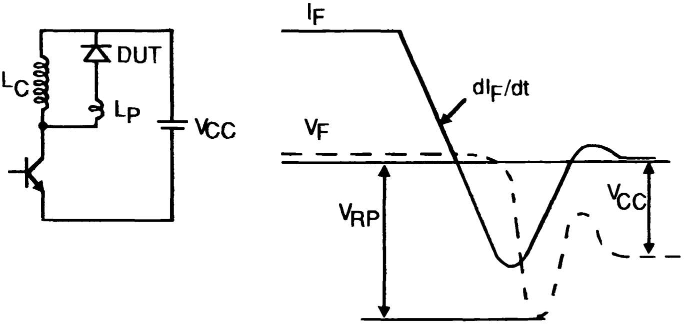


Figure 12 : Turn-off switching characteristics (with series inductance).

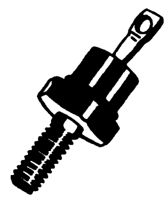
SGS-THOMSON MICROELECTRONICS

BYT 12-1000

FAST RECOVERY RECTIFIER DIODES

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 4
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	150	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 85°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	75	A
P	Power Dissipation	$T_{case} = 85°C$	26	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			155	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 50A/µs	V_{CC} = 200V I_F = 12A $L_p \leq 0.05$µH T_j = 100°C See Figure 11			200	ns
	dI_F/dt = – 100A/µs			120		
I_{RM}	dI_F/dt = – 50A/µs				7.8	A
	dI_F/dt = – 100A/µs			9		

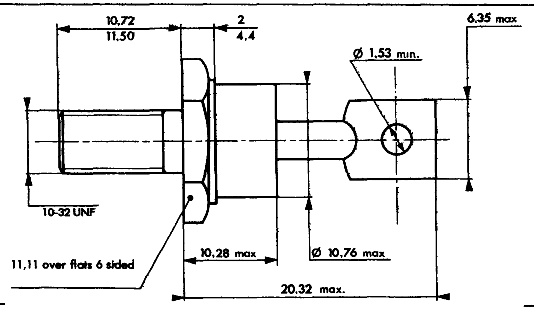
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ dI_F/dt = – 12A/µs L_p = 12µH See Figure 12			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.026\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.026\ I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 4 Metal



Cooling method . by conduction (method C)
Marking Cathode connected to case · type number
Anode connected to case · type number = suffix R (consult us for reverse datasheets)Weight · 5.1g
Recommended torque value : 180cm. N
Maximum torque value · 220cm. N

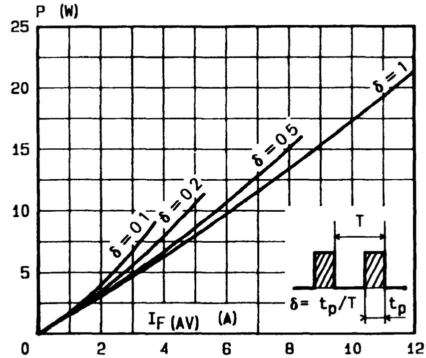


FIGURE 1 : Low frequency power losses versus average current.

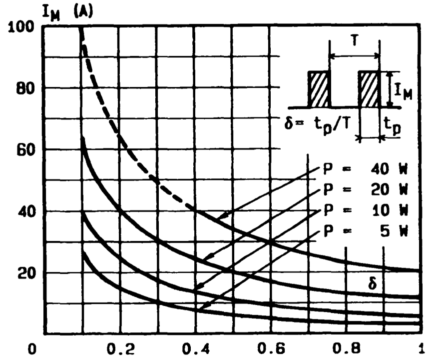


FIGURE 2 : Peak current versus form factor.

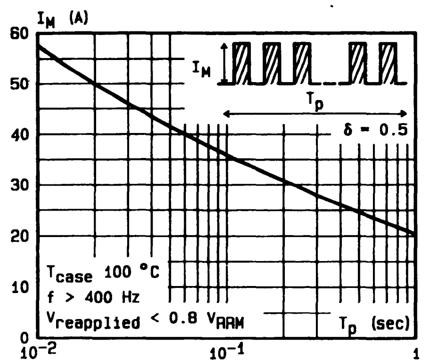


FIGURE 3 : Non repetitive peak surge current versus overload duration.

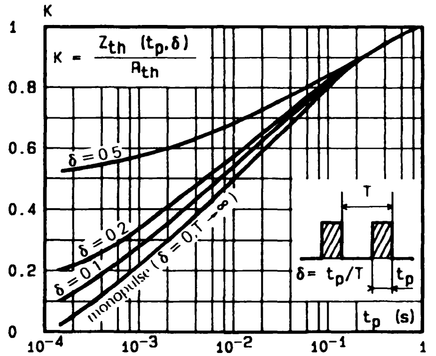


FIGURE 4 : Thermal impedance versus pulse width.

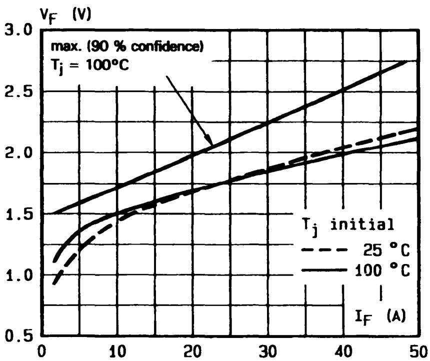


FIGURE 5 : Voltage drop versus forward current.

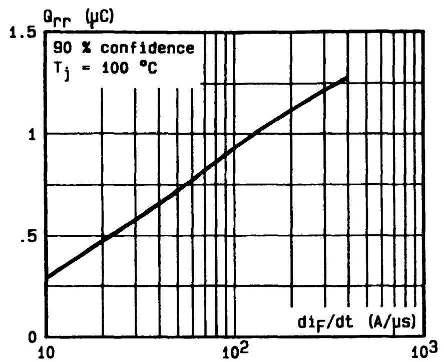


FIGURE 6 : Recovery charge versus di_F/dt.

SGS-THOMSON MICROELECTRONICS

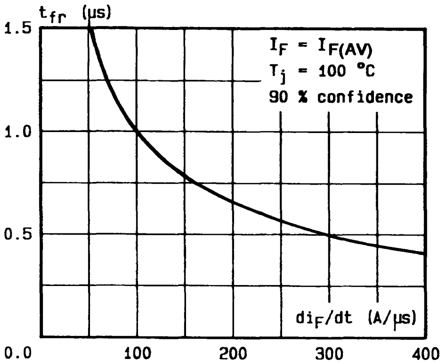


FIGURE 7 : Recovery time versus di_F/dt.

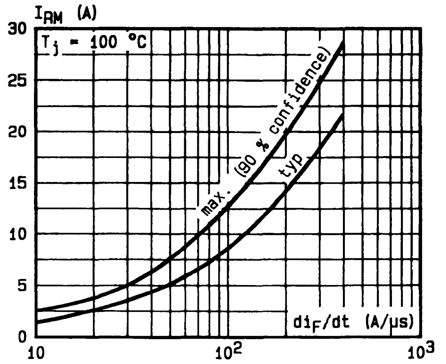


FIGURE 8 : Peak reverse current versus di_F/dt.

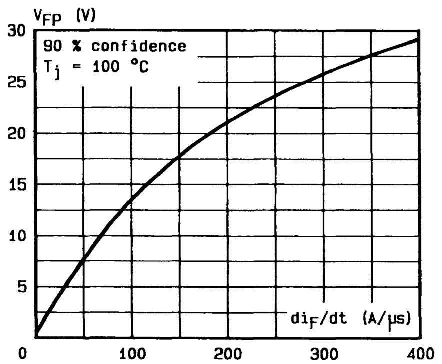


FIGURE 9 : Peak forward voltage versus di_F/dt.

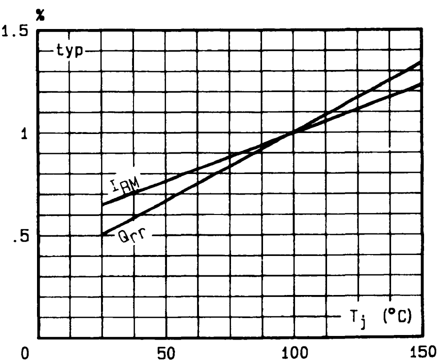


FIGURE 10 : Dynamic parameters versus junction temperature.

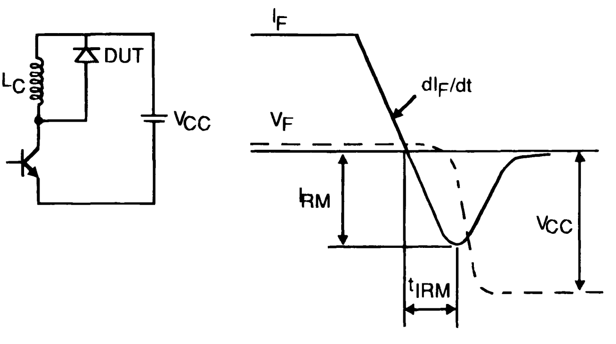


Figure 11 : Turn-off switching characteristics (without series inductance).

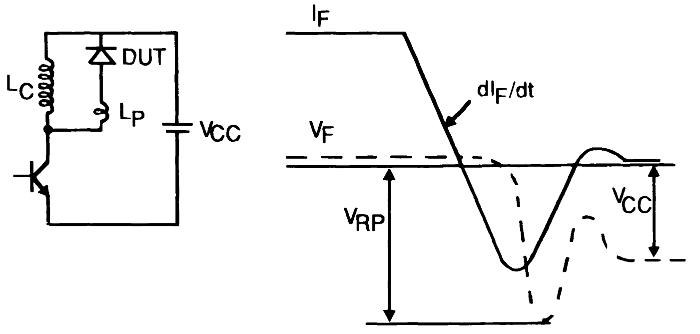
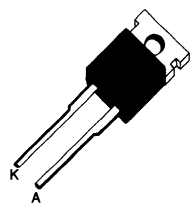


Figure 12 : Turn-off switching characteristics (withseries inductance).

FAST RECOVERY RECTIFIER DIODES

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	150	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 100°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge non Repetitive Forward Current		75	A
P	Power Dissipation	$T_{case} = 100°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 12 P-		Unit
		600 A	800 A	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			50	µA
	$T_j = 100°C$				2.5	mA
V_F	$T_j = 25°C$	$I_F = 12A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $\quad di_F/dt = -15A/\mu s$ $\quad V_R = 30V$			120	ns
		$I_F = 0.5A$ $\quad I_R = 1A$ $\quad I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -50A/\mu s$	$V_{CC} = 200V$ $\quad I_F = 12A$ $L_p \le 0.05\mu H$ $\quad T_j = 100°C$ See Figure 11			160	ns
	$di_F/dt = -100A/\mu s$			100		
I_{RM}	$di_F/dt = -50A/\mu s$				6	A
	$di_F/dt = -100A/\mu s$			28		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

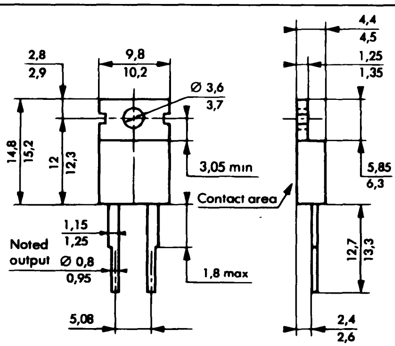
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $\quad V_{CC} = 150V$ $\quad I_F = I_{F(AV)}$ $di_F/dt = -12A/\mu s$ $\quad L_p = 4\mu H$ $\quad$ See Figure 12			4	

Note : Applicable to BYT 12 P-800 only.

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.026\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.026\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method . by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value . 80cm N
Maximum torque value : 100cm.N

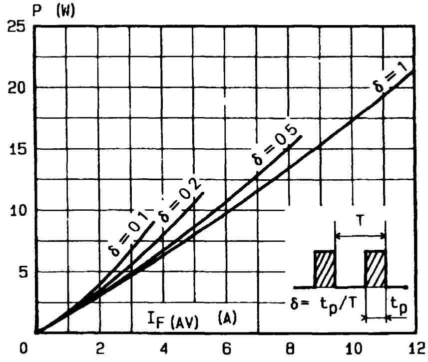


FIGURE 1 : Low frequency power losses versus average current.

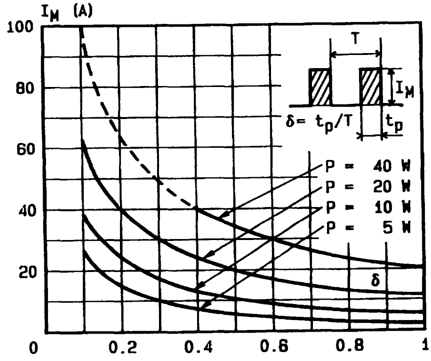


FIGURE 2 : Peak current versus form factor.

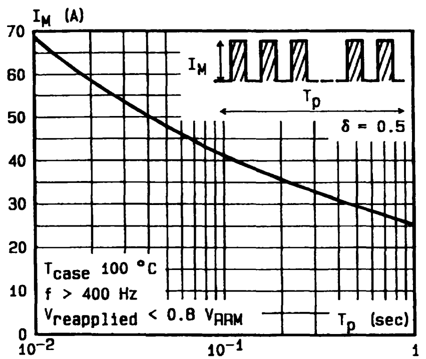


FIGURE 3 : Non repetitive peak surge current versus overload duration.

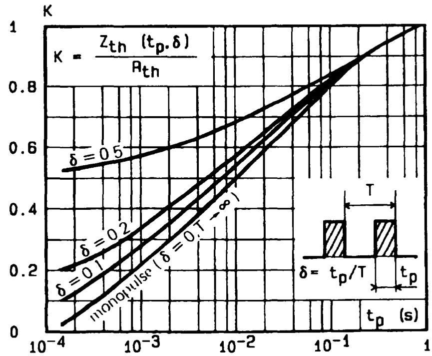


FIGURE 4 : Thermal impedance versus pulse width.

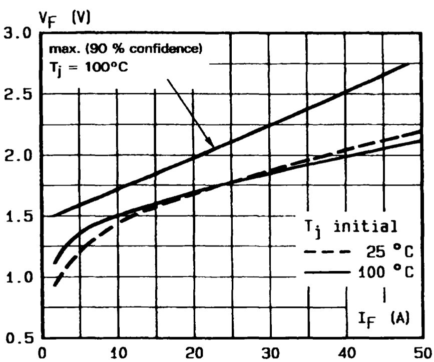


FIGURE 5 : Voltage drop versus forward current.

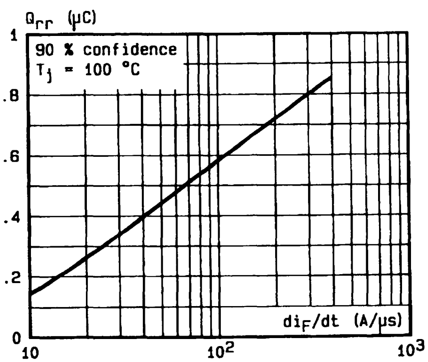


FIGURE 6 : Recovery charge versus di_F/dt.

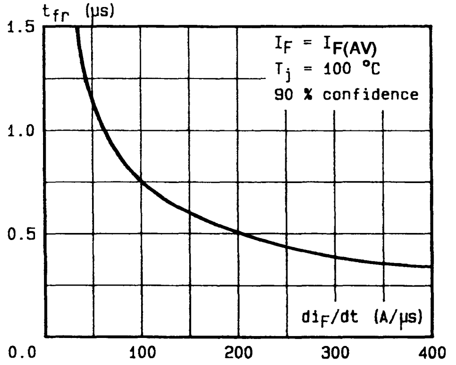


FIGURE 7 : Recovery time versus di_F/dt.

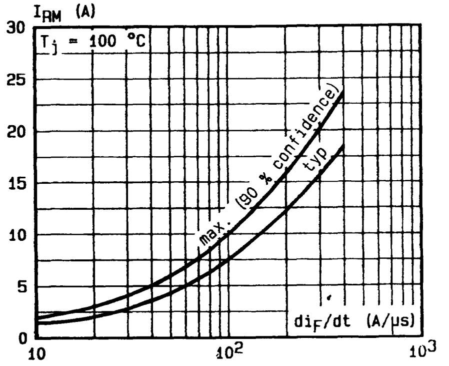


FIGURE 8 : Peak reverse current versus di_F/dt.

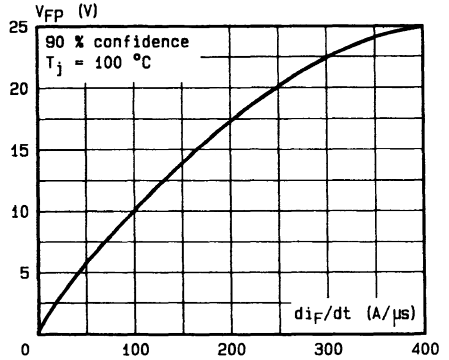


FIGURE 9 : Peak forward voltage versus di_F/dt.

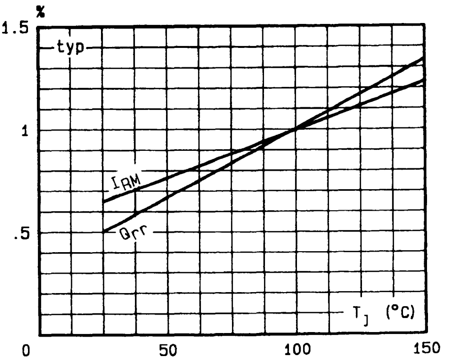


FIGURE 10 : Dynamic parameters versus junction temperature.

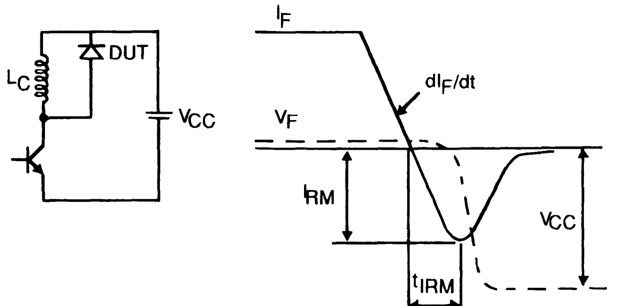


Figure 11 : Turn-off switching characteristics (without series inductance).

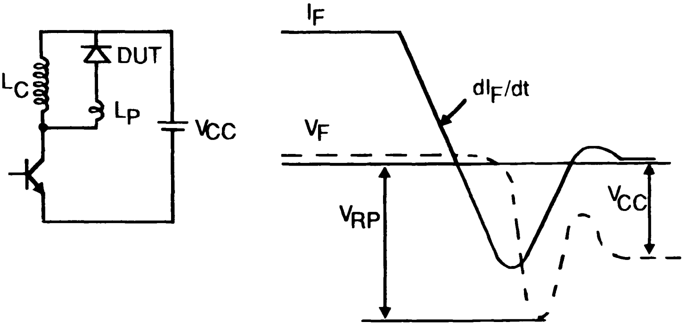


Figure 12 : Turn-off switching characteristics (with series inductance).

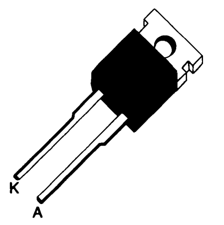
SGS-THOMSON
MICROELECTRONICS

BYT 12P-1000A

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	150	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case}=100°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	75	A
P	Power Dissipation	$T_{case}=100°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			155	ns
		I_F = 0.5A I_R = 1A I_{rr}=0.25A			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 50A/µs	V_{CC} = 200V I_F = 12A $L_p \le$ 0.05µH T_j = 100°C See Figure 11			200	ns
	dI_F/dt = – 100A/µs			120		
I_{RM}	dI_F/dt = – 50A/µs				7.8	A
	dI_F/dt = – 100A/µs			9		

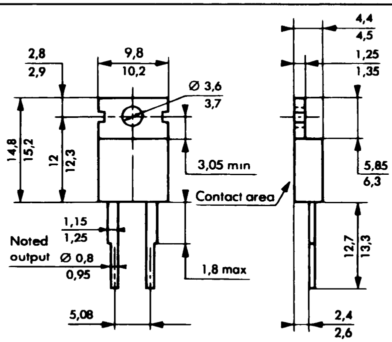
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F\,(AV)}$ dI_F/dt = – 12A/µs L_p = 12µH See Figure 12			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.026\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.026\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value : 80cm.N
Maximum torque value : 100cm.N

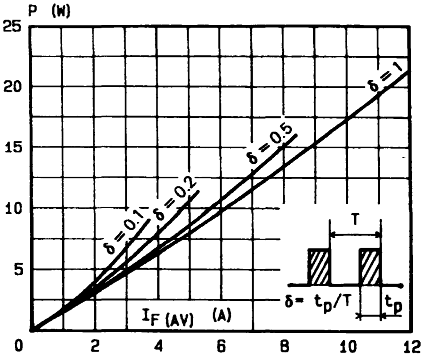


FIGURE 1 : Low frequency power losses versus average current.

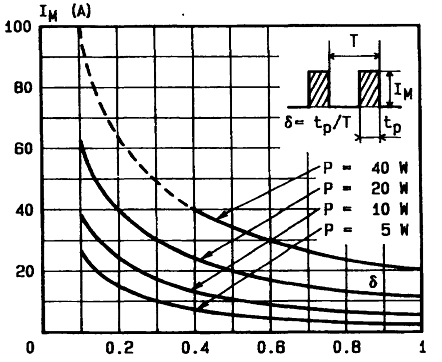


FIGURE 2 : Peak current versus form factor.

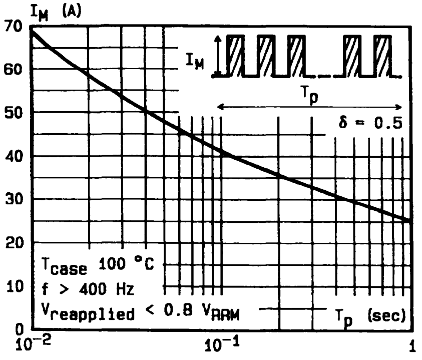


FIGURE 3 : Non repetitive peak surge current versus overload duration.

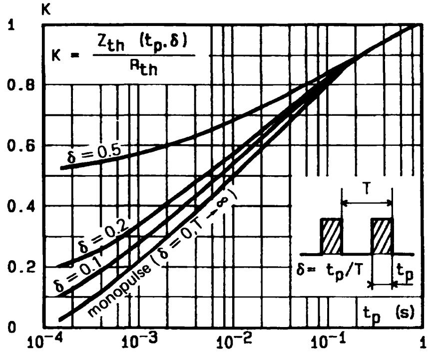


FIGURE 4 : Thermal impedance versus pulse width.

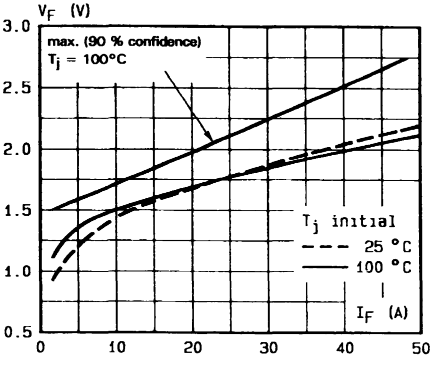


FIGURE 5 : Voltage drop versus forward current.

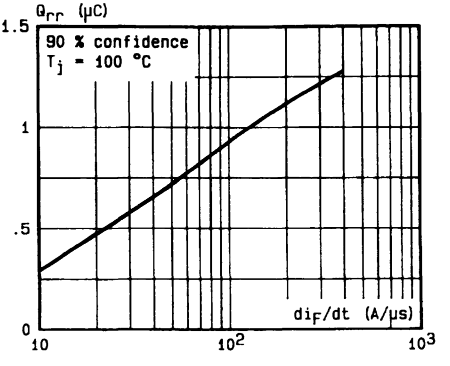


FIGURE 6 : Recovery charge versus di_F/dt.

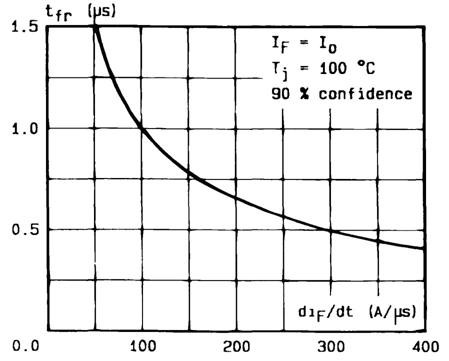


FIGURE 7 : Recovery time versus dI_F/dt.

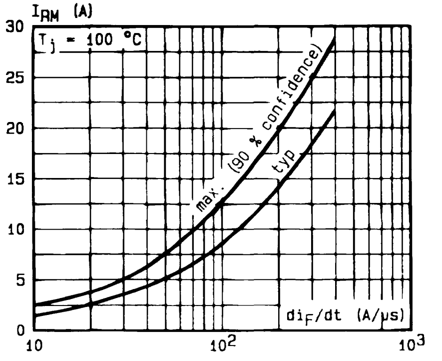


FIGURE 8 : Peak reverse current versus dI_F/dt.

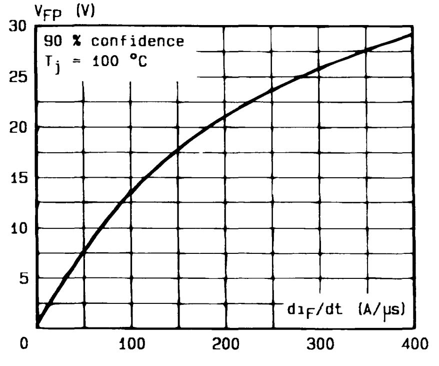


FIGURE 9 : Peak forward voltage versus dI_F/dt.

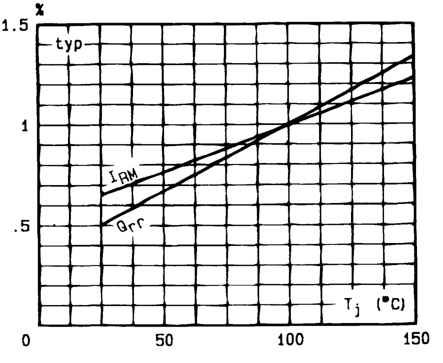


FIGURE 10 : Dynamic parameters versus junction temperature.

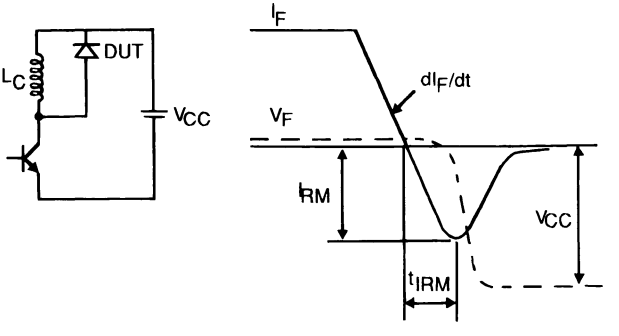


Figure 11 : Turn-off switching characteristics (without series inductance).

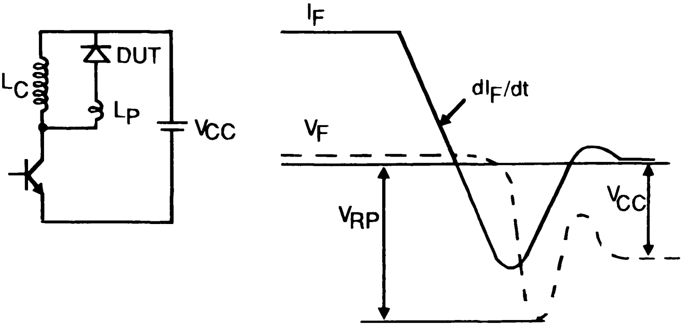


Figure 12 : Turn-off switching characteristics (with series inductance).

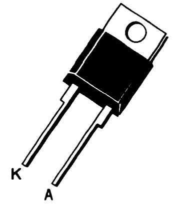
SGS-THOMSON
MICROELECTRONICS

BYT 12PI-600/800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSES RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF

Insulting voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	150	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	75	A
P	Power Dissipation	$T_{case} = 50°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		− 40 to + 150	°C

Symbol	Parameter	BYT 12PI-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			120	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 50A/µs	V_{CC} = 200V I_F = 12A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			160	ns
	dI_F/dt = – 100A/µs			100		
I_{RM}	dI_F/dt = – 50A/µs				6	A
	dI_F/dt = – 100A/µs			7.5		

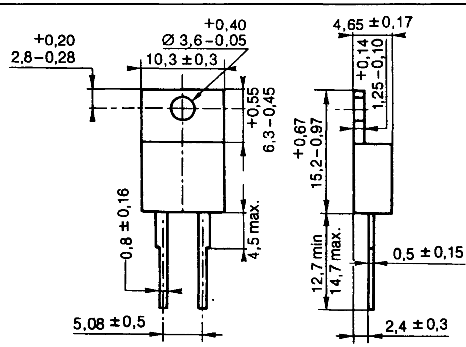
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 150V $I_F = I_{F(AV)}$ dI_F/dt = – 12A/µs L_p = 4µH See Figure 12			4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.026\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.026\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value : 80cm.N
Maximum torque value : 100cm N

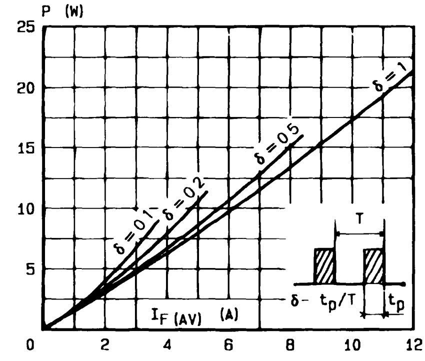


FIGURE 1 : Low frequency power losses versus average current.

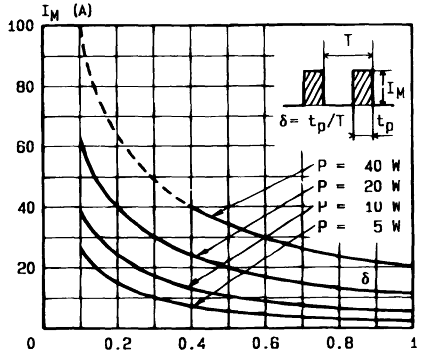


FIGURE 2 : Peak current versus form factor.

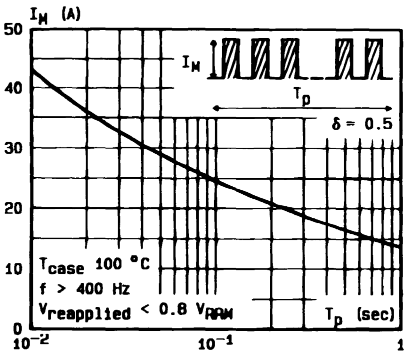


FIGURE 3 : Non repetitive peak surge current versus overload duration.

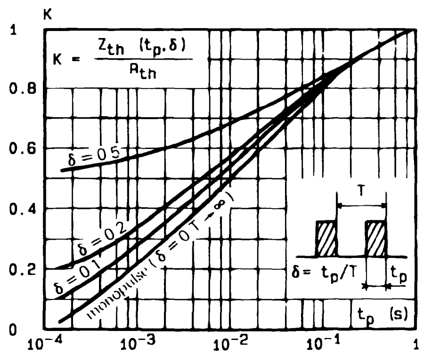


FIGURE 4 : Thermal impedance versus pulse width.

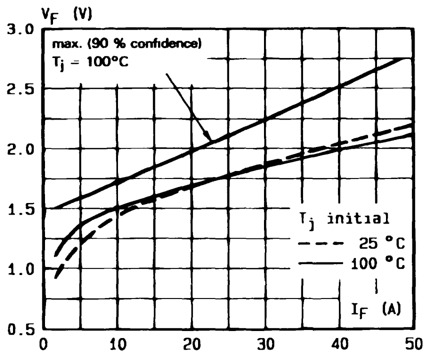


FIGURE 5 : Voltage drop versus forward current.

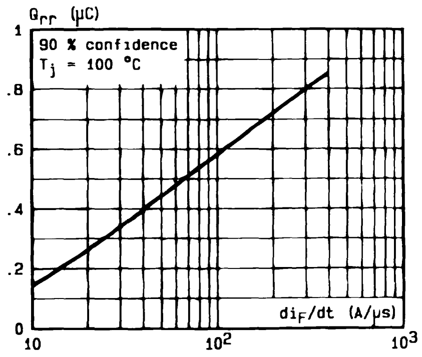


FIGURE 6 : Recovery charge versus di_F/dt.

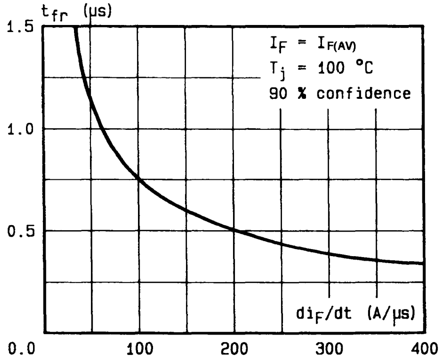


FIGURE 7 : Recovery time versus dI_F/dt.

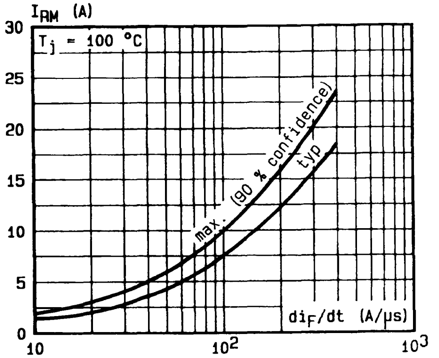


FIGURE 8 : Peak reverse current versus dI_F/dt.

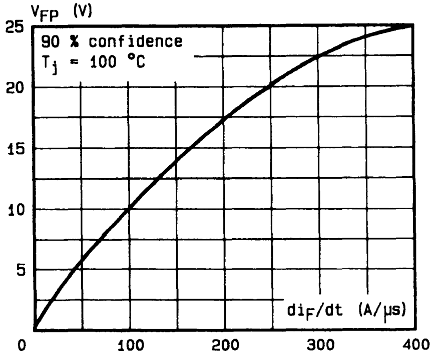


FIGURE 9 : Peak forward voltage versus dI_F/dt.

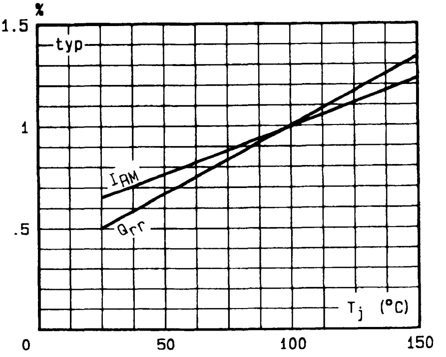


FIGURE 10 : Dynamic parameters versus junction temperature.

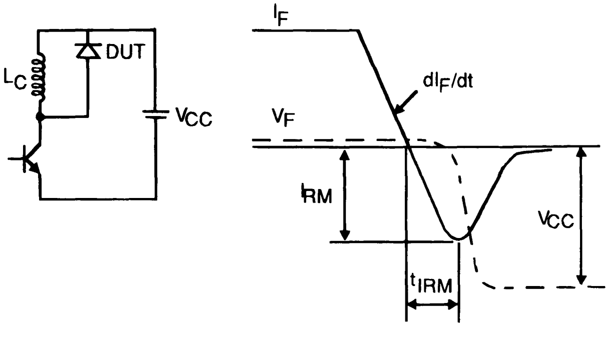


Figure 11 : Turn-off switching characteristics (without series inductance).

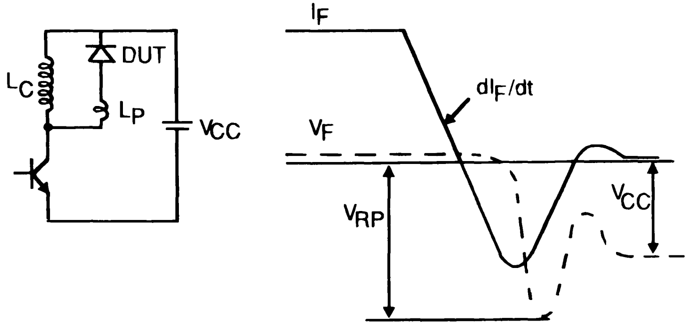


Figure 12 : Turn-off switching characteristics (with series inductance).

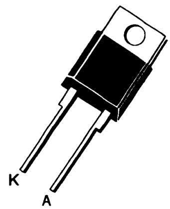
SGS-THOMSON MICROELECTRONICS

BYT 12PI-1000

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 7pF

Insulating voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	150	A
$I_{F(RMS)}$	RMS Forward Current		25	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$	12	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	75	A
P	Power Dissipation	$T_{case} = 50°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 12A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			155	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			65	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 50A/µs	V_{CC} = 200V I_F = 12A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			200	ns
	di_F/dt = – 100A/µs			120		
I_{RM}	di_F/dt = – 50A/µs				7.8	A
	di_F/dt = – 100A/µs			9		

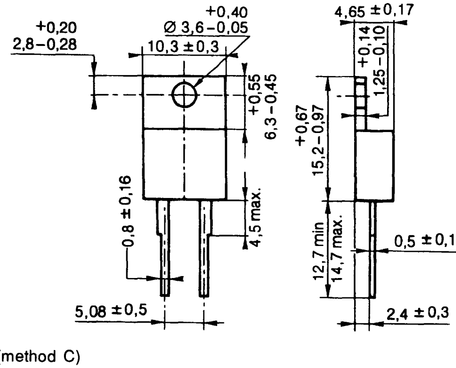
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ di_F/dt = – 12A/µs L_p = 12µH See Figure 12			4.5	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.026\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.026\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method   by conduction (method C)
Marking   type number
Weight   2 42g
Recommended torque value   80cm N
Maximum torque value . 100cm N

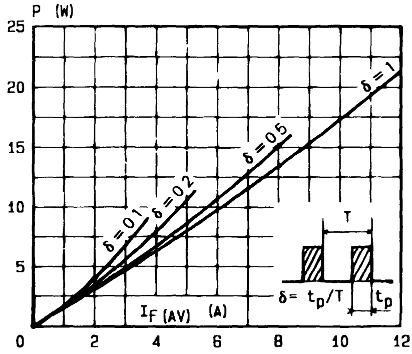


FIGURE 1 : Low frequency power losses versus average current.

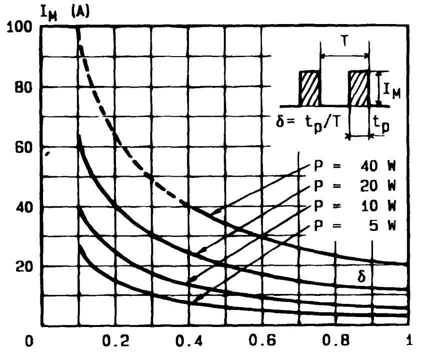


FIGURE 2 : Peak current versus form factor.

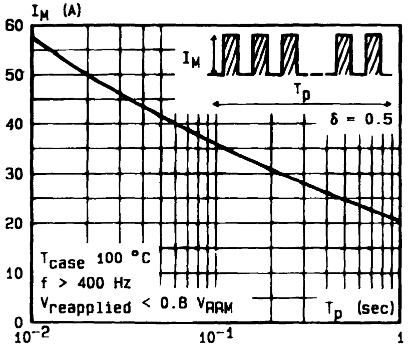


FIGURE 3 : Non repetitive peak surge current versus overload duration.

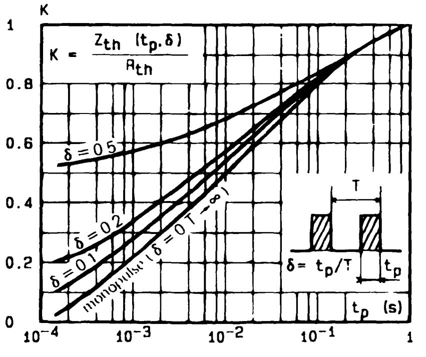


FIGURE 4 : Thermal impedance versus pulse width.

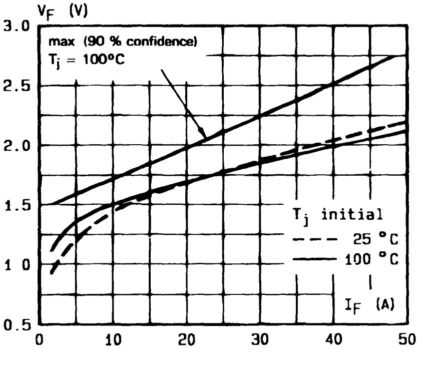


FIGURE 5 : Voltage drop versus forward current.

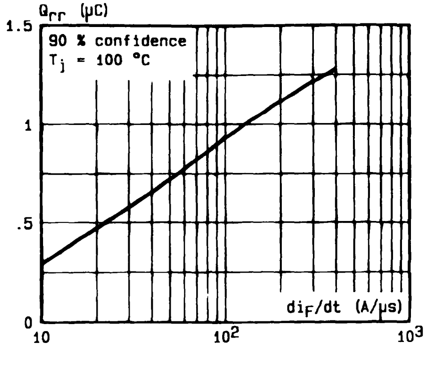


FIGURE 6 : Recovery charge versus di_F/dt.

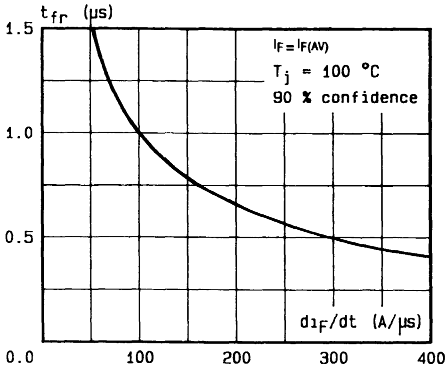


FIGURE 7 : Recovery time versus di_F/dt.

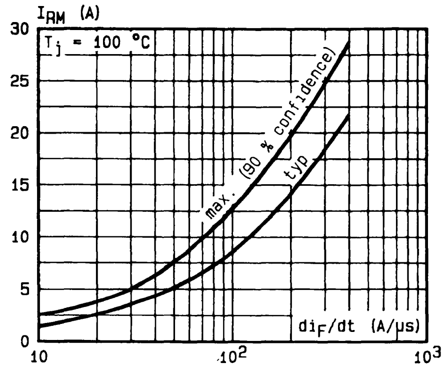


FIGURE 8 : Peak reverse current versus di_F/dt.

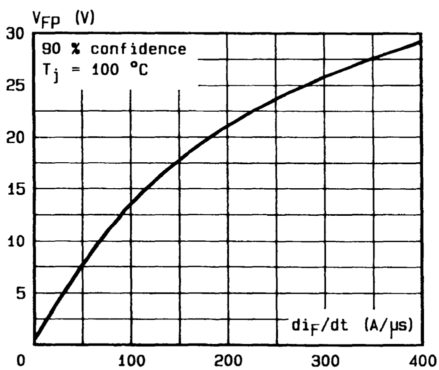


FIGURE 9 : Peak forward voltage versus di_F/dt.

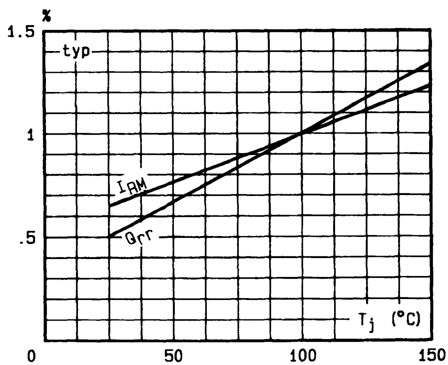


FIGURE 10 : Dynamic parameters versus junction temperature.

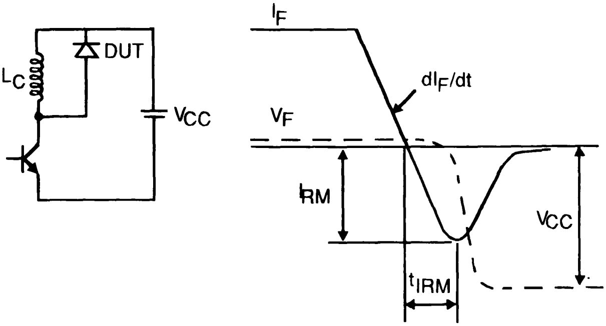


Figure 11 : Turn-off switching characteristics (without series inductance).

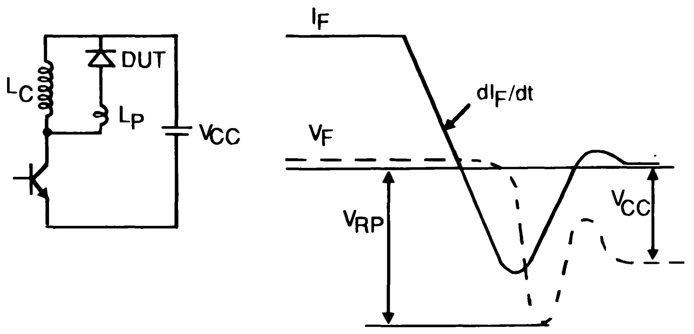


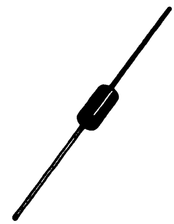
Figure 12 : Turn-off switching characteristics (with series inductance).

SGS-THOMSON MICROELECTRONICS

BYT 13-600 → 1000

FAST RECOVERY RECTIFIER DIODES

- SOFT RECOVERY
- VERY HIGH VOLTAGE
- SMALL RECOVERY CHARGE



DO 27 A
(Plastic)

APPLICATIONS

- ANTISATURATION DIODES FOR TRANSISTOR BASE DRIVE
- SNUBBER DIODES

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	50	A
$I_{F\,(AV)}$	Average Forward Current*	$T_a = 55°C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P_{tot}	Power Dissipation*	$T_a = 55°C$	3.75	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	BYT 13-			Unit
		600	800	1000	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-a)}$	Junction-ambient*	25	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			20	µA
V_F	$T_j = 25°C$	$I_F = 3A$			1.3	V

RECOVERY CHARACTERISTICS

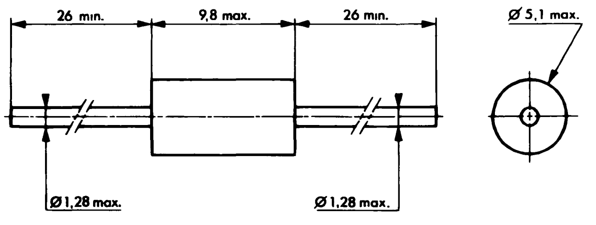
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 0.5A$	$I_R = 1A$	$I_{rr} = 0.25A$			150	ns

To evaluate the conduction losses use the following equations :

$V_F = 0.95 + 0.050\ I_F$ $\qquad$ $P = 0.95 \times I_{F(AV)} + 0.050\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 27 A (Plastic)



Cooling method by convection (method A)
Marking : type number, white band indicate cathode
Weight . 1g

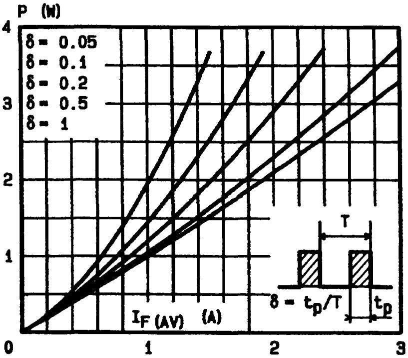


Fig.1 - Maximum average power dissipation versus average forward current.

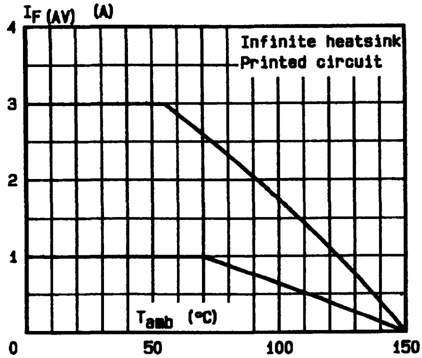


Fig.2 - Average forward current versus ambient temperature.

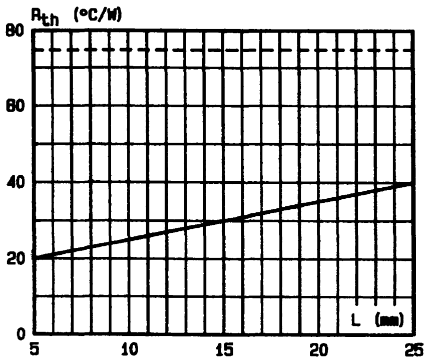
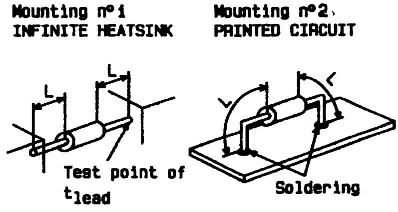


Fig.3 - Thermal resistance versus lead length.



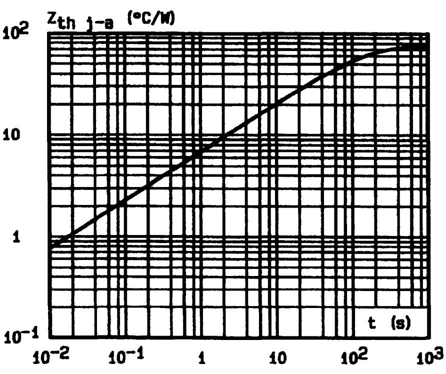


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

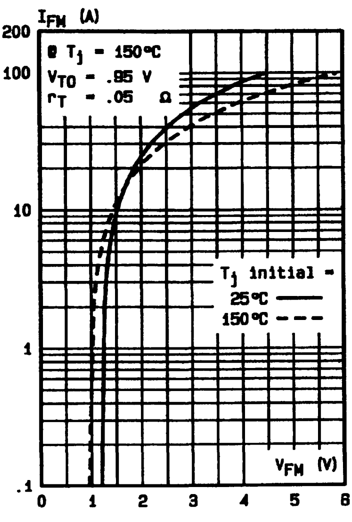


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

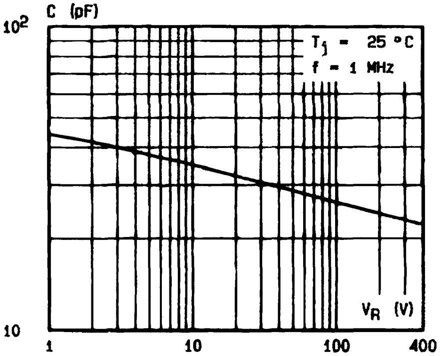


Fig.6 - Capacitance versus reverse applied voltage

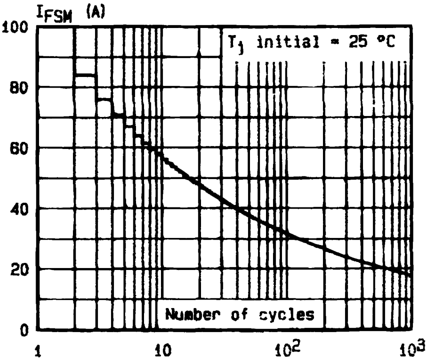


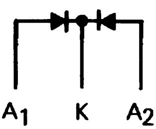
Fig.7 - Non repetitive surge peak current versus number of cycles

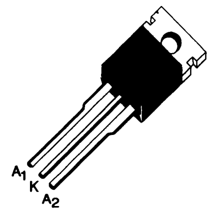
SGS-THOMSON MICROELECTRONICS — BYT 16P-200A→400A

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

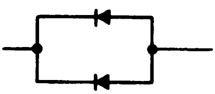
Cathode connected to case



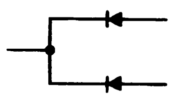


TO 220 AB
(Plastic)

SUITABLE APPLICATIONS :
- The BYT 16 P can be used :



16A



2 x 8A

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 10\mu s$	130	A
$I_{F(RMS)}$	RMS Forward Current		30	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 100°C$ $\delta = 0.5$	16	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	100	A
P	Power Dissipation	$T_{case} = 100°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		− 40 to + 150	°C

Symbol	Parameter	BYT 16P-			Unit
		200A	300A	400A	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	3.75 2	°C/W
$R_{th\ (c)}$	Coupling		0.25	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 8A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			75	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			35	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 32A/µs	V_{CC} = 200V I_F = 8A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			75	ns
	dI_F/dt = – 64A/µs			50		
I_{RM}	dI_F/dt = – 32A/µs				2.2	A
	dI_F/dt = – 64A/µs			2.8		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 120V $I_F = I_{F(AV)}$ See note dI_F/dt = – 8A/µs L_p = 9µH See Figure 12		3.3		

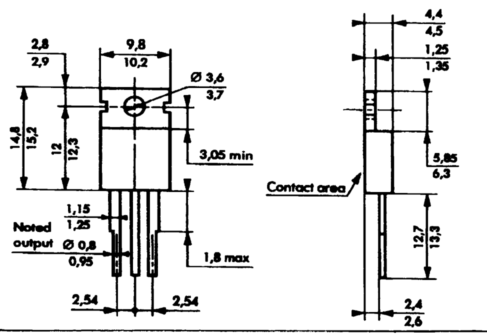
Note · Applicable to BYT 16P-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.024 I_F$

$P = 1.1 \times I_{F(AV)} + 0.024 I_F{}^2{}_{(RMS)}$ (1 leg) $P = 1.1 \times I_{F(AV)} + 0.012 I_F{}^2{}_{(RMS)}$ (2 legs)

PACKAGE MECHANICAL DATA : TO 220 AB Plastic



Cooling method . by conduction (method C)
Marking type number
Weight · 2 47g

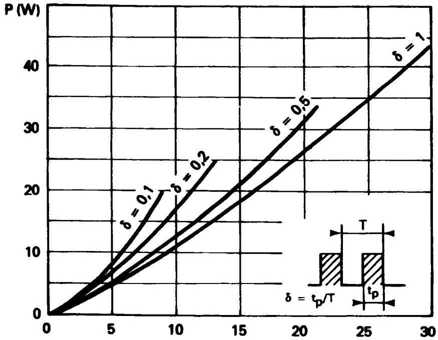


FIGURE 1 : Low frequency power losses versus average current.

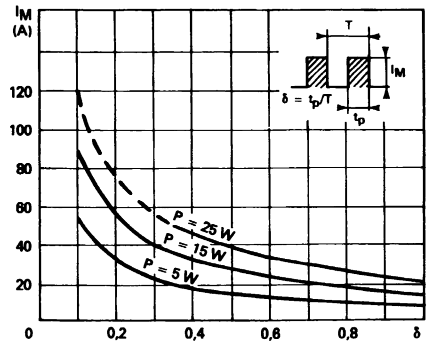


FIGURE 2 : Peak current versus form factor.

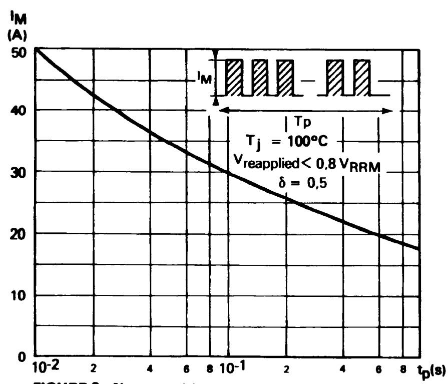


FIGURE 3 : Non repetitive peak surge current versus overload duration.

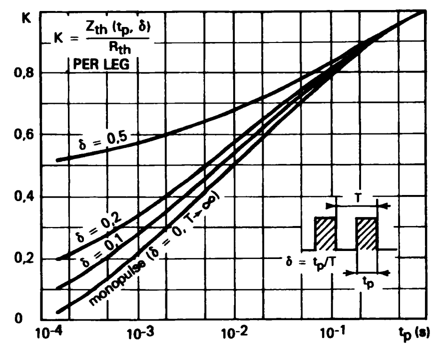


FIGURE 4 : Thermal impedance versus pulse width.

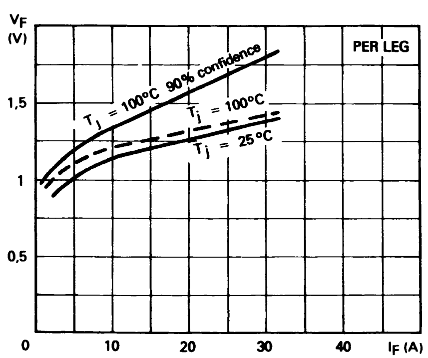


FIGURE 5 : Voltage drop versus forward current.

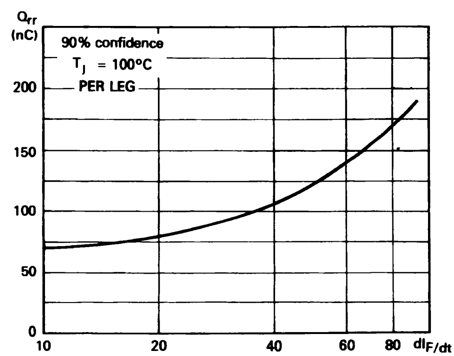


FIGURE 6 : Recovery charge versus dI_F/dt.

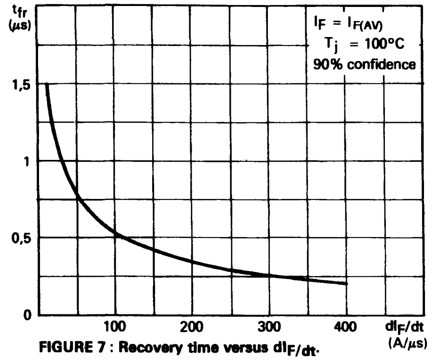


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

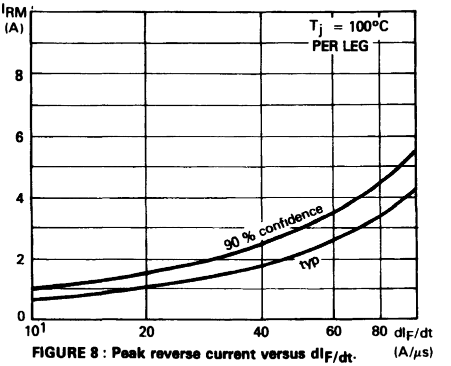


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

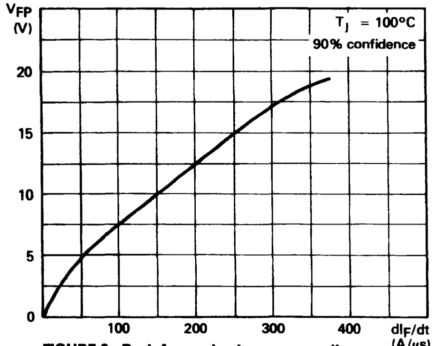


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

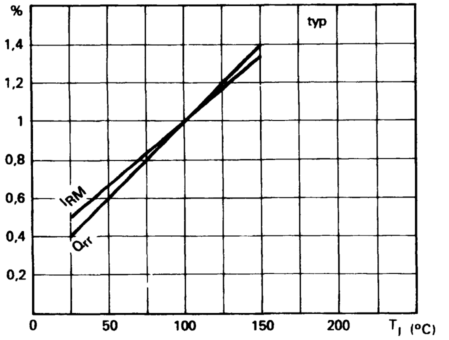


FIGURE 10 : Dynamic parameters versus junction temperature.

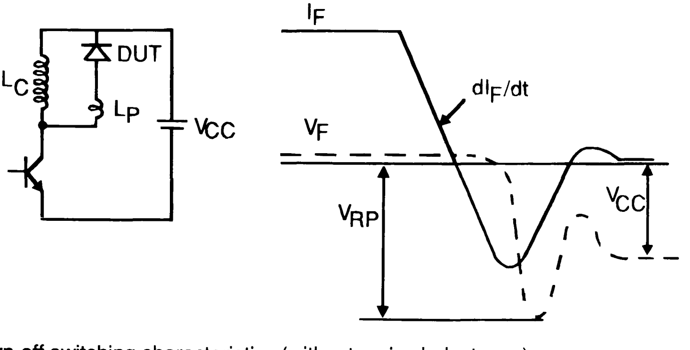


Figure 11 : Turn-off switching characteristics (without series inductance).

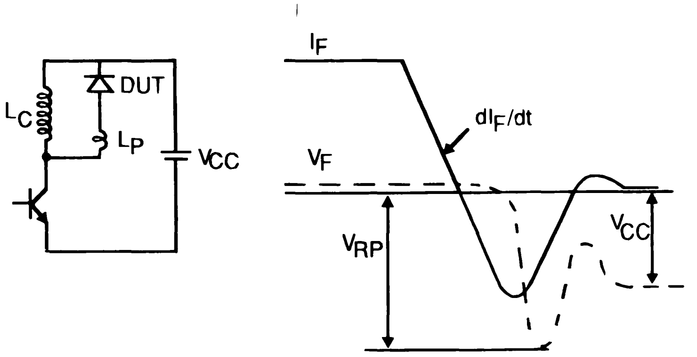
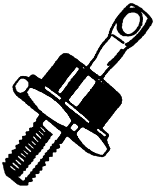


Figure 12 : Turn-off switching characteristics (with series inductance).

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



DO 5
(Metal)

SUITABLE APPLICATIONS
- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current		50	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 90°C δ = 0.5	30	A
I_{FSM}	Surge non Repetitive Forward Current	t_P = 10ms sinusoidal	500	A
P	Power Dissipation	T_{case} = 90°C	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30–			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			35	µA
	$T_j = 100°C$				6	mA
V_F	$T_j = 25°C$	$I_F = 30A$			1.5	V
	$T_j = 100°C$				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			100	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -120A/\mu s$	$V_{CC} = 200V$ $I_F = 30A$ $L_p \le 0.05\mu H$ $T_j = 100°C$ See Figure 11			75	ns
	$dI_F/dt = -240A/\mu s$			50		
I_{RM}	$dI_F/dt = -120A/\mu s$				9	A
	$dI_F/dt = -240A/\mu s$			12		

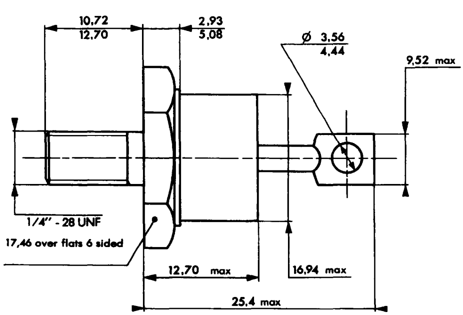
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 60V$ $I_F = I_{F(AV)}$ $dI_F/dt = -30A/\mu s$ $L_p = 1\mu H$ See Figure 12		3.3		

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0095\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.0095\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 5 Metal



Cooling method · by conduction (method C)
Marking . Cathode connected to case type number
Anode connected to case · type number + suffix R (consult us for these reverse version data sheets)
Weight · 18.84g
Recommended torque value : 250cm N
Maximum torque value · 310cm N

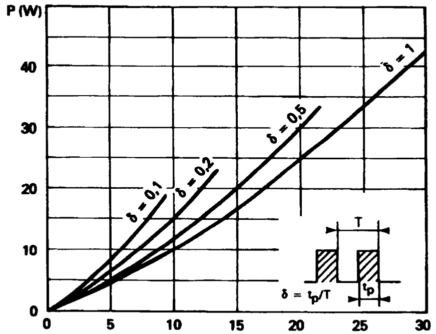


FIGURE 1 : Low frequency power losses versus average current

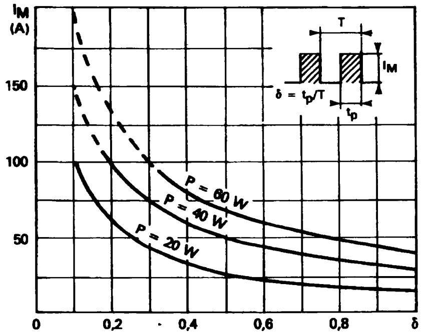


FIGURE 2 : Peak current versus form factor.

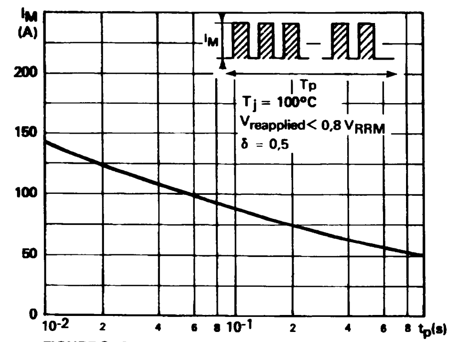


FIGURE 3 : Non repetitive peak surge current versus overload duration.

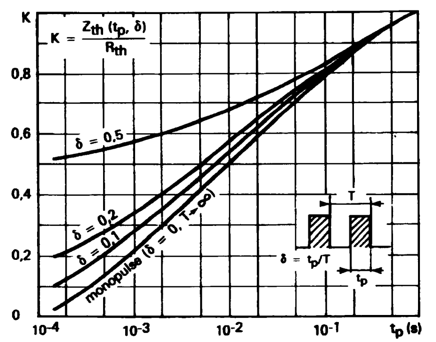


FIGURE 4 : Thermal impedance versus pulse width.

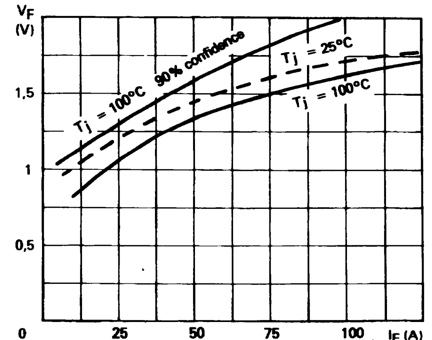


FIGURE 5 : Voltage drop versus forward current.

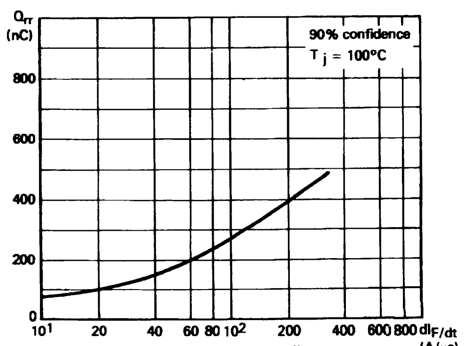


FIGURE 6 : Recovery charge versus dI_F/dt.

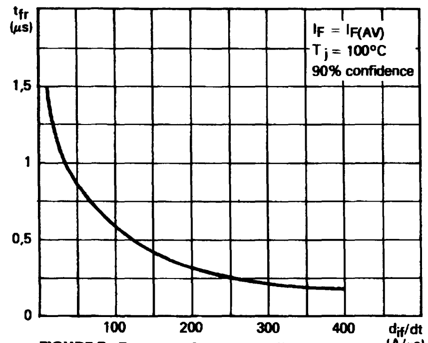


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

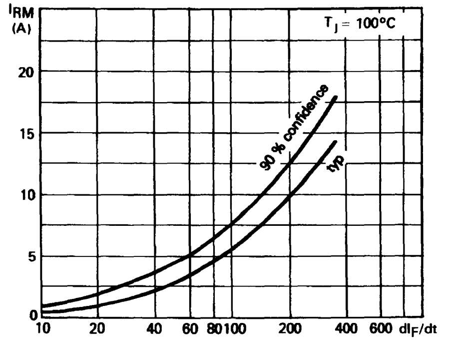


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

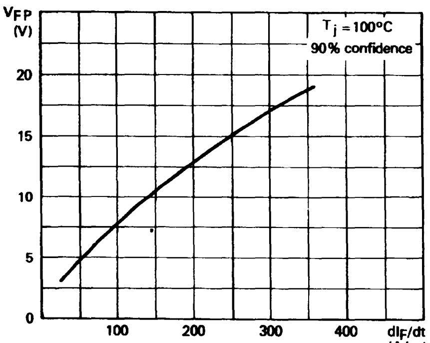


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

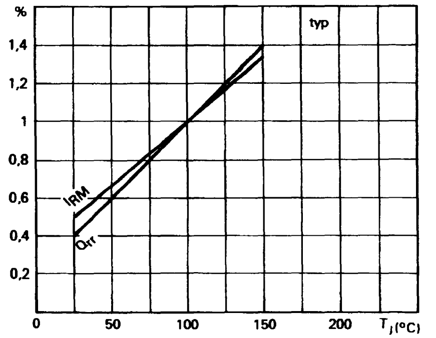


FIGURE 10 : Dynamic parameters versus junction temperature.

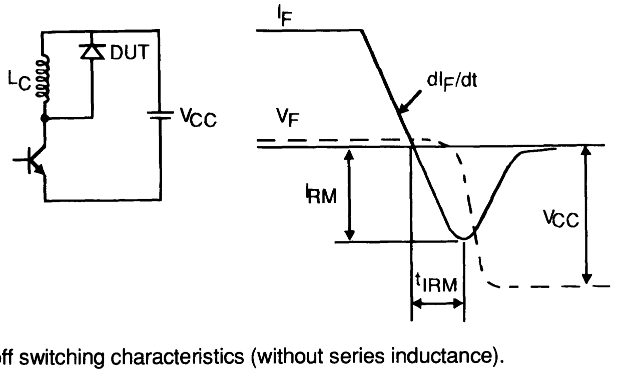


Figure 11 : Turn-off switching characteristics (without series inductance).

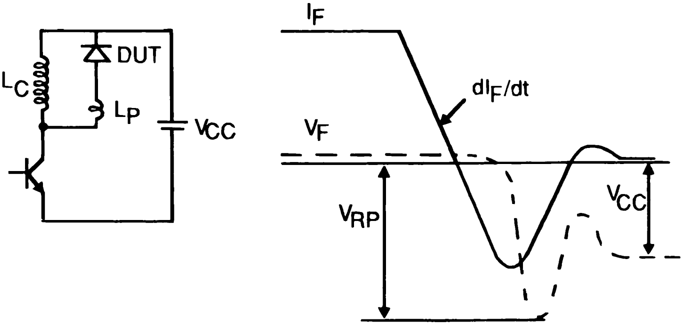


Figure 12 : Turn-off switching characteristics (with series inductance).

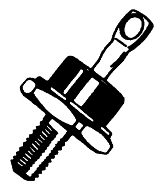
SGS-THOMSON
MICROELECTRONICS

BYT 30-600/800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 5
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 75°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P	Power Dissipation	$T_{case} = 75°C$	62	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			100	µA
	$T_j = 100°C$				5	mA
V_F	$T_j = 25°C$	$I_F = 30A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			130	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			55	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -120A/\mu s$	$V_{CC} = 200V$ $I_F = 30A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See figure 11			160	ns
	$dI_F/dt = -240A/\mu s$			100		
I_{RM}	$dI_F/dt = -120A/\mu s$				15	A
	$dI_F/dt = -240A/\mu s$			19		

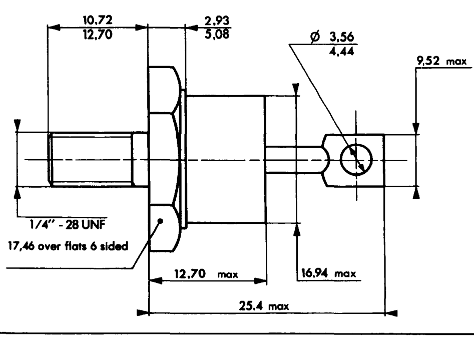
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 150V$ $I_F = I_{F(AV)}$ $dI_F/dt = -30A/\mu s$ $L_p = 4\mu H$ See figure 12			4	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.010\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.010\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 5 Metal



Cooling method . by conduction (method C)
Marking type number
Weight . 18 84g
Recommended torque value . 250cm N
Maximum torque value · 310cm N

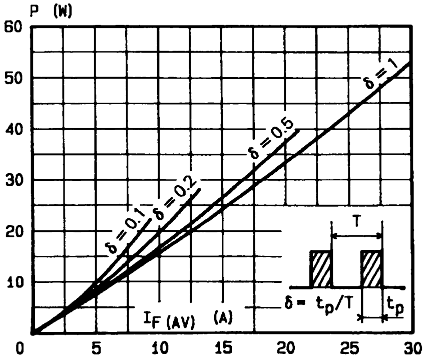


FIGURE 1 : Low frequency power losses versus average current.

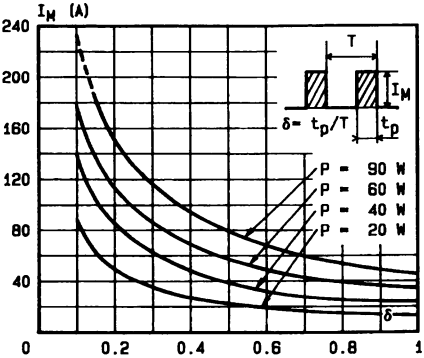


FIGURE 2 : Peak current versus form factor.

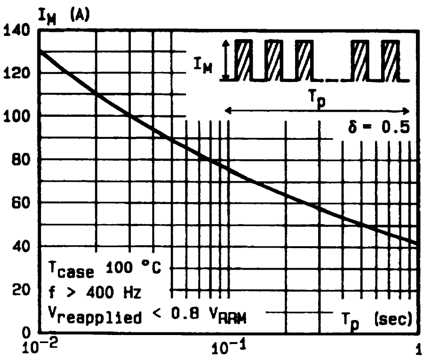


FIGURE 3 : Non repetitive peak surge current versus overload duration.

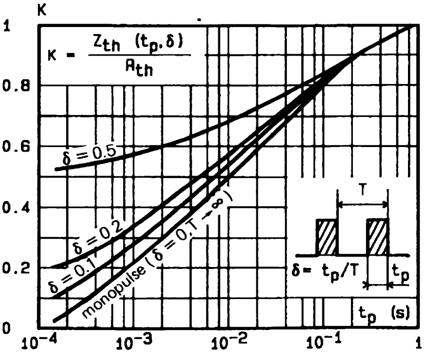


FIGURE 4 : Thermal impedance versus pulse width.

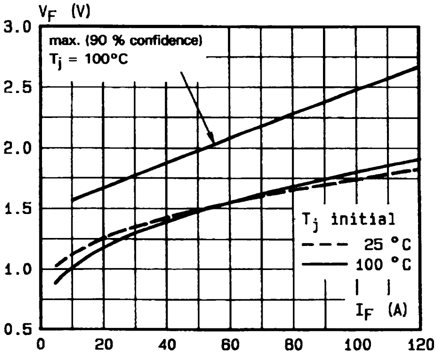


FIGURE 5 : Voltage drop versus forward current.

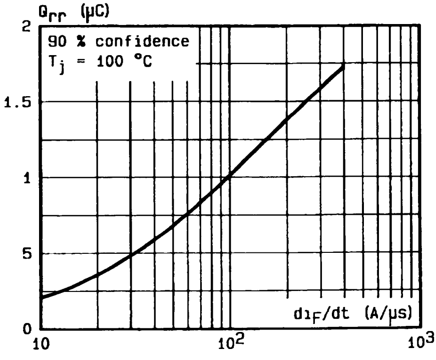


FIGURE 6 : Recovery charge versus di_F/dt.

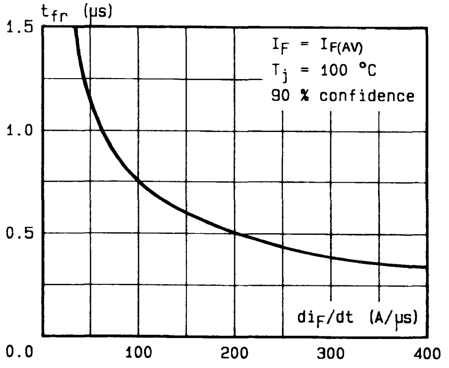


FIGURE 7 : Recovery time versus dI_F/dt.

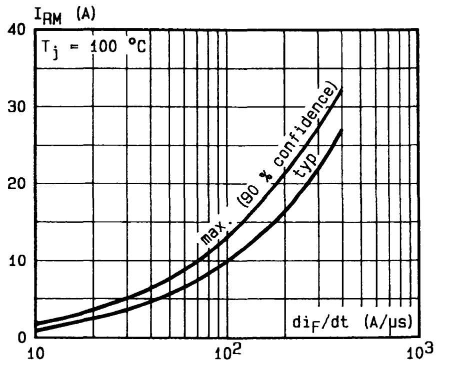


FIGURE 8 : Peak reverse current versus dI_F/dt.

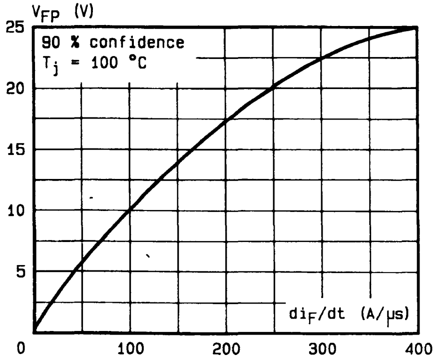


FIGURE 9 : Peak forward voltage versus dI_F/dt.

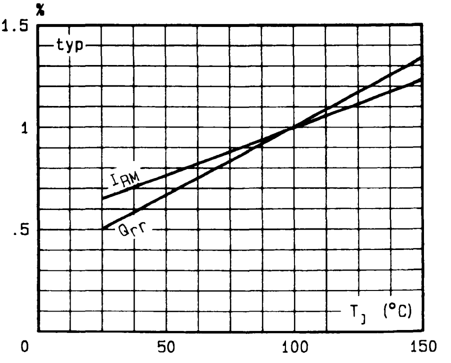


FIGURE 10 : Dynamic parameters versus junction temperature.

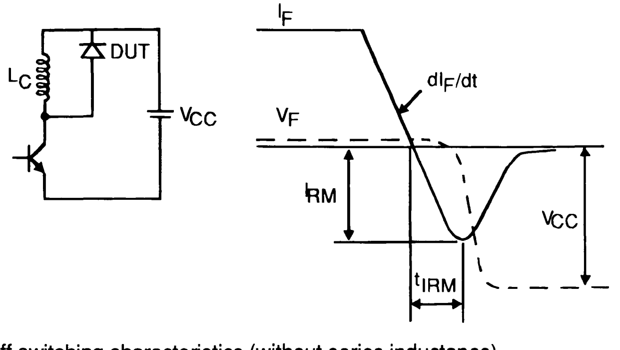


Figure 11 : Turn-off switching characteristics (without series inductance)

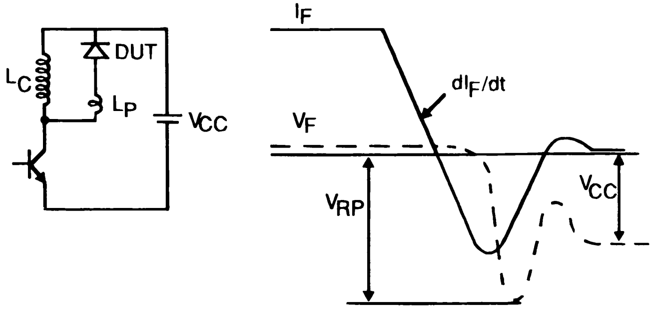
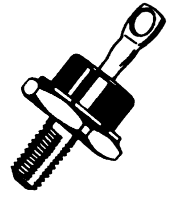


Figure 12 : Turn-off switching characteristics (with series inductance)

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 5
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 75°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	200	A
P	Power Dissipation	$T_{case} = 75°C$	62	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}c)}$	Junction-case	1.2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			165	ns
		I_F = 0.5A I_R = 1A I_{rr}=0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \leq$ 0.05µH T_j = 100°C See figure 11			200	ns
	di_F/dt = – 240A/µs			120		
I_{RM}	di_F/dt = – 120A/µs				19.5	A
	di_F/dt = – 240A/µs			22		

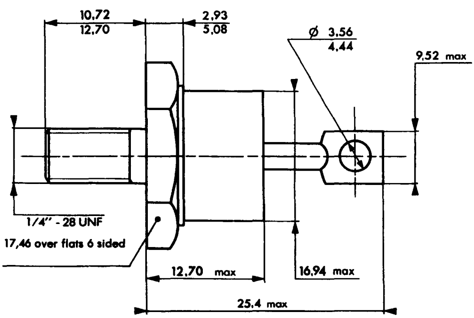
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F\,(AV)}$ di_F/dt = – 30A/µs L_p = 5µH See figure 12			4.5	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.010\ I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.010\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 5 Metal



Cooling method . by conduction (method C)
Marking . type number
Weight . 18.84g
Recommended torque value · 250cm. N
Maximum torque value . 310cm. N

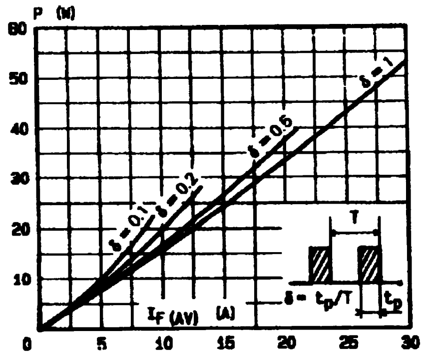


FIGURE 1 : Low frequency power losses versus average current.

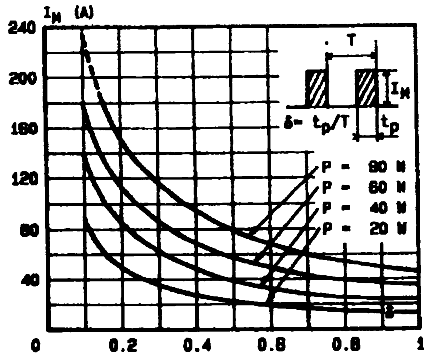


FIGURE 2 : Pesk current versus form factor.

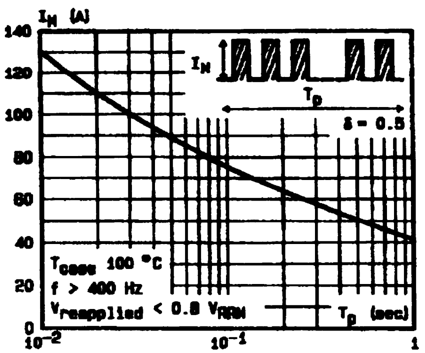


FIGURE 3 : Non repetitive pesk surge current versus overload duration.

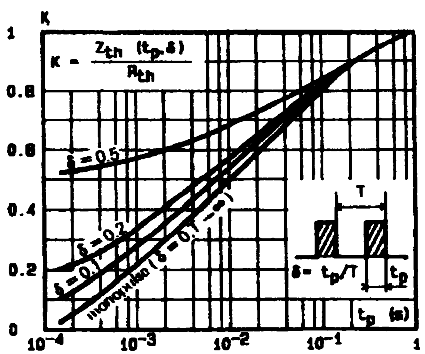


FIGURE 4 : Thermal impedance versus pulse width.

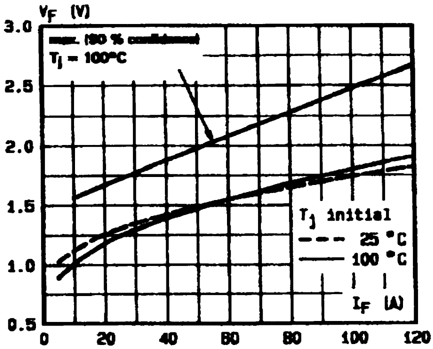


FIGURE 5 : Voltage drop versus forward current.

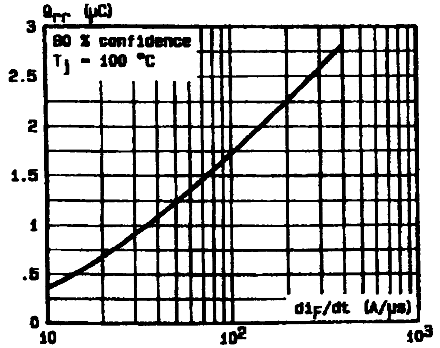


FIGURE 6 : Recovery charge versus diF/dt.

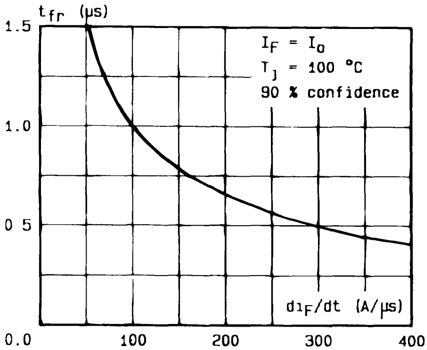


FIGURE 7 : Recovery time versus dI_F/dt.

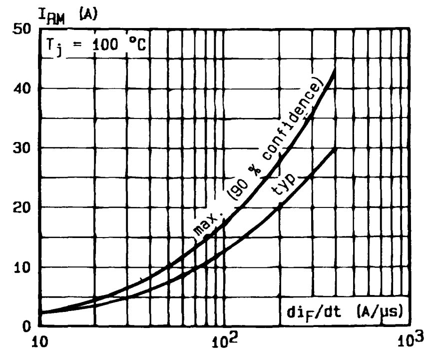


FIGURE 8 : Peak reverse current versus dI_F/dt.

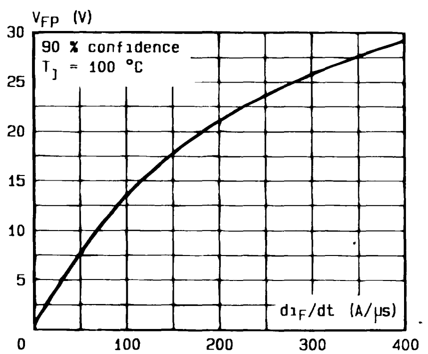


FIGURE 9 : Peak forward voltage versus dI_F/dt.

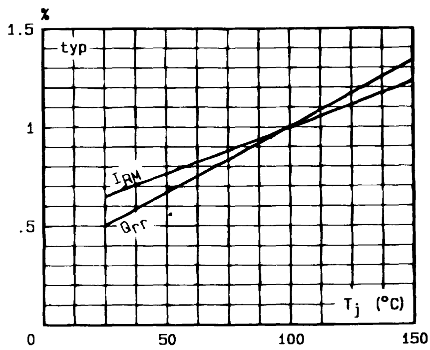


FIGURE 10 : Dynamic parameters versus junction temperature.

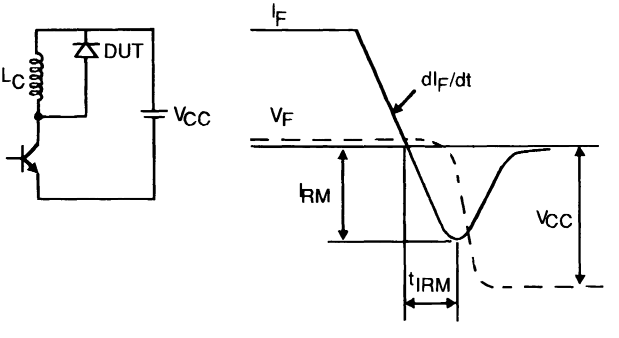


Figure 11 : Turn-off switching characteristics (without series inductance).

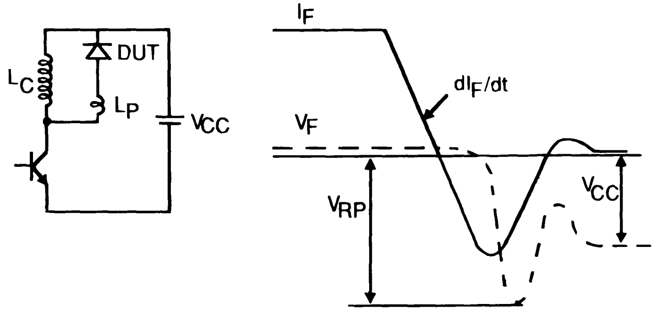


Figure 12 : Turn-off switching characteristics (with series inductance).

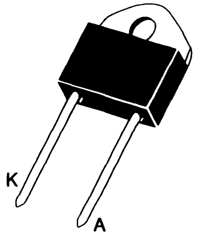
SGS-THOMSON MICROELECTRONICS

BYT 30P-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DOP 3
(Plastic)

SUITABLE APPLICATIONS
- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current		50	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 100°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	350	A
P	Power Dissipation	$T_{case} = 100°C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30P-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			35	µA
	$T_j = 100°C$				6	mA
V_F	$T_j = 25°C$	$I_F = 30A$			1.5	V
	$T_j = 100°C$				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			100	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -120A/\mu s$	$V_{CC} = 200V$ $I_F = 30A$			75	ns
	$dI_F/dt = -240A/\mu s$	$L_p < 0.05\mu H$ $T_j = 100°C$ See Figure 11		50		
I_{RM}	$dI_F/dt = -120A/\mu s$				9	A
	$dI_F/dt = -240A/\mu s$			12		

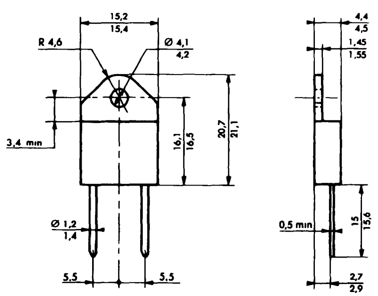
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 60V$ $I_F = I_{F(AV)}$ $dI_F/dt = -30A/\mu s$ $L_p = 1\mu H$ See Figure 12		3.3		

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0095 I_F$ $\quad$ $P = 1.1 \times I_{F(AV)} = 0.0095 I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight : 4.3g
Recommended torque value . 80cm.N
Maximum torque value : 100cm N

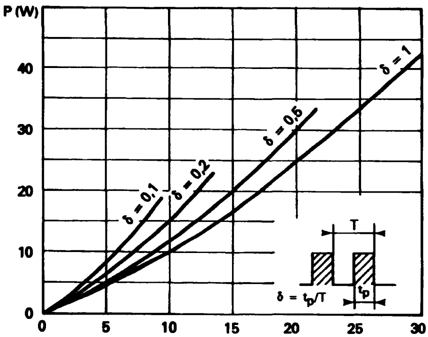


FIGURE 1 : Low frequency power losses versus average current

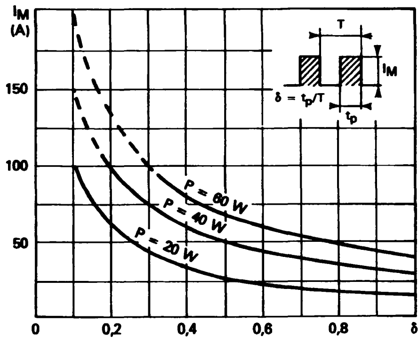


FIGURE 2 : Peak current versus form factor.

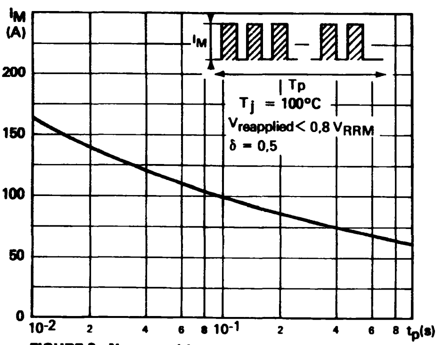


FIGURE 3 : Non repetitive peak surge current versus overload duration.

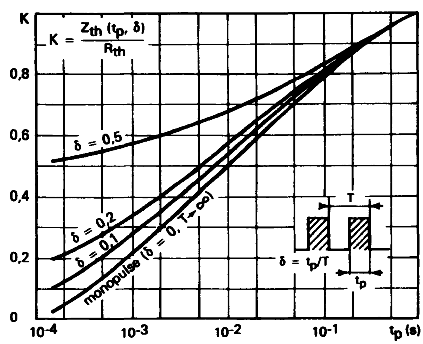


FIGURE 4 : Thermal impedance versus pulse width.

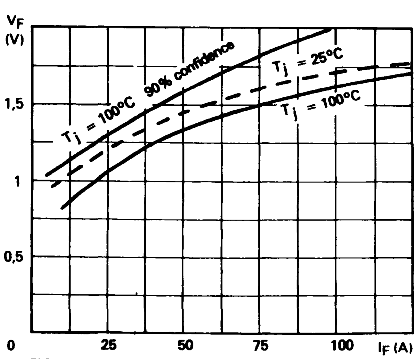


FIGURE 5 : Voltage drop versus forward current.

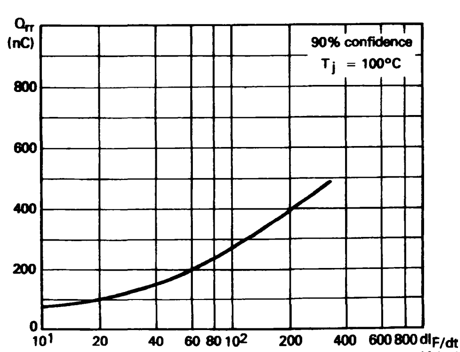


FIGURE 6 : Recovery charge versus dI_F/dt.

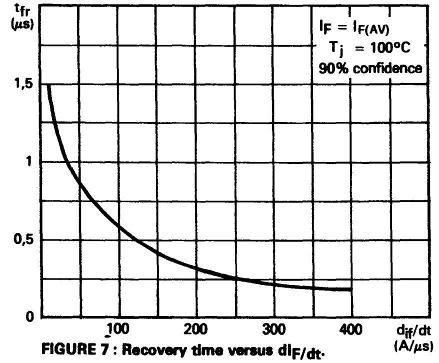


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

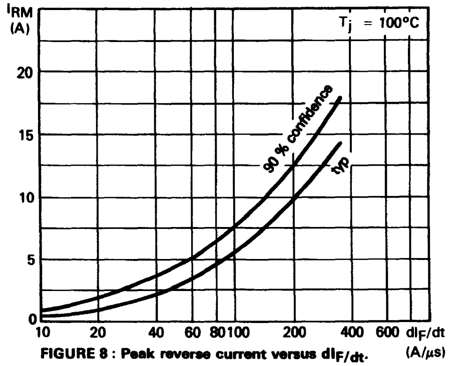


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

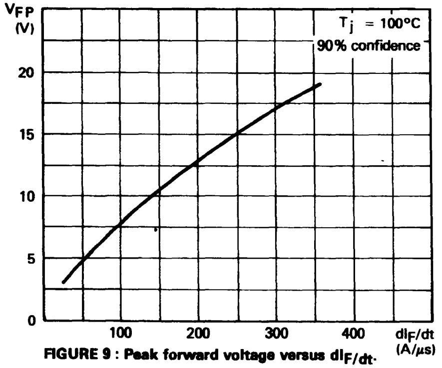


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

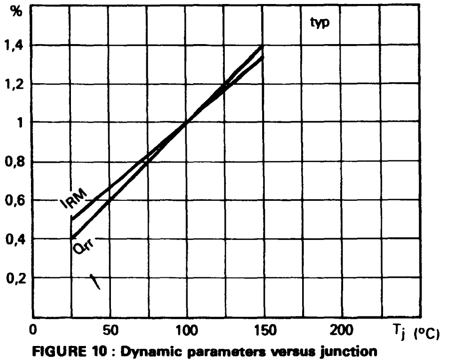


FIGURE 10 : Dynamic parameters versus junction temperature.

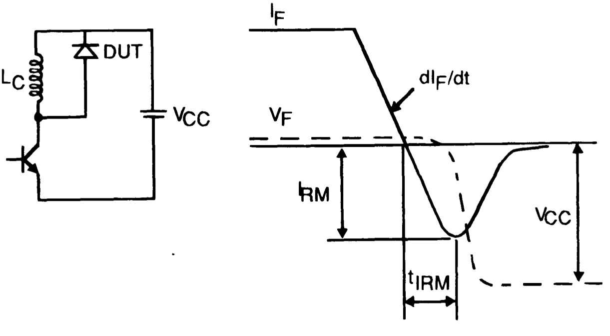


Figure 11 : Turn-off switching characteristics (without series inductance).

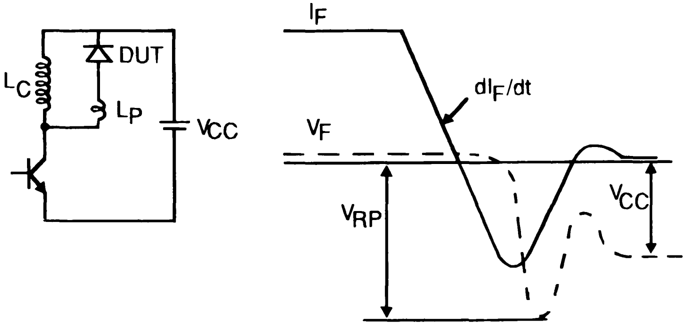
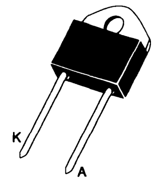


Figure 12 : Turn-off switching characteristics (with series inductance).

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 85°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	200	A
P	Power Dissipation	$T_{case} = 85°C$	65	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30P-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			130	ns
		I_F = 0.5A I_R=1A I_{rr} = 0.25A			55	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \le 0.05\mu H$ T_j = 100°C See Figure 11			160	ns
	di_F/dt = – 240A/µs			100		
I_{RM}	di_F/dt = – 120A/µs				15	A
	di_F/dt = – 240A/µs			19		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

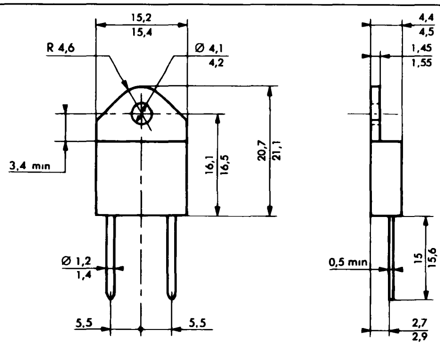
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ See note di_F/dt = – 30A/µs L_p = 5µH See Figure 12			4	

Note : Applicable to BYT 30 P-800 only

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.01\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.01\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method by conduction (method C)
Marking type number
Weight 2 42g
Recommended torque value 80cm N
Maximum torque value 100cm N

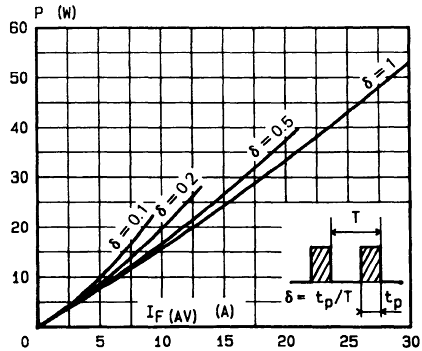


FIGURE 1 : Low frequency power losses versus average current.

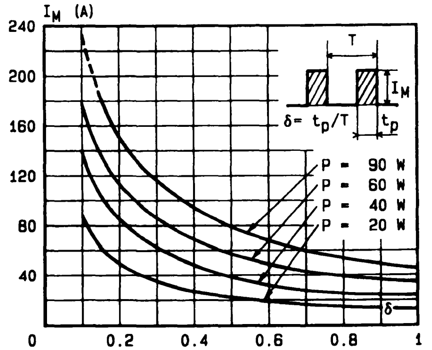


FIGURE 2 : Peak current versus form factor.

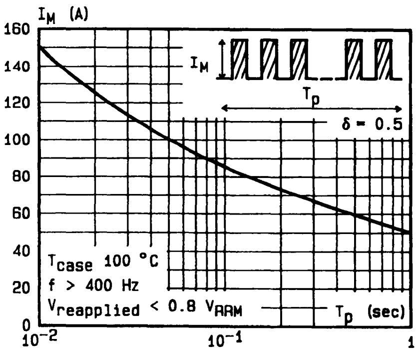


FIGURE 3 : Non repetitive peak surge current versus overload duration.

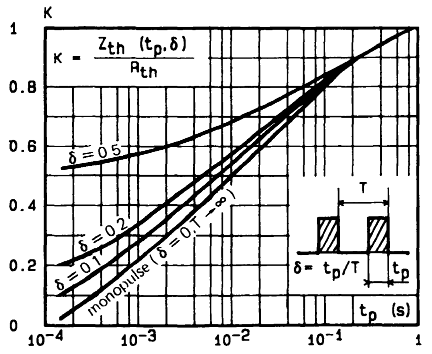


FIGURE 4 : Thermal impedance versus pulse width.

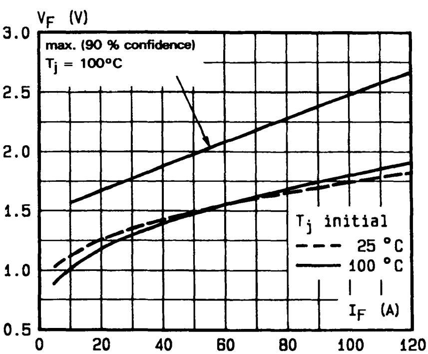


FIGURE 5 : Voltage drop versus forward current.

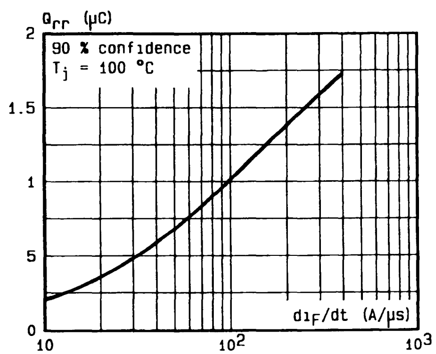


FIGURE 6 : Recovery charge versus di_F/dt.

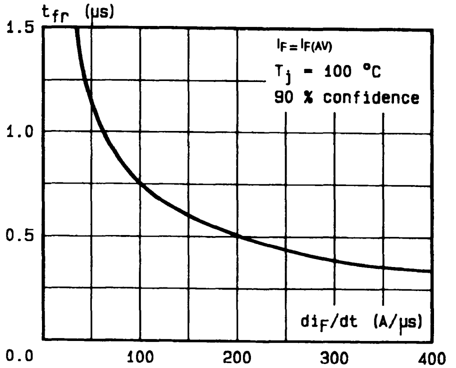


FIGURE 7 : Recovery time versus di_F/dt.

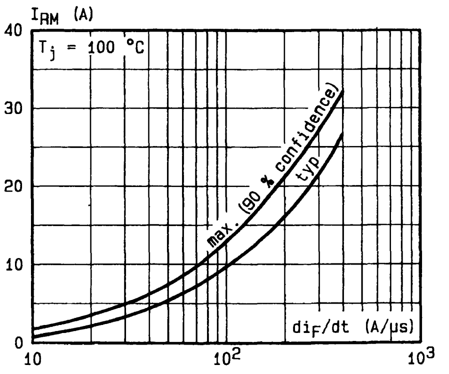


FIGURE 8 : Peak reverse current versus di_F/dt.

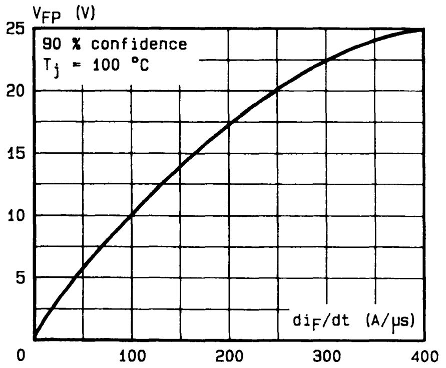


FIGURE 9 : Peak forward voltage versus di_F/dt.

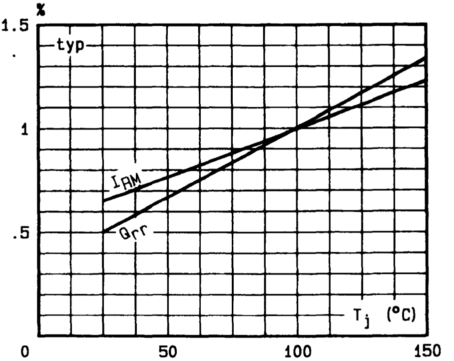


FIGURE 10 : Dynamic parameters versus junction temperature.

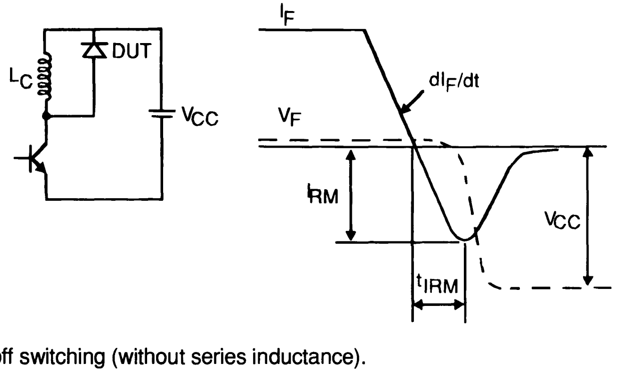


Figure 11 : Turn-off switching (without series inductance).

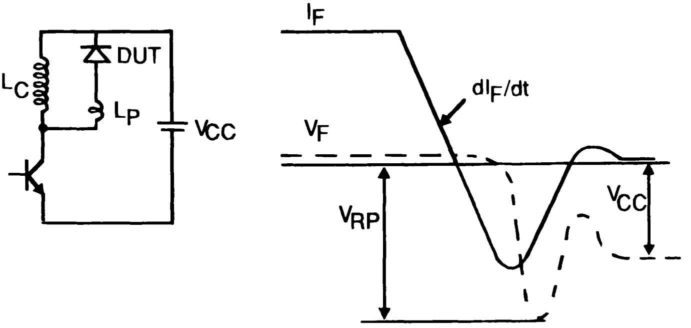


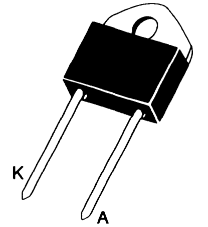
Figure 12 : Turn-off switching characteristics (with series inductance).

BYT 30P-1000

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 85°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	200	A
P	Power Dissipation	$T_{case} = 85°C$	65	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			165	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (without series inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \le$ 0.05µH T_j = 100°C See Figure 11			200	ns
	dI_F/dt = – 240A/µs			120		
I_{RM}	dI_F/dt = – 120A/µs				19.5	A
	dI_F/dt = – 240A/µs			22		

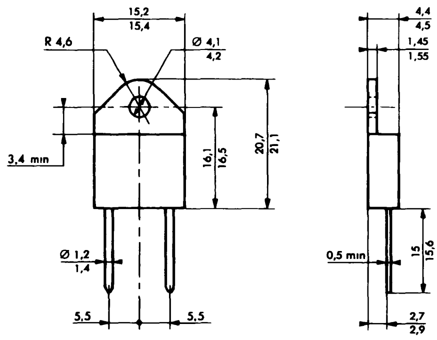
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ dI_F/dt = – 30A/µs L_p = 5µH See figure 12			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.010\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.010\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method . by conduction (method C)
Marking . type number
Weight . 4.3g
Recommended torque value : 80cm N
Maximum torque value : 100cm.N

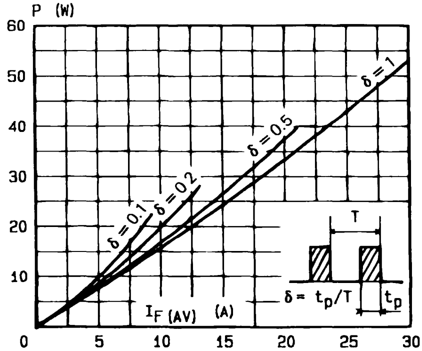


FIGURE 1 : Low frequency power losses versus average current.

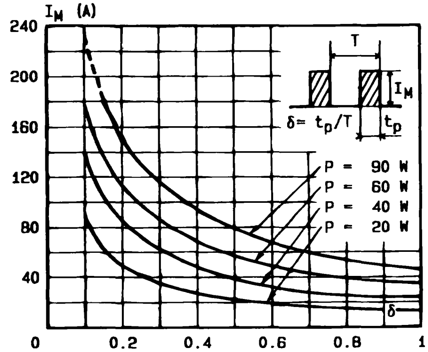


FIGURE 2 : Peak current versus form factor.

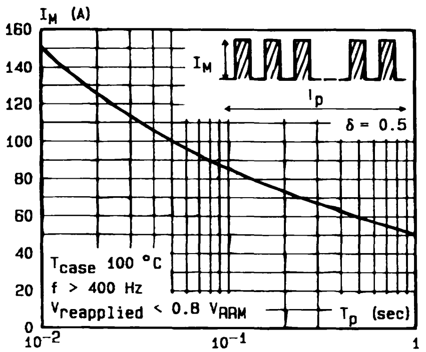


FIGURE 3 : Non repetitive peak surge current versus overload duration.

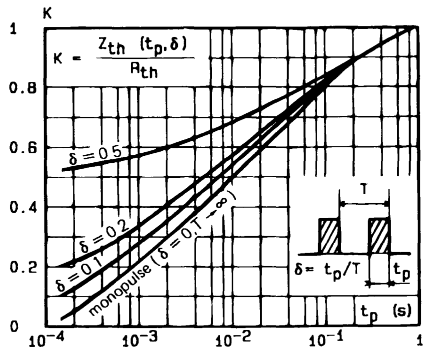


FIGURE 4 : Thermal impedance versus pulse width.

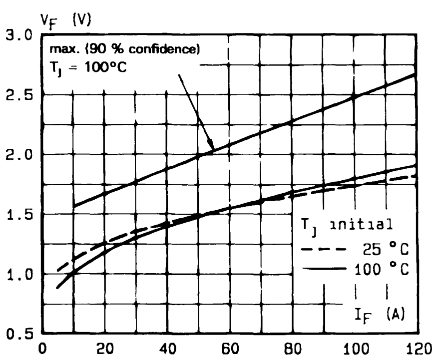


FIGURE 5 : Voltage drop versus forward current.

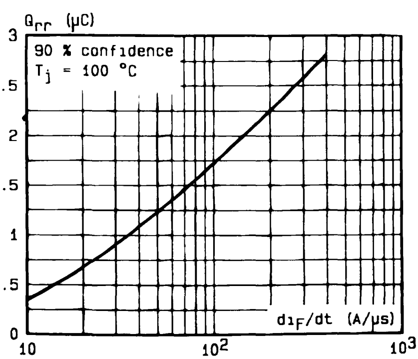


FIGURE 6 : Recovery charge versus di_F/dt.

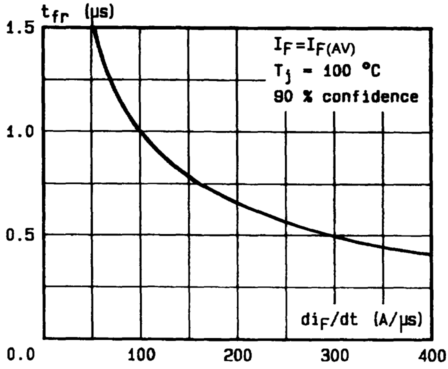


FIGURE 7 : Recovery time versus dI_F/dt.

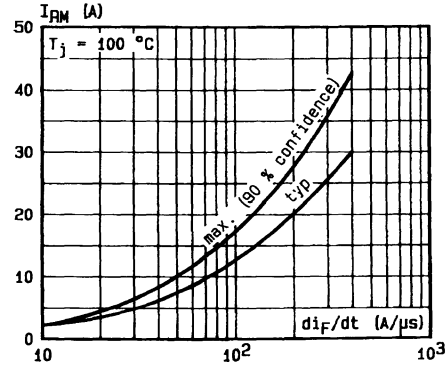


FIGURE 8 : Peak reverse current versus dI_F/dt.

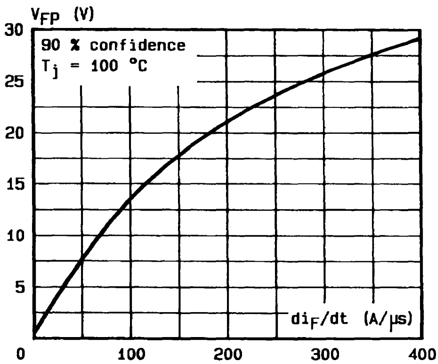


FIGURE 9 : Peak forward voltage versus dI_F/dt.

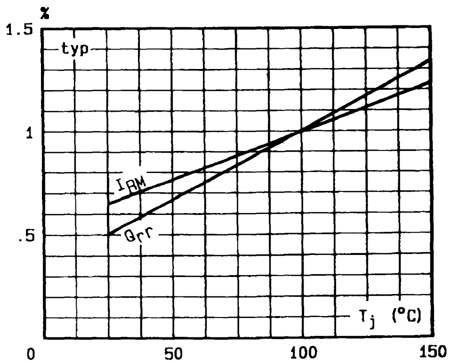


FIGURE 10 : Dynamic parameters versus junction temperature.

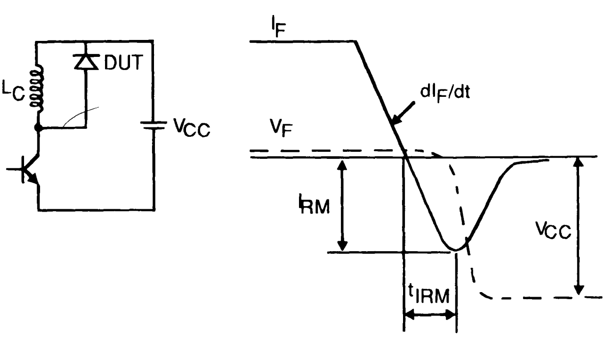


Figure 11 : Turn-off switching characteristics (without series inductance).

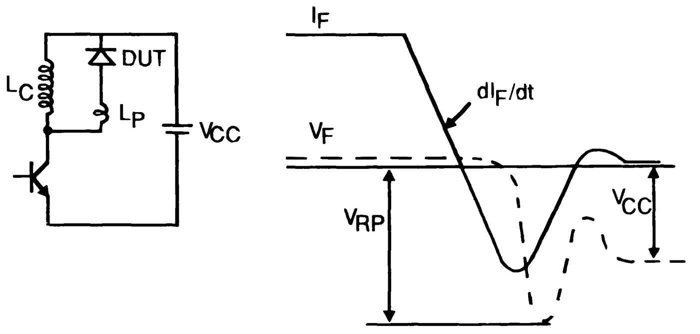


Figure 12 : Turn-off switching characteristics (with series inductance).

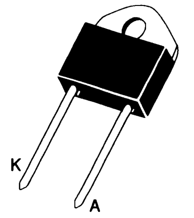
SGS-THOMSON MICROELECTRONICS

BYT 30PI-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 15pF

Insulating voltage 2500 V_{RMS}



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current		50	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 60°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	350	A
P	Power Dissipation	$T_{case} = 60°C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30PI–			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.8	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 30A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			100	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			75	ns
	dI_F/dt = – 240A/µs			50		
I_{RM}	dI_F/dt = – 120A/µs				9	A
	dI_F/dt = – 240A/µs			12		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

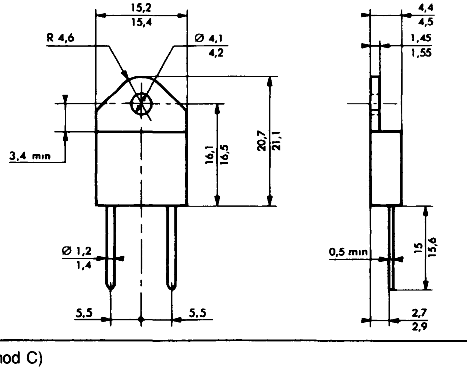
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 60V $I_F = I_{F(AV)}$ See note dI_F/dt = – 30A/µs L_p = 1µH See Figure 12		3.3		

Note : Applicable to BYT 30 PI-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0095\ I_F$ $\qquad P = 1.1 \times I_{F(AV)} + 0.0095 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method by conduction (method C)
Marking : type number
Weight : 2.42g
Recommended torque value : 80cm.N
Maximum torque value 100cm.N

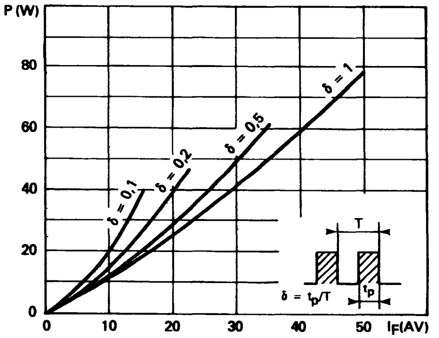


FIGURE 1 : Low frequency power losses versus average current.

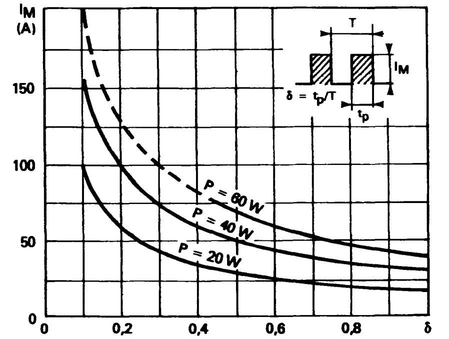


FIGURE 2 : Peak current versus form factor.

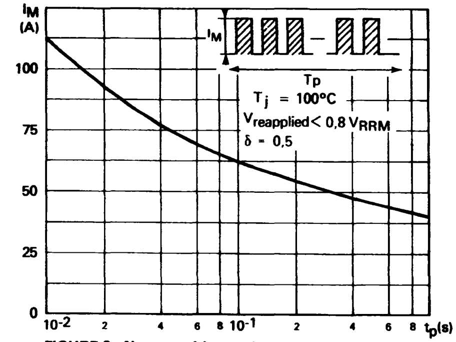


FIGURE 3 : Non repetitive peak surge current versus overload duration.

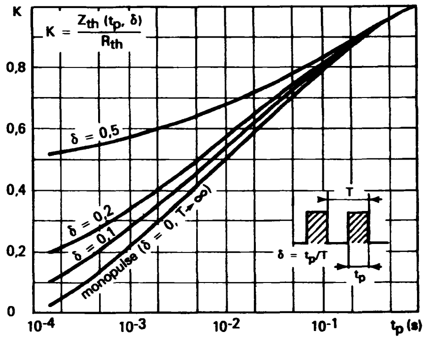


FIGURE 4 : Thermal impedance versus pulse width.

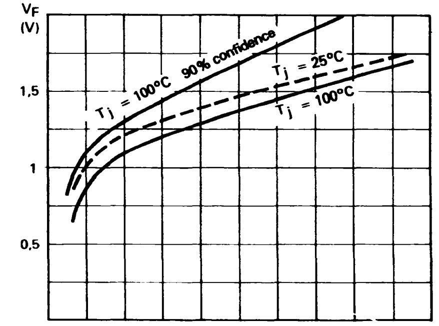


FIGURE 5 : Voltage drop versus forward current.

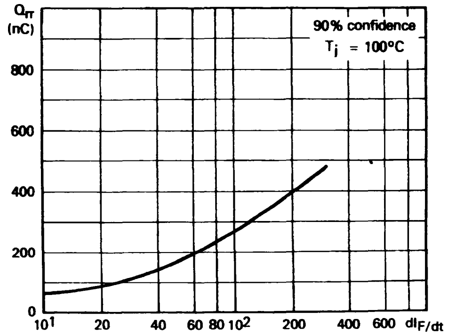


FIGURE 6 : Recovery charge versus dI_F/dt.

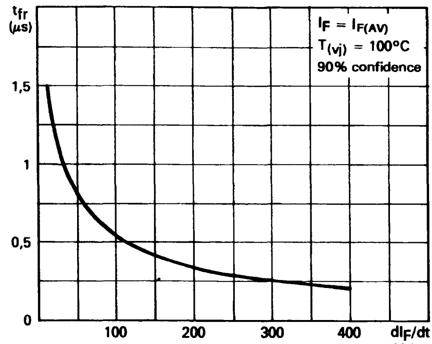


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

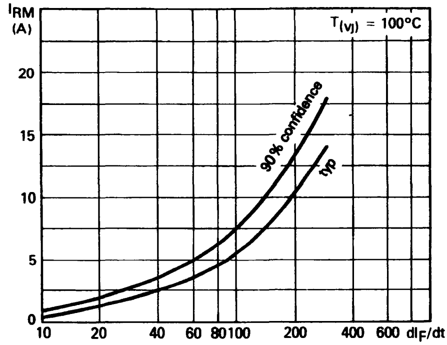


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

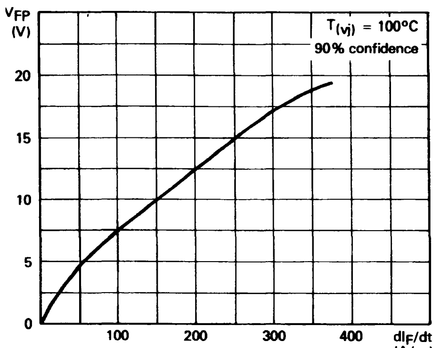


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

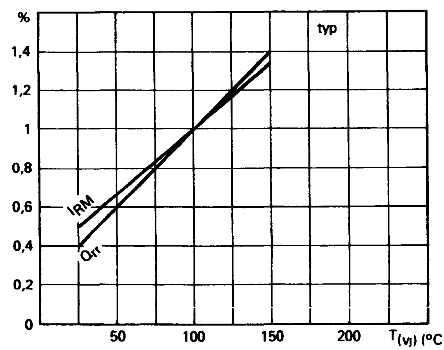


FIGURE 10 : Dynamic parameters versus junction temperature.

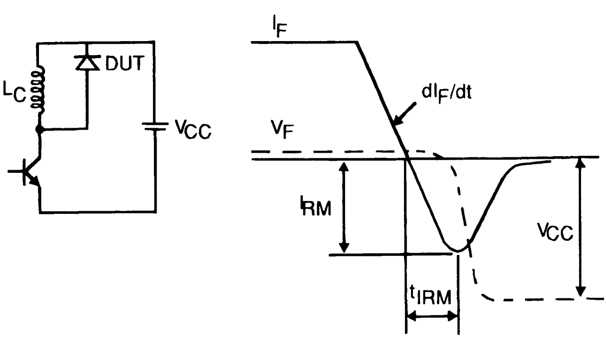


Figure 11 : Turn-off switching characteristics (without series inductance).

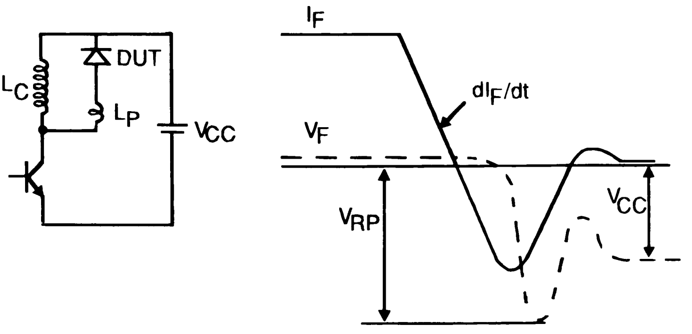


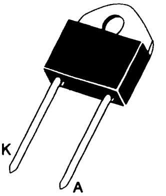
Figure 12 : Turn-off switching characteristics (with series inductance).

BYT 30PI-600/800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN–OFF SWITCHING
- INSULATED : Capacitance 15pF

Insulating voltage 2500 V_{RMS}



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P	Power Dissipation	$T_{case} = 50°C$	62	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 30PI-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j\text{-}c)}$	Junction-case	1.6	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			100	µA
	$T_j = 100°C$				5	mA
V_F	$T_j = 25°C$	$I_F = 30A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			130	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			55	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -120A/\mu s$	$V_{CC} = 200V$ $I_F = 30A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See Figure 11			160	ns
	$dI_F/dt = -240A/\mu s$			100		
I_{RM}	$dI_F/dt = -120A/\mu s$				15	A
	$dI_F/dt = -240A/\mu s$			19		

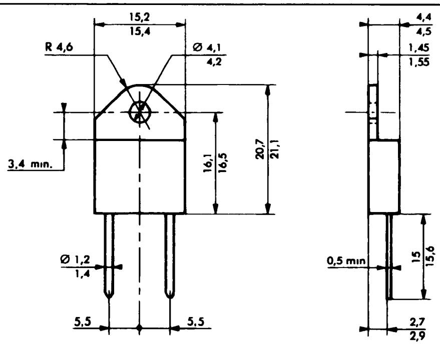
TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 150V$ $I_F = I_{F(AV)}$ $dI_F/dt = -30A/\mu s$ $L_p = 4\mu H$ See Figure 12			4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.010\, I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.010\, I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method . by conduction (method C)
Marking . type number
Weight . 4.3g
Recommended torque value · 80cm.N
Maximum torque value : 100cm.N

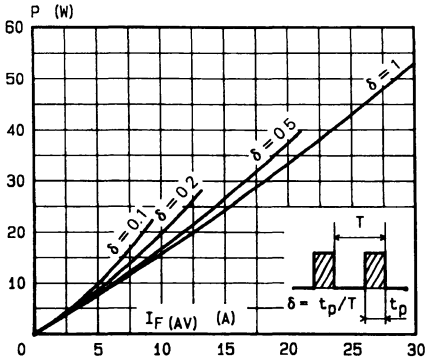


FIGURE 1 : Low frequency power losses versus average current.

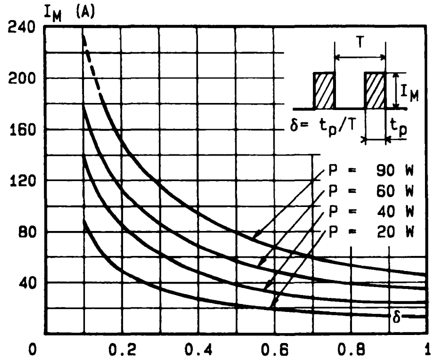


FIGURE 2 : Peak current versus form factor.

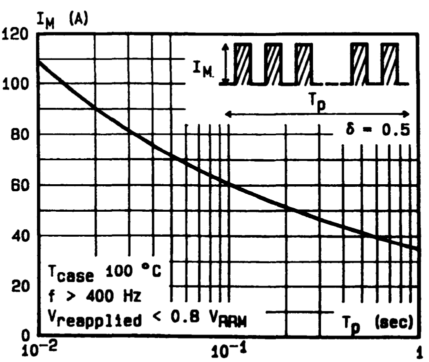


FIGURE 3 : Non repetitive peak surge current versus overload duration.

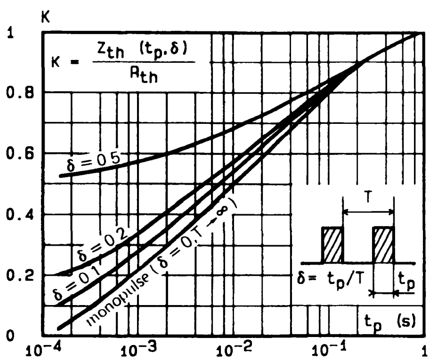


FIGURE 4 : Thermal impedance versus pulse width.

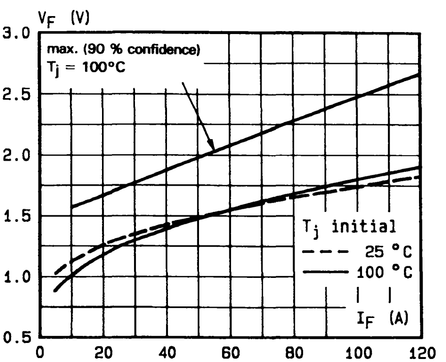


FIGURE 5 : Voltage drop versus forward current.

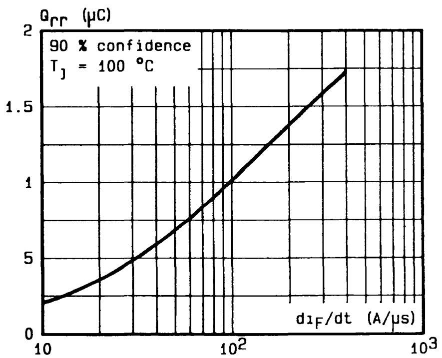


FIGURE 6 : Recovery charge versus di_F/dt.

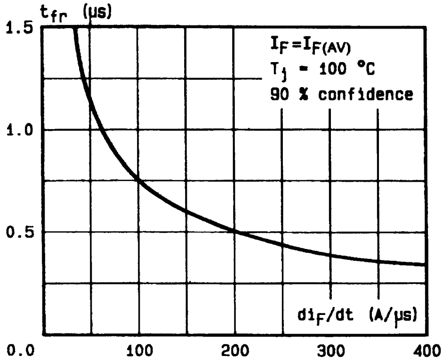


FIGURE 7 : Recovery time versus dI_F/dt.

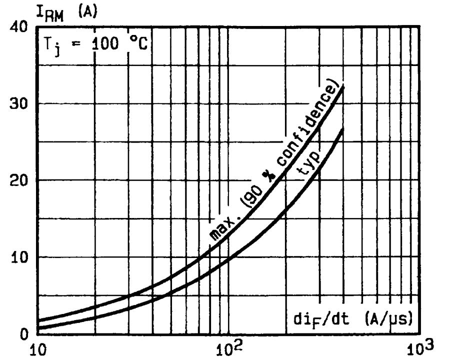


FIGURE 8 : Peak reverse current versus dI_F/dt.

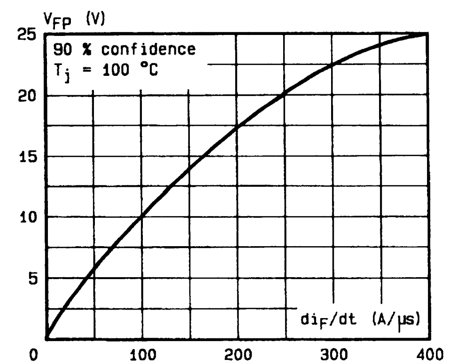


FIGURE 9 : Peak forward voltage versus dI_F/dt.

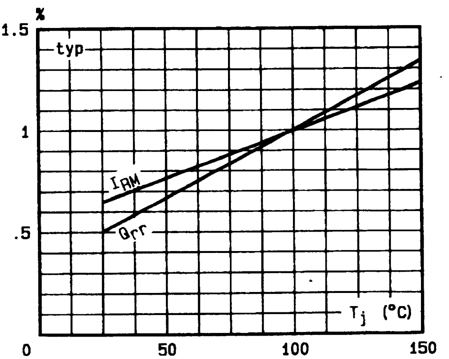


FIGURE 10 : Dynamic parameters versus junction temperature.

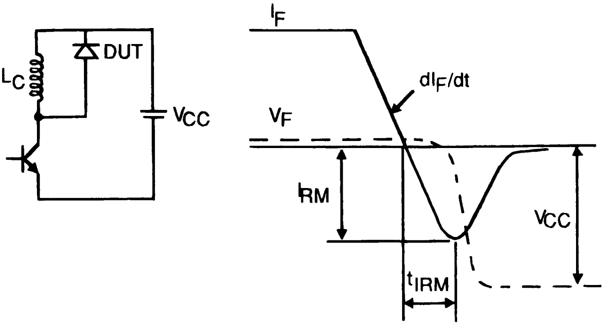


Figure 11 : Turn-off switching characteristics (without series inductance).

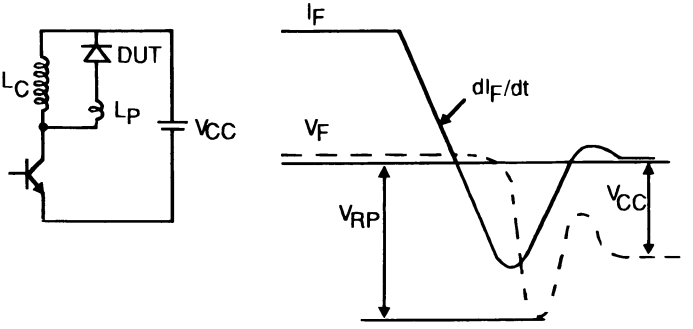
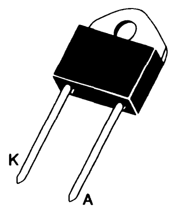


Figure 12 : Turn-off switching characteristics (with series inductance).

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 15pF

Insulating voltage 2500 V_{RMS}



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 50°C δ = 0.5	30	A
I_{FSM}	Surge Non Repetitive Forward Current	t_p = 10ms Sinusoïdal	200	A
P	Power Dissipation	T_{case} = 50°C	60	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.6	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			165	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \le 0.05$µH T_j = 100°C See Figure 11			200	ns
	di_F/dt = – 240A/µs			120		
I_{RM}	di_F/dt = – 120A/µs				19.5	A
	di_F/dt = – 240A/µs			22		

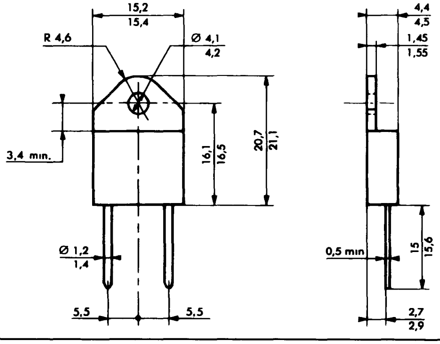
TURN-OFF OVERVOLTAGE COEFFICIENT

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F\,(AV)}$ di_F/dt = – 30A/µs L_p = 5µH See Figure 12			4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.010\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.010\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Cooling method type conduction (method C)
Marking type number
Weight : 4 3g
Recommended torque value · 80cm N
Maximum torque value · 100cm.N

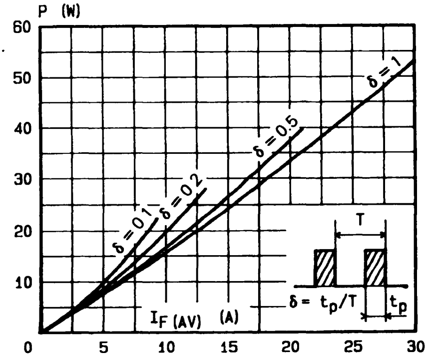


FIGURE 1 : Low frequency power losses versus average current.

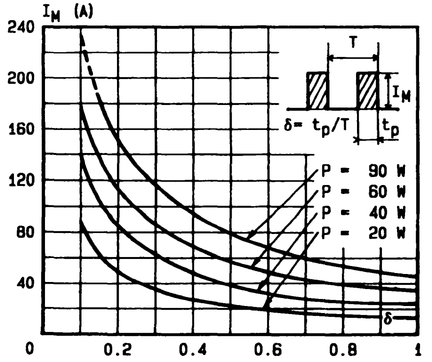


FIGURE 2 : Peak current versus form factor.

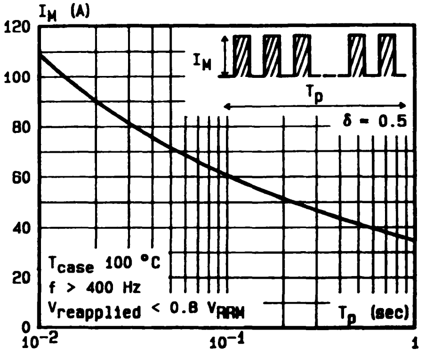


FIGURE 3 : Non repetitive peak surge current versus overload duration.

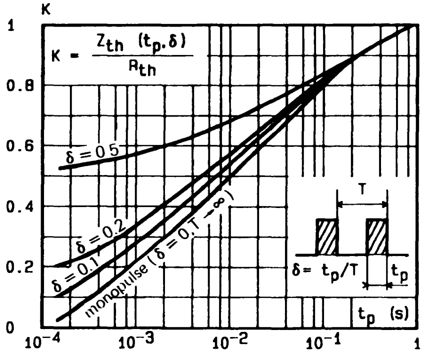


FIGURE 4 : Thermal impedance versus pulse width.

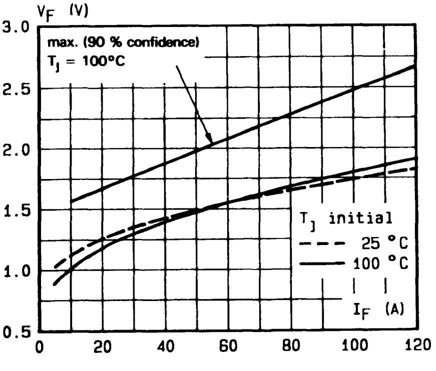


FIGURE 5 : Voltage drop versus forward current.

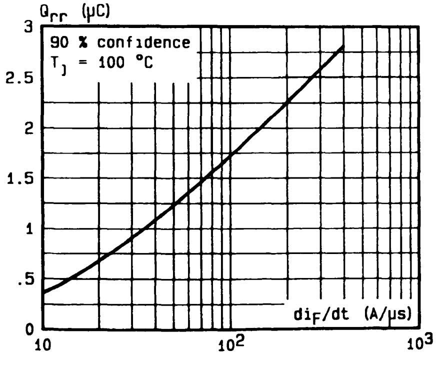


FIGURE 6 : Recovery charge versus di_F/dt.

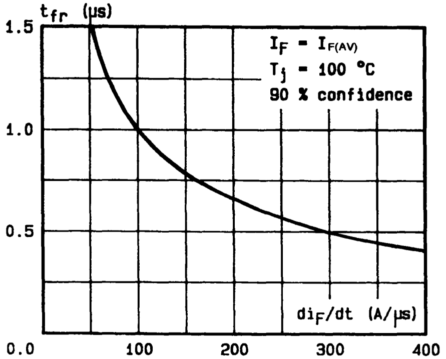


FIGURE 7 : Recovery time versus di_F/dt.

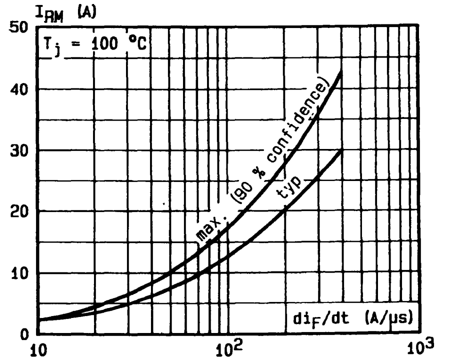


FIGURE 8 : Peak reverse current versus di_F/dt.

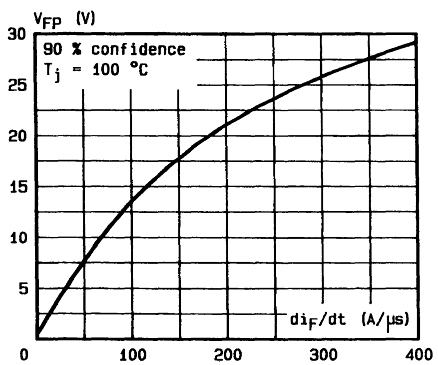


FIGURE 9 : Peak forward voltage versus di_F/dt.

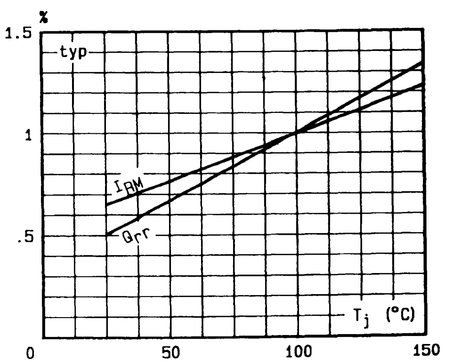


FIGURE 10 : Dynamic parameters versus junction temperature.

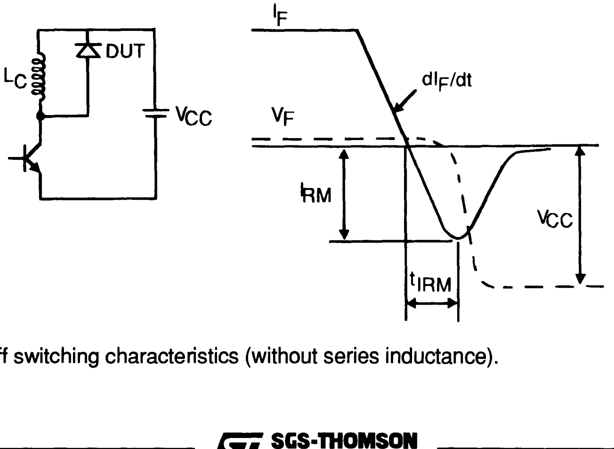


Figure 11 : Turn-off switching characteristics (without series inductance).

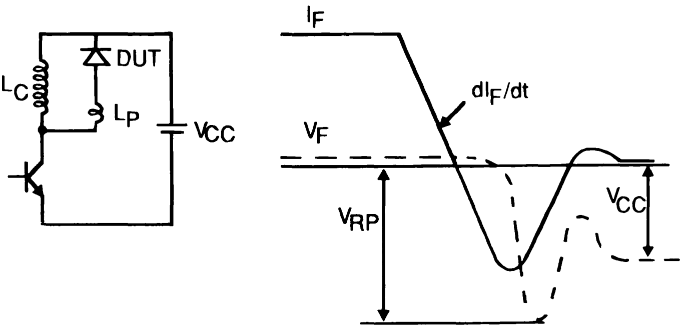


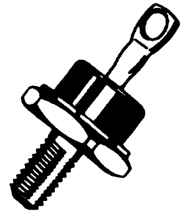
Figure 12 : Turn-off switching characteristics (with series inductance).

SGS-THOMSON MICROELECTRONICS

BYT 60-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



DO 5
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	800	A
$I_{F(RMS)}$	RMS Forward Current		100	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 80°C$ $\delta = 0.5$	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_P = 10ms$ sinusoidal	800	A
P	Power Dissipation	$T_{case} = 80°C$	100	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 60–			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.7	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			60	µA
	$T_j = 100°C$				10	mA
V_F	$T_j = 25°C$	$I_F = 60A$			1.5	V
	$T_j = 100°C$				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			100	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$di_F/dt = -240A/\mu s$	$V_{CC} = 200V$ $I_F = 60A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See Figure 11			75	ns
	$di_F/dt = -480A/\mu s$			50		
I_{RM}	$di_F/dt = -240A/\mu s$				18	A
	$di_F/dt = -480A/\mu s$			24		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

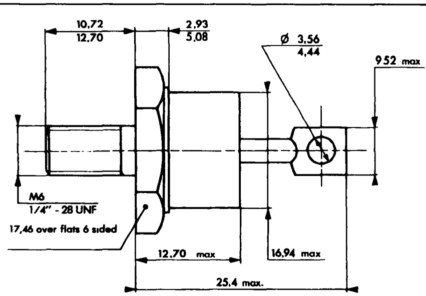
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	$T_j = 100\ °C$ $V_{CC} = 120\ V$ $I_F = I_{F(AV)}$ See note $di_F/dt = -60\ A/\mu s$ $L_p = 1.3\ \mu H$ See Figure 12		3		

Note : Applicable to BYT 60-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0045\ I_F$ $\qquad P = 1.1 \times I_{F(AV)} + 0.0045\ I_{F\,(RMS)}^2$

PACKAGE MECHANICAL DATA : DO 5 Metal



Cooling method : by conduction (method C)
Marking · Cathode connected to case · type number
Anode connected to case type number + suffix R (consult us for these reverse version data sheets)
Weight · 18 84g
Recommended torque value . 250cm N
Maximum torque value · 310cm N

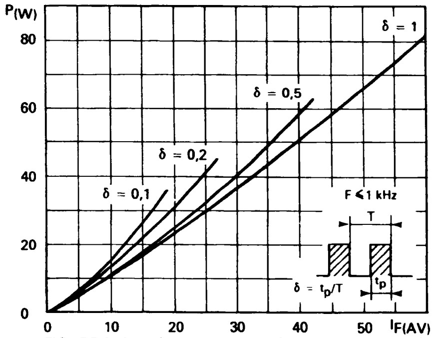


FIGURE 1 : Low frequence power losses versus average current.

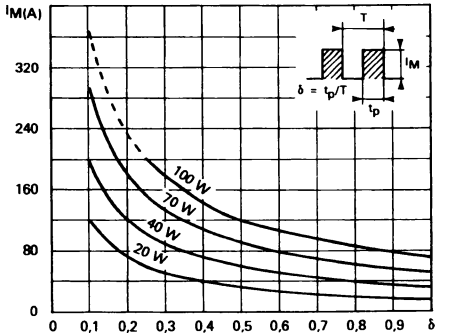


FIGURE 2 . Peak current versus form factor.

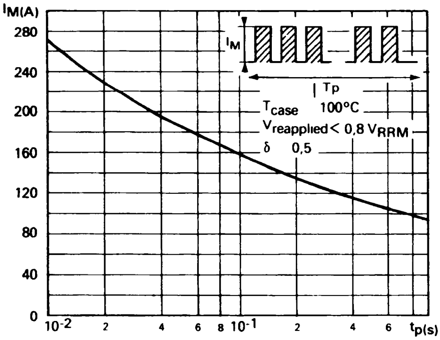


FIGURE 3 Non repetitive peak surge current versus overload duration.

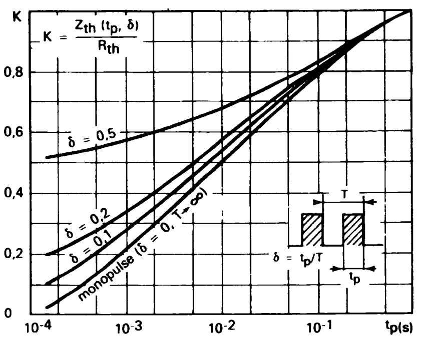


FIGURE 4 · Thermal impedance versus pulse width.

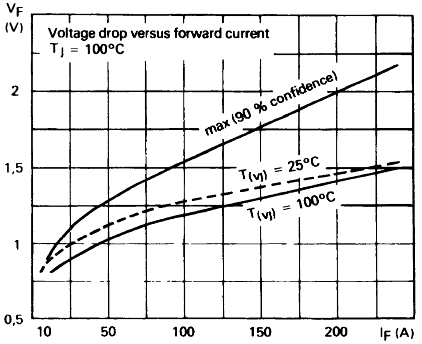


FIGURE 5 Voltage drop versus forward current.

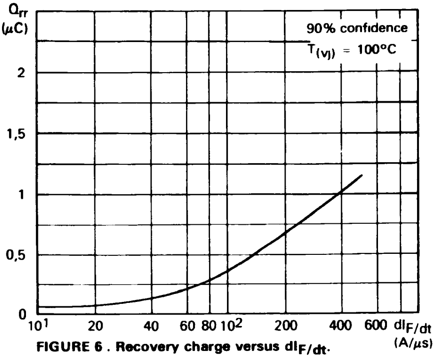


FIGURE 6 . Recovery charge versus dI_F/dt.

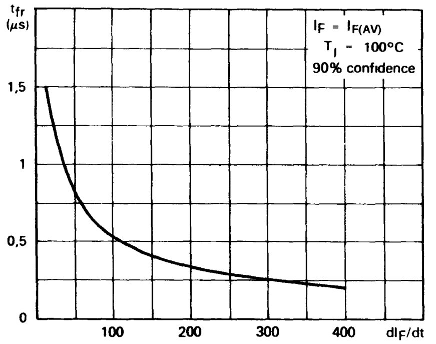


FIGURE 7 : Recovery time versus dI_F/dt.

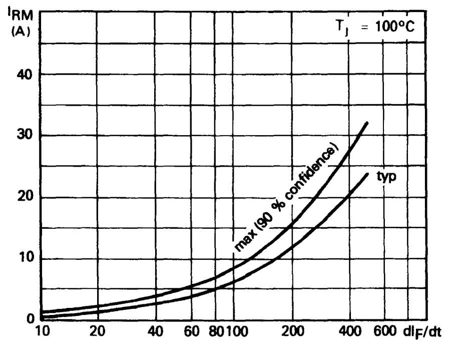


FIGURE 8 : Peak reverse current versus dI_F/dt.

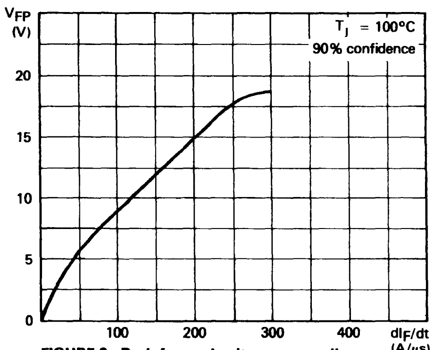


FIGURE 9 : Peak forward voltage versus dI_F/dt.

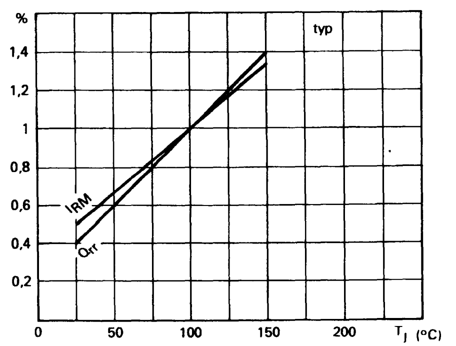


FIGURE 10 : Dynamic parameters versus junction temperature.

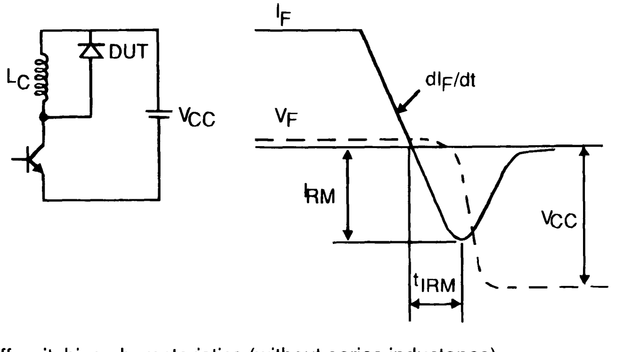


Figure 11 : Turn-off switching characteristics (without series inductance).

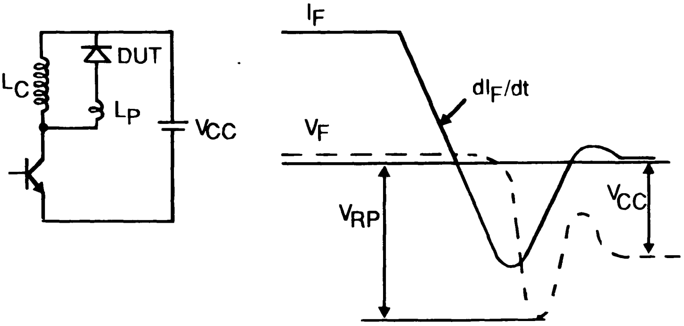
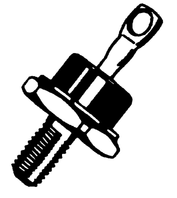


Figure 12 : Turn-off switching characteristics (with series inductance).

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 5
(Metal)

SUITABLE APPLICATIONS
- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	750	A
$I_{F(RMS)}$	RMS Forward Current		140	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	400	A
P	Power Dissipation	$T_{case} = 50°C$	125	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 60-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.8	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			100	µA
	$T_j = 100°C$				6	mA
V_F	$T_j = 25°C$	$I_F = 60A$			1.9	V
	$T_j = 100°C$				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			135	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			65	

TURN -OFF SWITCHING CHARACTERISTICS - Without Series Inductance

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -240A/\mu s$	$V_{CC} = 200V$ $I_F = 60A$ $L_p \leq 0.05\mu H$ $T_j = 100°C$ See fig. 2			160	ns
	$dI_F/dt = -480A/\mu s$			100		
I_{RM}	$dI_F/dt = -240A/\mu s$				30	A
	$dI_F/dt = -480A/\mu s$			38		

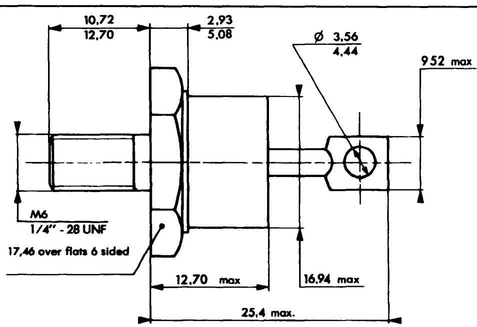
TURN -OFF OVERVOLTAGE COEFFICIENT - With Series Inductance

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RM}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 150V$ $I_F = I_{F(AV)}$ $dI_F/dt = -60A/\mu s$ $L_p = 2\mu H$ See fig. 3		3.3	4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.005\ I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.005\ I_{F(RMS)}^2$

PACKAGE MECHANICAL DATA DO 5 Metal



Cooling method · by conduction (method C)
Marking · type number
Weight · 18.84g
Recommended torque value 250cm. N
Maximum torque value · 310cm N

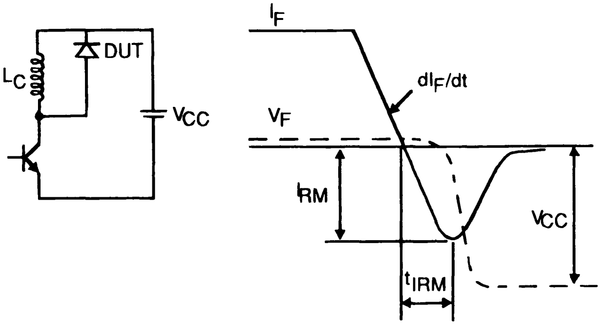


Figure 1 : Turn-off switching characteristics (without series inductance).

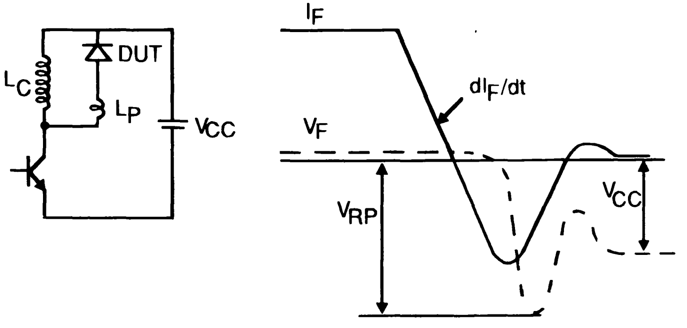


Figure 2 : Turn-off switching characteristics (with series inductance).

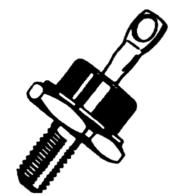
SGS-THOMSON
MICROELECTRONICS

BYT 60-1000

FAST RECOVERY RECTIFIER DIODE

- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DO 5
(Metal)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	750	A
$I_{F(RMS)}$	RMS Forward Current		140	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$	60	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	400	A
P	Power Dissipation	$T_{case} = 50°C$	125	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	0.8	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 60A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			170	ns
		I_F = 0.5A I_R = 1A I_{rr}=0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 240A/µs	V_{CC} = 200V I_F = 60A $L_p \leq 0.05\mu H$ T_j = 100°C See figure 1			200	ns
	dI_F/dt = – 480A/µs			120		
I_{RM}	dI_F/dt = – 240A/µs				40	A
	dI_F/dt = – 480A/µs			44		

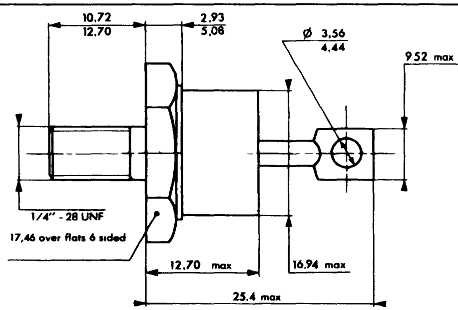
TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C dI_F/dt = – 60A/µs	V_{CC} = 200V L_p = 2.5µH	$I_F = I_{F\,(AV)}$ See figure 2		3.3	4.5	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.005\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.005\ I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 5 Metal



Cooling method by conduction (method C)
Marking : type number
Weight 18 84g
Recommended torque value · 250cm N
Maximum torque value · 310cm N

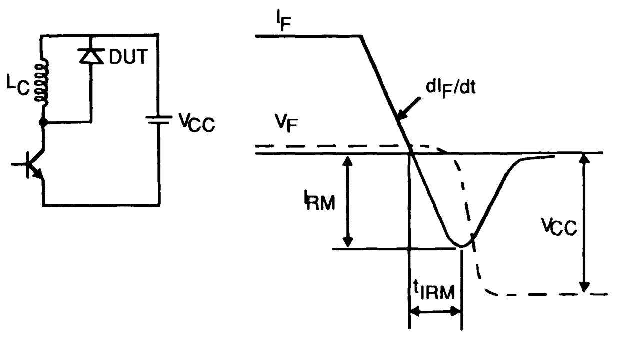


Figure 1 : Turn-off switching characteristics (without series inductance).

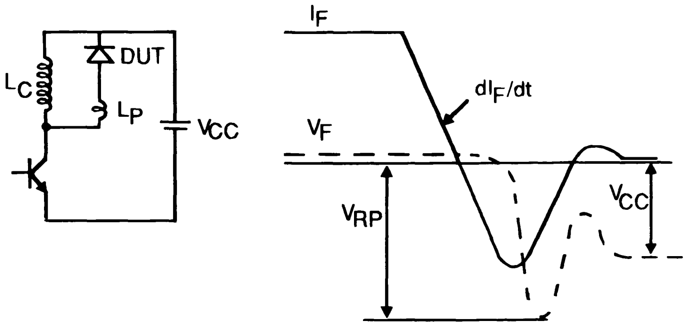


Figure 2 : Turn-off switching characteristics (without series inductance).

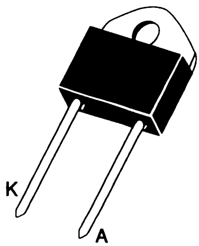
SGS-THOMSON MICROELECTRONICS

BYT 60P-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING

Cathode connected to case



DOP 3
(Plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	800	A
$I_{F(RMS)}$	RMS Forward Current		100	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 70°C$ $\delta = 0.5$	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	550	A
P	Power Dissipation	$T_{case} = 70°C$	100	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 60P-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Test Conditions	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.8	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	$T_j = 25°C$	$V_R = V_{RRM}$			60	µA
	$T_j = 100°C$				10	mA
V_F	$T_j = 25°C$	$I_F = 60A$			1.5	V
	$T_j = 100°C$				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$	$I_F = 1A$ $dI_F/dt = -15A/µs$ $V_R = 30V$			100	ns
		$I_F = 0.5A$ $I_R = 1A$ $I_{rr} = 0.25A$			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	$dI_F/dt = -240A/µs$	$V_{CC} = 200V$ $I_F = 60A$ $L_p < 0.05µH$ $T_j = 100°C$ See Figure 11			75	ns
	$dI_F/dt = -480A/µs$			50		
I_{RM}	$dI_F/dt = -240A/µs$				18	A
	$dI_F/dt = -480A/µs$			24		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

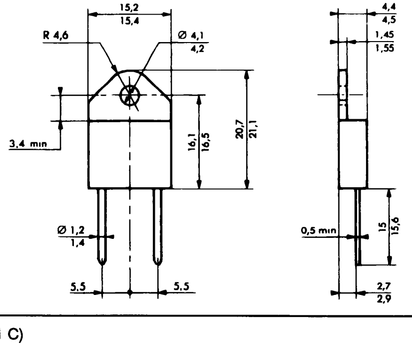
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \dfrac{V_{RP}}{V_{CC}}$	$T_j = 100°C$ $V_{CC} = 120V$ $I_F = I_{F(AV)}$ See note $dI_F/dt = -60A/µs$ $L_p = 1.3µH$ See Figure 12		3.3		

Note : Applicable to BYT 60P 400 V only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0045\ I_F$ $\qquad$ $P = 1.1 \times I_{F(AV)} + 0.0045 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DOP 3 Plastic



Cooling method . by conduction (method C)
Marking : type number
Weight : 4.3g
Recommended torque value : 80cm.N
Maximum torque value · 100cm N

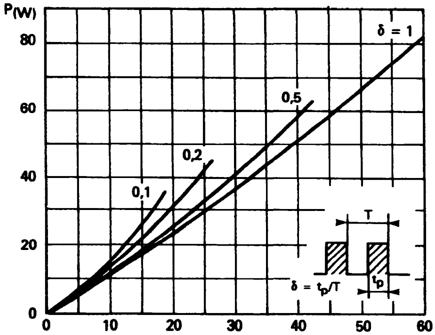


FIGURE 1 : Low frequency power losses versus average current

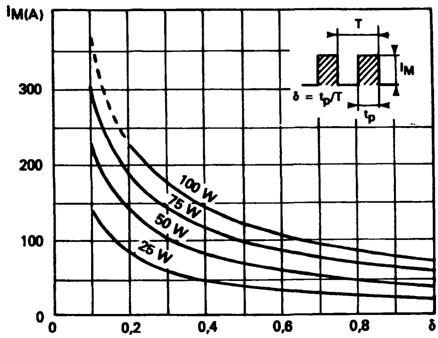


FIGURE 2 : Peak current versus form factor.

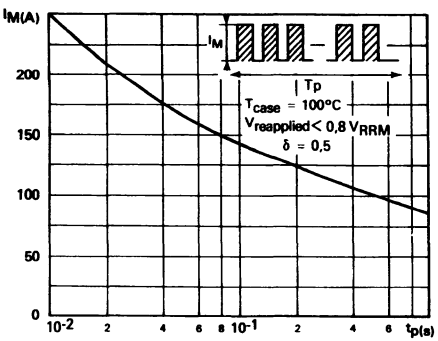


FIGURE 3 : Non repetitive peak surge current versus overload duration.

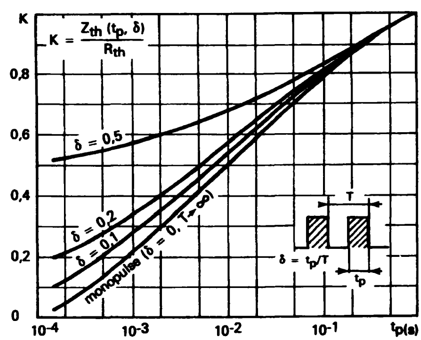


FIGURE 4 : Thermal impedance versus pulse width.

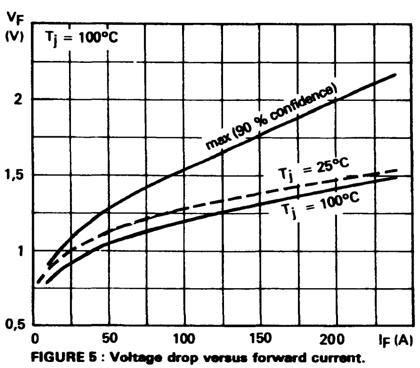


FIGURE 5 : Voltage drop versus forward current.

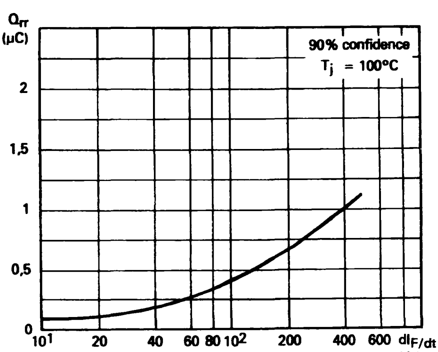


FIGURE 6 : Recovery charge versus dI_F/dt.

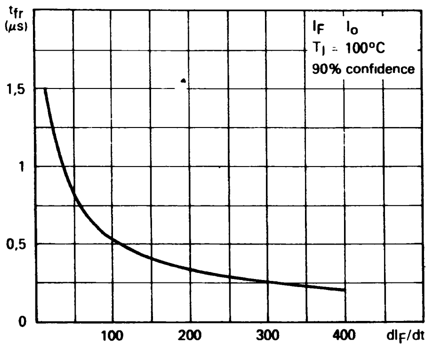


FIGURE 7 : Recovery time versus $dI_{F/dt}$.

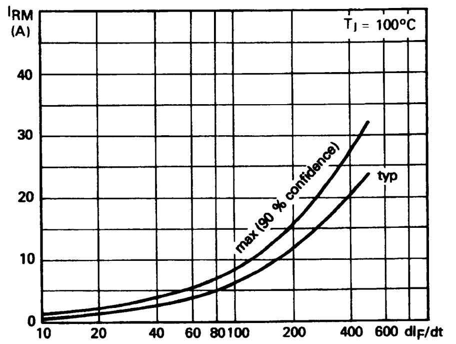


FIGURE 8 : Peak reverse current versus $dI_{F/dt}$.

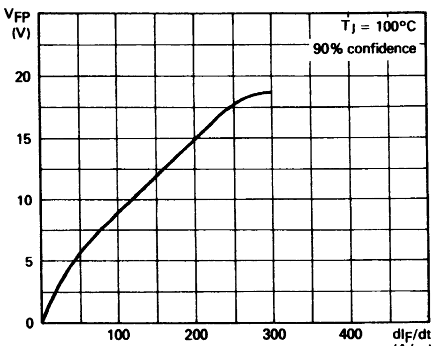


FIGURE 9 : Peak forward voltage versus $dI_{F/dt}$.

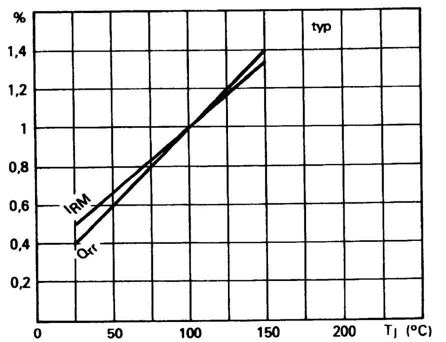


FIGURE 10 : Dynamic parameters versus junction temperature.

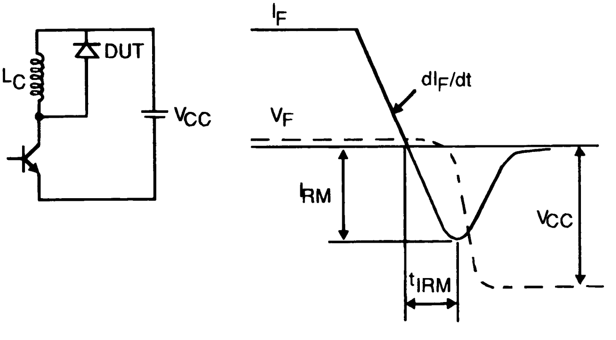


Figure 11 : Turn-off switching characteristics (without series inductance).

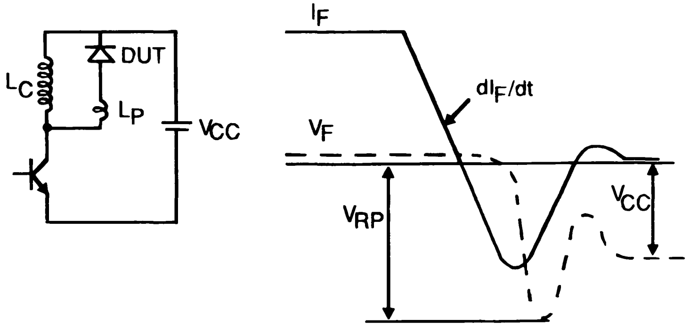


Figure 12 : Turn-off switching characteristics (with series inductance).

SGS-THOMSON
MICROELECTRONICS

BYT 71-100 A → 800 A

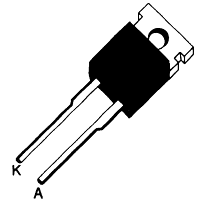
FAST RECOVERY RECTIFIER DIODES

- HIGH VOLTAGE CAPABILITY
- FAST AND SOFT RECOVERY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

APPLICATIONS

- MOTOR CONTROLS AND CONVERTERS
- SWITCHMODE POWER SUPPLIES

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Fast recovery rectifiers suited for applications in combination with superswitch transistors.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	90	A
$I_{F\,(RMS)}$	RMS Forward Current		12	A
$I_{F\,(AV)}$	Average Forward Current	T_C = 115°C δ = 0.5	6	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	90	A
P_{tot}	Power Dissipation	T_C = 90°C	15	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYX 71-					Unit
		100 A	200 A	400 A	600 A	800 A	
V_{RRM}	Repetitive Peak Reverse Voltage	100	200	400	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	100	200	400	600	800	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	4	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	μA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 6A			1.4	V
	T_j = 100°C				1.3	

RECOVERY CHARACTERISTICS

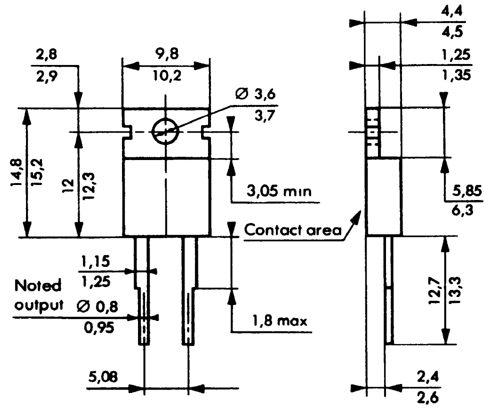
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/μs			300	ns
Q_{rr}	T_j = 25°C V_R = 200V	I_F = 6A	di_F/dt = – 50A/μs		1.5		μC

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.025\ I_F$ $\qquad$ $P = 1.2 \times I_{F(AV)} + 0.025\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking type number
Weight 2.4g
Recommended torque value 80cm. N
Maximum torque value : 100cm N

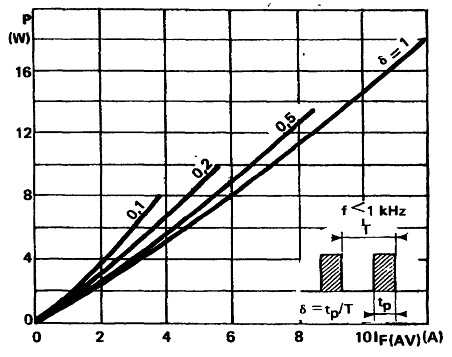


FIGURE 1: Low frequency power losses versus average current

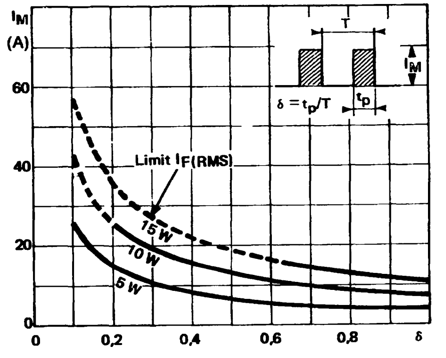


FIGURE 2: Peak current versus form factor

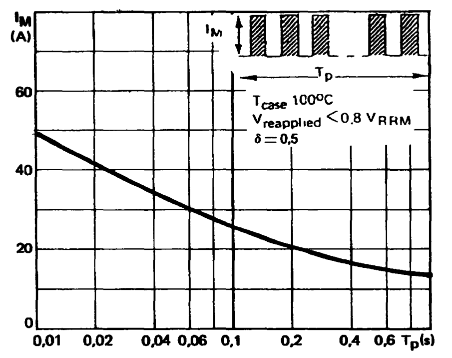


FIGURE 3: Non repetitive peak surge current versus overload duration

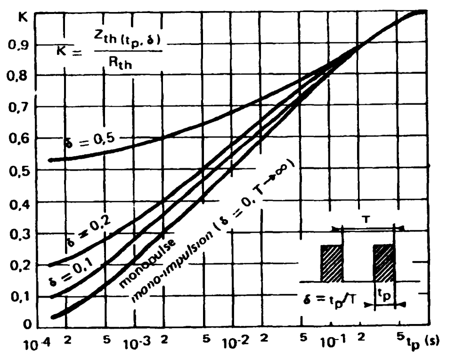


FIGURE 4 : Thermal impedance versus pulse width

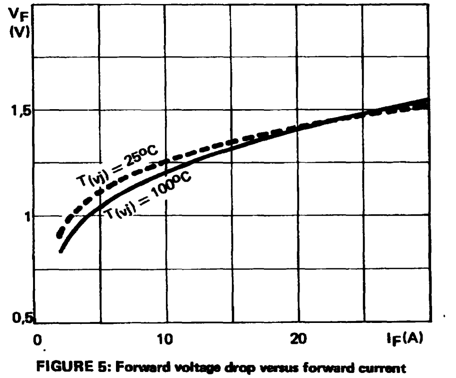


FIGURE 5: Forward voltage drop versus forward current

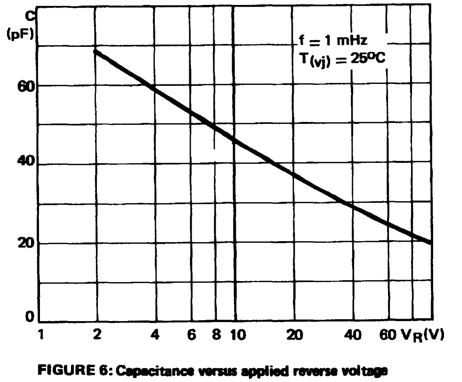


FIGURE 6: Capacitance versus applied reverse voltage

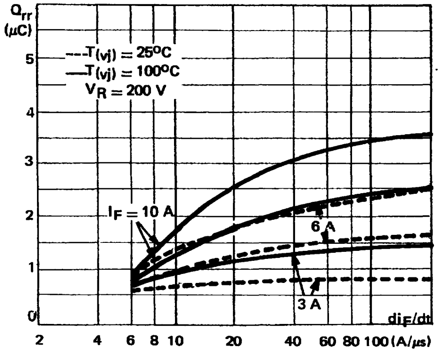


FIGURE 7: Recovery charge versus di_F/dt

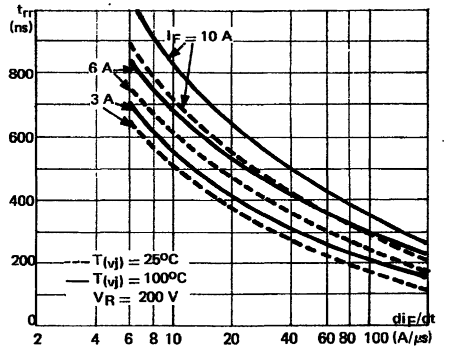


FIGURE 8: Recovery time versus di_F/dt

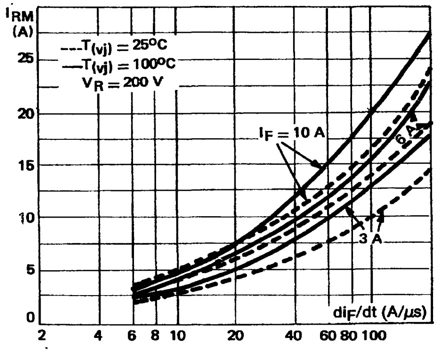
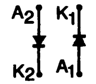


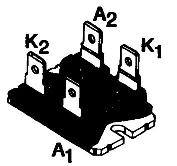
FIGURE 9: Peak reverse current versus di_F/dt

FAST RECOVERY RECTIFIER DIODES

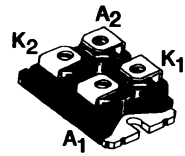
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

Insulating voltage 2500 V_{RMS}





Fast-on version



Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current	per leg	50	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 60°C$ $\delta = 0.5$ per leg	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	350	A
P	Power Dissipation	$T_{case} = 60°C$ per leg	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 230PI(V)-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	250	350	450	V

THERMAL RESISTANCES

Symbol	Test Conditions		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	1.5 0.8	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			35	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 30A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			100	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			50	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			75	ns
	dI_F/dt = – 240A/µs			50		
I_{RM}	dI_F/dt = – 120A/µs				9	A
	dI_F/dt = – 240A/µs			12		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 60V $I_F = I_{F(AV)}$ See note dI_F/dt = – 30A/µs L_p = 1µH See Figure 12		3.3		

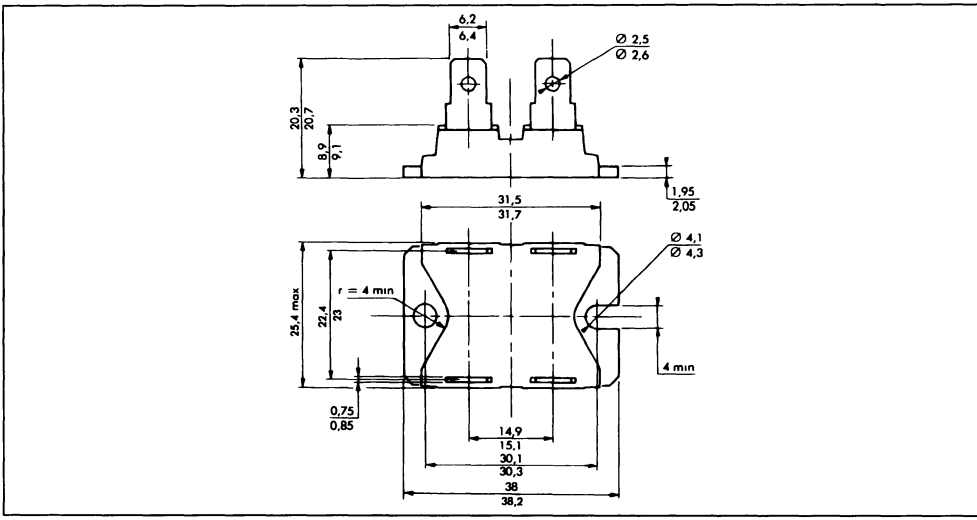
Note : Applicable to BYT 230PI(V)-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0095\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.0095\ I_F{}^2{}_{(RMS)}$

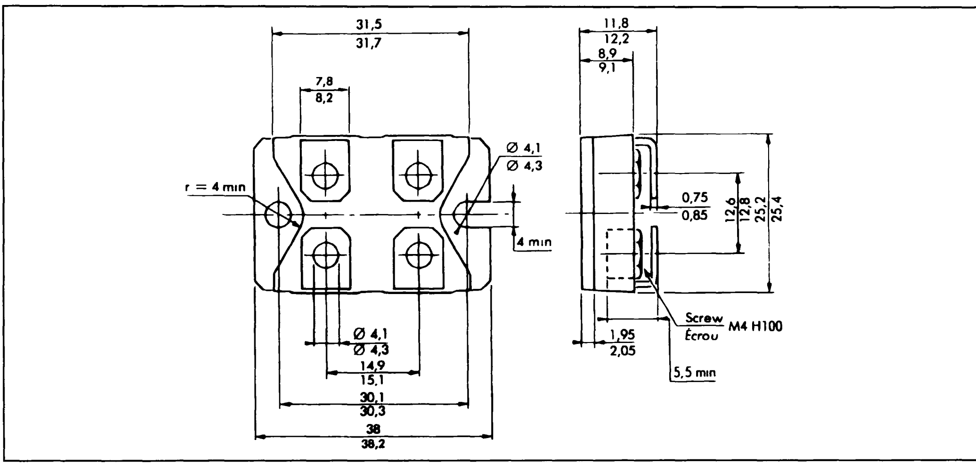
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



Marking : type number + suffix V

Recommended screw torque value : 13 ± 2kg.cm
Maximum screw torque value : 15kg.cm

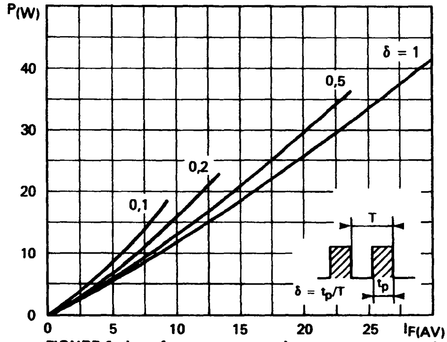


FIGURE 1 : Low frequence power losses versus average current.

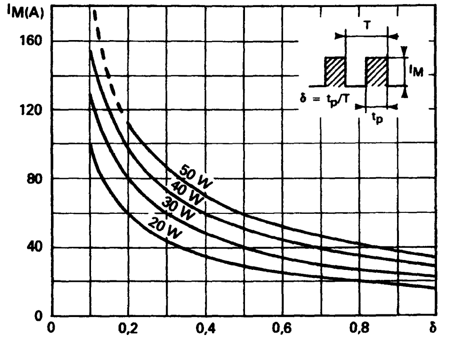


FIGURE 2 : Peak current versus form factor.

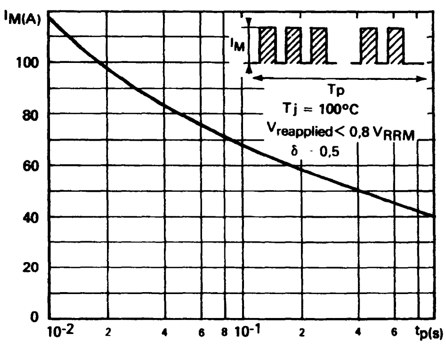


FIGURE 3 : Non repetitive peak surge current versus overload duration.

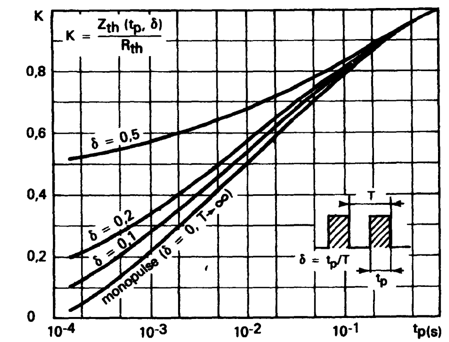


FIGURE 4 : Thermal impedance versus pulse width.

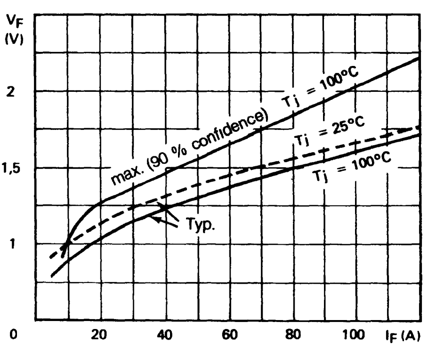


FIGURE 5 : Voltage drop versus forward current.

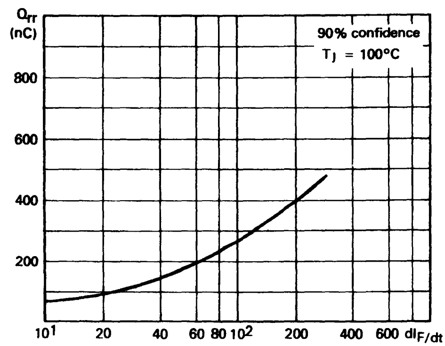


FIGURE 6 : Recovery charge versus $dI_{F/dt}$.

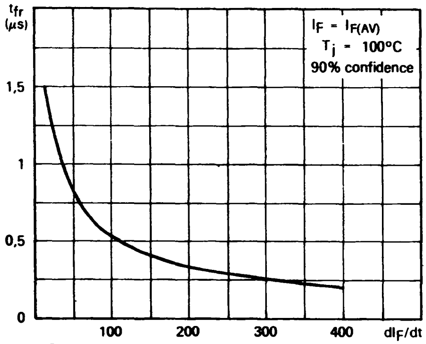


FIGURE 7 : Recovery time versus dI_F/dt. (A/µs)

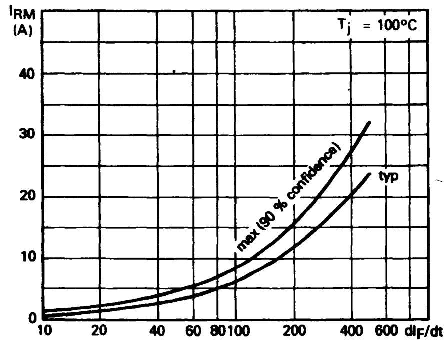


FIGURE 8 : Peak reverse current versus dI_F/dt. (A/µs)

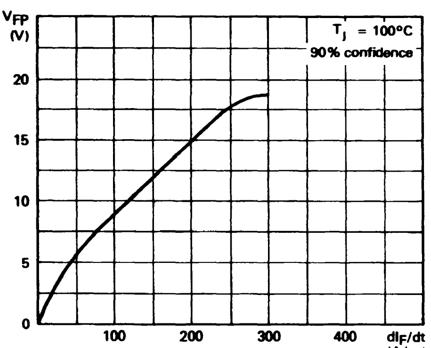


FIGURE 9 : Peak forward voltage versus dI_F/dt. (A/µs)

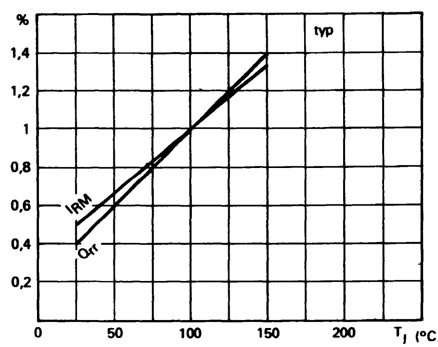


FIGURE 10 : Dynamic parameters versus junction temperature.

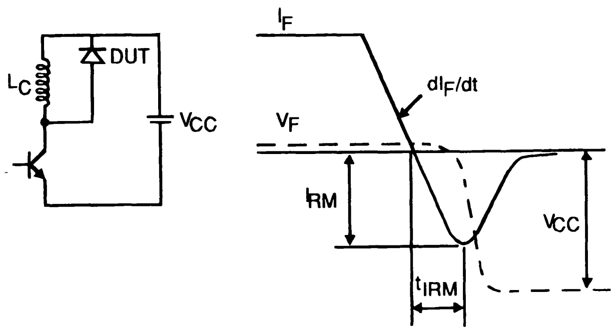


Figure 11 : Turn-off switching characteristics (without series inductance).

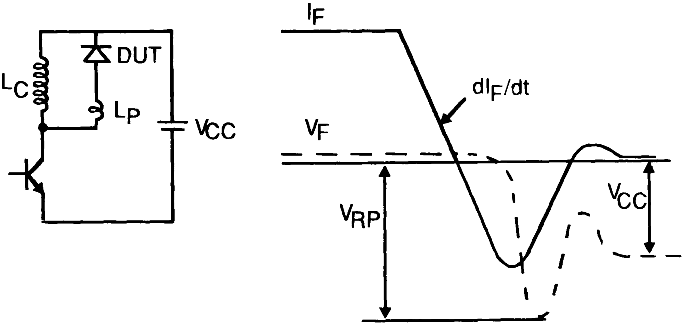


Figure 12 : Turn-off switching characteristics (with series inductance).

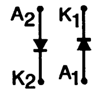
SGS-THOMSON MICROELECTRONICS

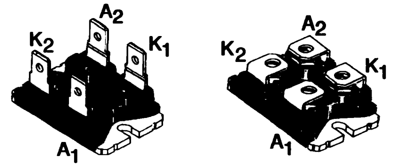
BYT 230 PI(V)-600/800

FAST RECOVERY RECTIFIER DIODES

- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

Insulating voltage 2500 V_{RMS}





Fast-on version

Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current	per leg	70	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 50°C$ $\delta = 0.5$ per leg	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P	Power Dissipation	$T_{case} = 50°C$ per leg	60	W
T_{stg} T_j	Storage and Junction Temperature Range		− 40 to + 150	°C

Symbol	Parameter	BYT 230 PI (V)-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	1.5 0.8	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			130	ns
		I_F = 0.5A I_R=1A I_{RR} = 0.25A			55	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \leq$ 0.05µH T_j = 100°C See Figure 11			160	ns
	di_F/dt = – 240A/µs			100		
I_{RM}	di_F/dt = – 120A/µs				15	A
	di_F/dt = – 240A/µs			19		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

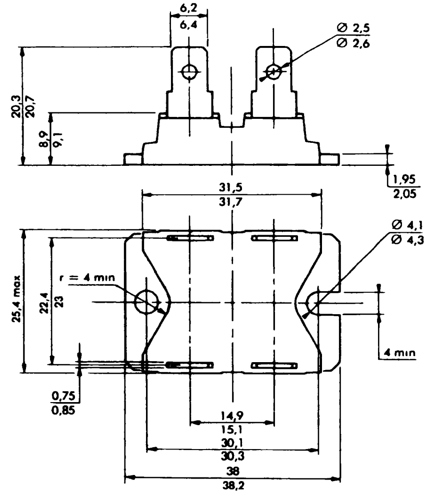
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 150V $I_F = I_{F(AV)}$ di_F/dt = – 30A/µs L_p = 4µH See Figure 12			4	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.010\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.010 I_{F}^{2}{}_{(RMS)}$

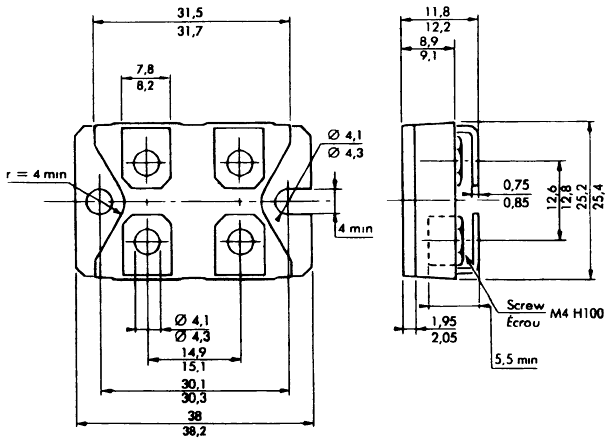
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



Marking : type number + Suffix V

Recommended screw torque value · 13 ± 2kg.cm.
Maximum screw torque value : 15kg.cm

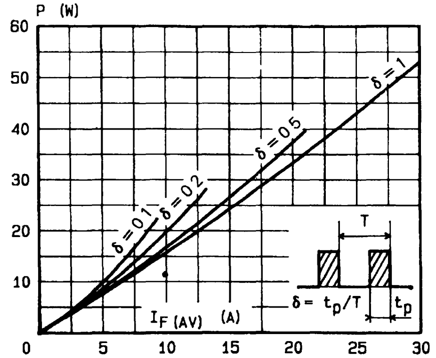


FIGURE 1 : Low frequency power losses versus average current.

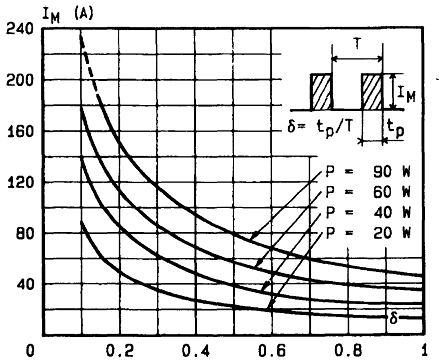


FIGURE 2 : Peak current versus form factor.

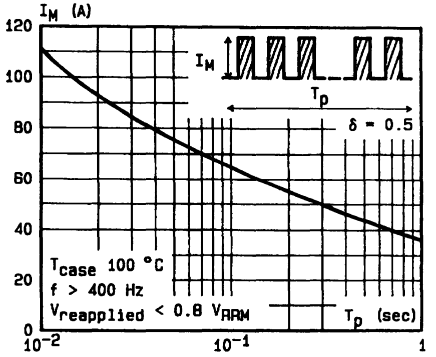


FIGURE 3 : Non repetitive peak surge current versus overload duration.

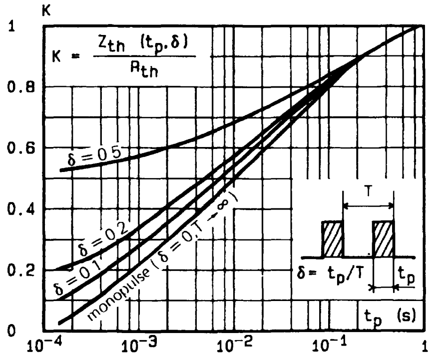


FIGURE 4 : Thermal impedance versus pulse width.

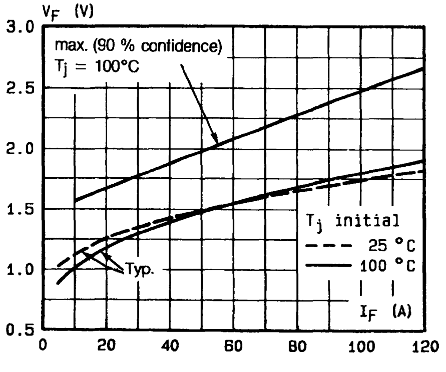


FIGURE 5 : Voltage drop versus forward current.

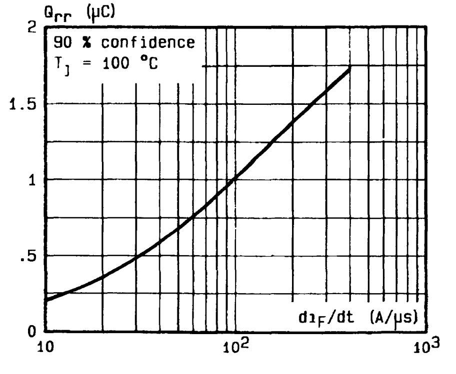


FIGURE 6 : Recovery charge versus di_F/dt.

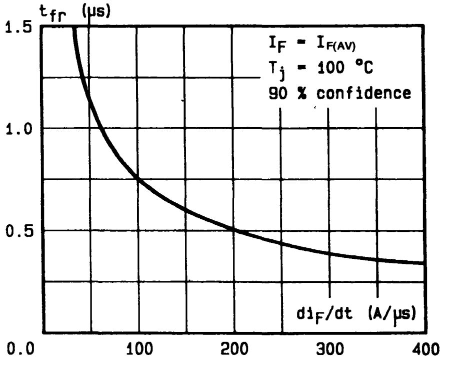


FIGURE 7 : Recovery time versus di_F/dt.

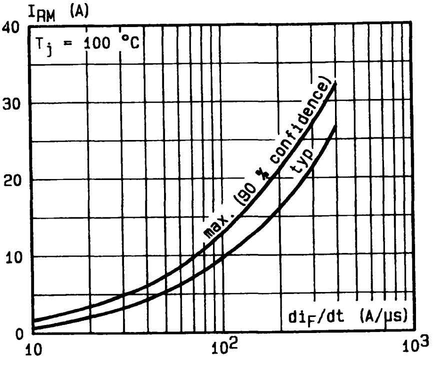


FIGURE 8 : Peak reverse current versus di_F/dt.

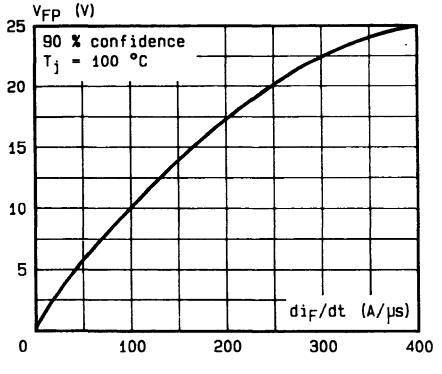


FIGURE 9 : Peak forward voltage versus di_F/dt.

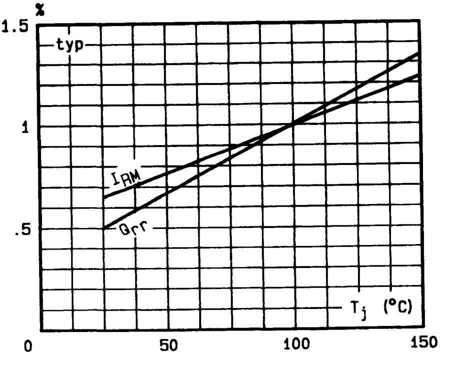


FIGURE 10 : Dynamic parameters versus junction temperature.

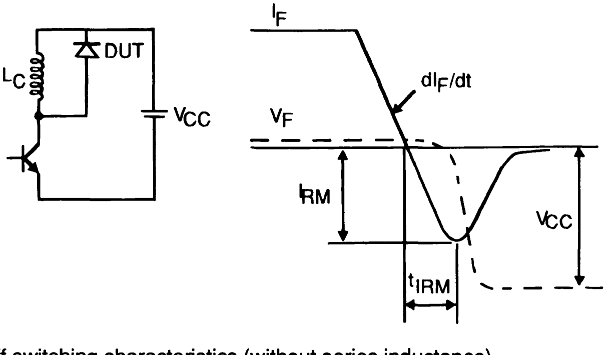


Figure 11 : Turn-off switching characteristics (without series inductance).

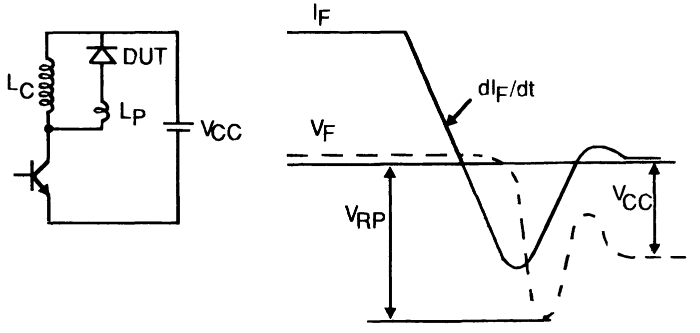


Figure 12 : Turn-off switching charcteristics (with series inductance).

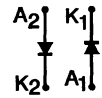
SGS-THOMSON MICROELECTRONICS

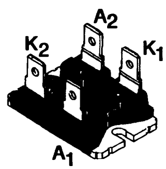
BYT 230 PI(V)-1000

FAST RECOVERY RECTIFIER DIODE

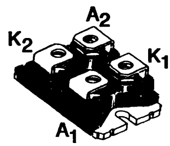
- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

Insulating voltage : 2500 V_{RMS}





Fast-on version



Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current	per leg	70	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 50°C δ = 0.5 per leg	30	A
I_{FSM}	Surge Non Repetitive Forward Current	t_p = 10ms Sinusoïdal	200	A
P	Power Dissipation	T_{case} = 50°C per leg	60	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	1.5 0.8	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A $\quad di_F/dt$ = – 15A/µs $\quad V_R$ = 30V			165	ns
		I_F = 0.5A $\quad I_R$=1A $\quad I_{rr}$=0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V $\quad I_F$ = 30A $L_p \leq$ 0.05µH $\quad T_j$ = 100°C See figure 11			200	ns
	di_F/dt = – 240A/µs			120		
I_{RM}	di_F/dt = – 120A/µs				19.5	A
	di_F/dt = – 240A/µs			22		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

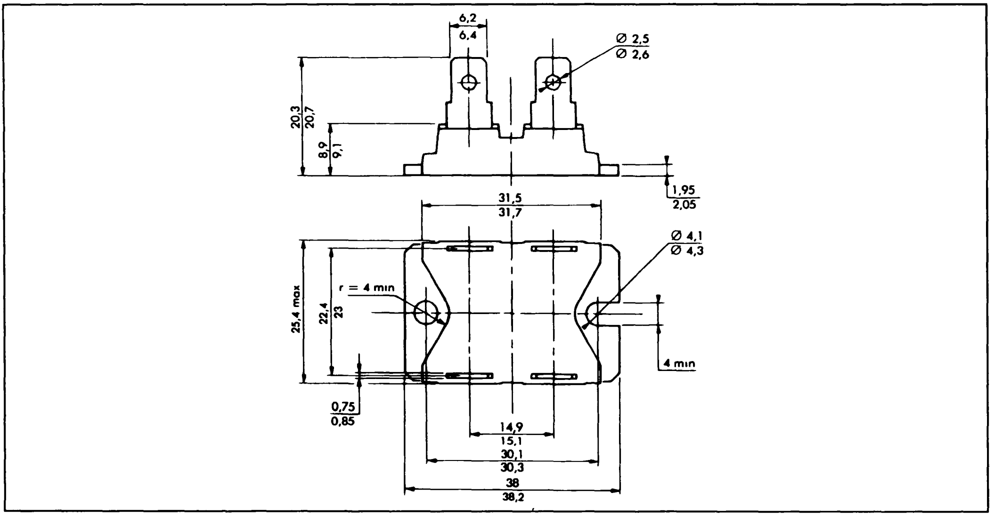
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C $\quad V_{CC}$ = 200V $\quad I_F = I_{F\,(AV)}$ di_F/dt = – 30A/µs $\quad L_p$ = 5µH $\quad$ See figure 12			4.5	

To evaluate the conduction losses use the following equation :

$V_F = 1.47 + 0.010\ I_F$ $\qquad$ $P = 1.47 \times IF(AV) + 0.010 I_F{}^2{}_{(RMS)}$

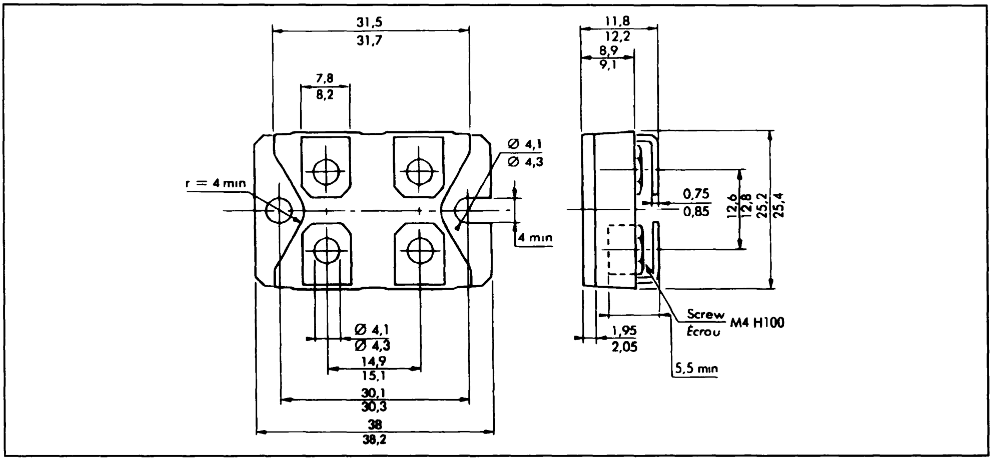
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Pastic : SCREW VERSION



Marking : type number + suffix V

Recommended screw torque value : 13 ± 2kg.cm.
Maximum screw torque value : 15kg.cm.

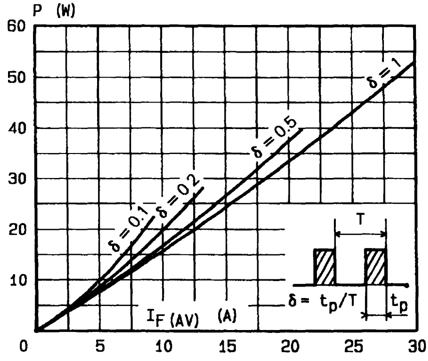


FIGURE 1 : Low frequency power losses versus average current.

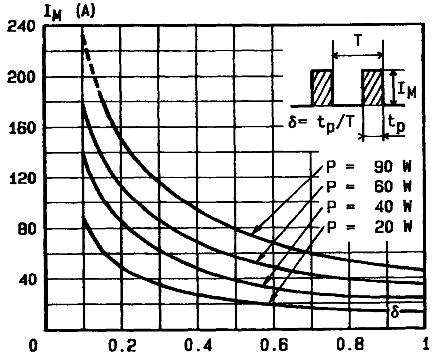


FIGURE 2 : Peak current versus form factor.

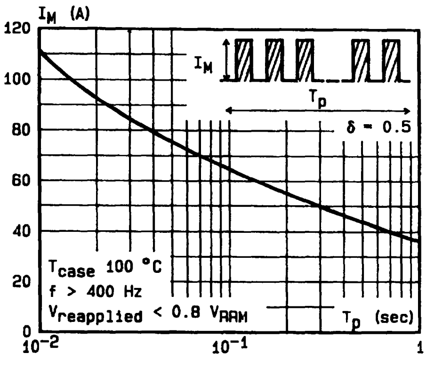


FIGURE 3 : Non repetitive peak surge current versus overload duration.

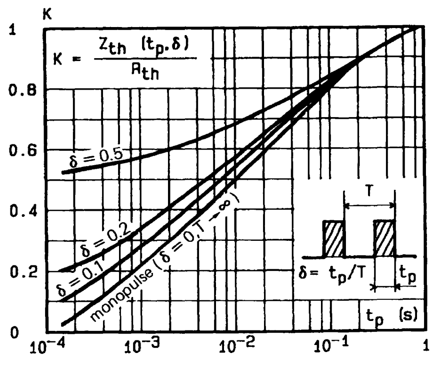


FIGURE 4 : Thermal impedance versus pulse width.

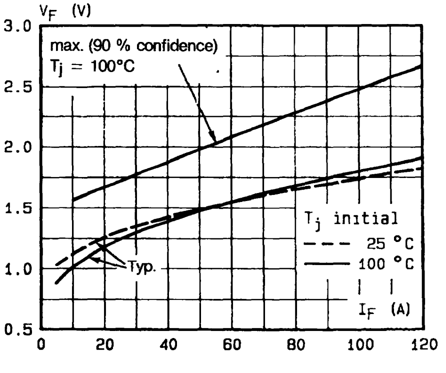


FIGURE 5 : Voltage drop versus forward current.

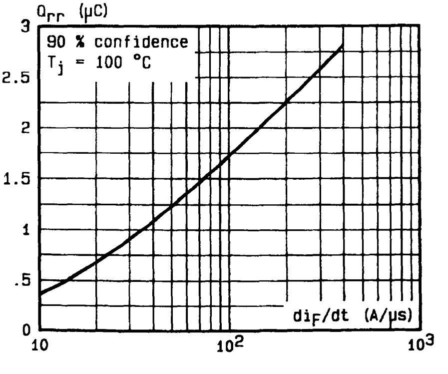


FIGURE 6 : Recovery charge versus di_F/dt.

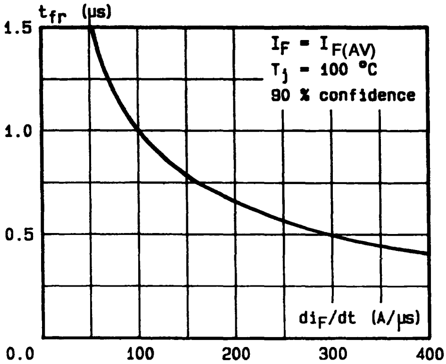


FIGURE 7 : Recovery time versus di_F/dt.

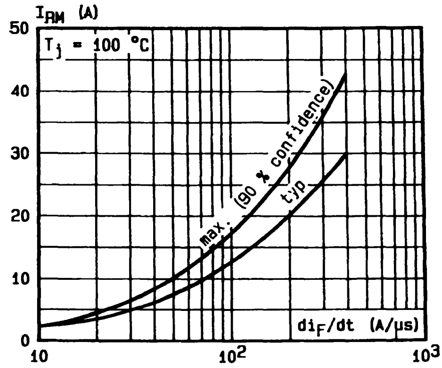


FIGURE 8 : Peak reverse current versus di_F/dt.

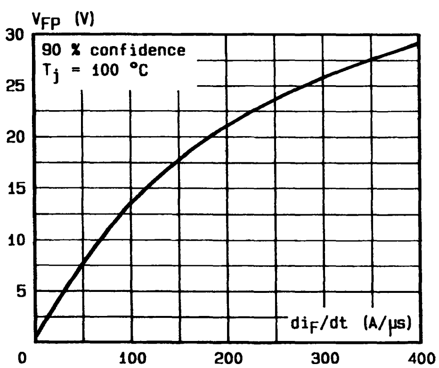


FIGURE 9 : Peak forward voltage versus di_F/dt.

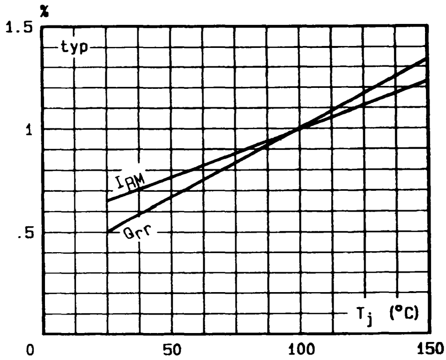


FIGURE 10 : Dynamic parameters versus junction temperature.

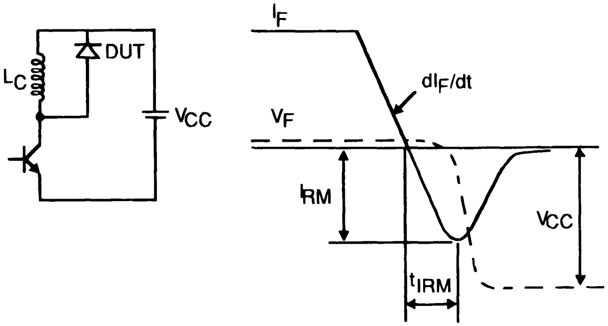


Figure 11 : Turn-off switching characteristics (without series inductance).

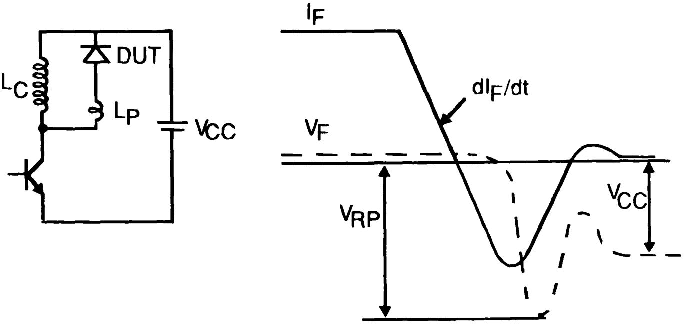


Figure 12 : Turn-off switching characteristics (with series inductance).

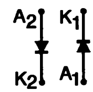
SGS-THOMSON
MICROELECTRONICS

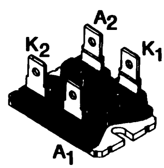
BYT 230 PI(V)-1200

FAST RECOVERY RECTIFIER DIODE

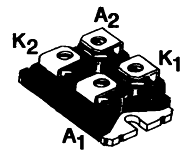
- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

Insulating voltage : 2500 V_{RMS}





Fast-on version



Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1200	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	375	A
$I_{F(RMS)}$	RMS Forward Current	per leg	70	A
$I_{F(AV)}$	Average Forward Current	T_{case} = 55°C δ = 0.5 per leg	30	A
I_{FSM}	Surge Non Repetitive Forward Current	t_p = 10ms Sinusoïdal	200	A
P	Power Dissipation	T_{case} = 55°C per leg	60	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	1.5 0.8	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 30A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			165	ns
		I_F = 0.5A I_R = 1A I_{rr}=0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 120A/µs	V_{CC} = 200V I_F = 30A $L_p \leq$ 0.05µH T_j = 100°C See figure 1			200	ns
	di_F/dt = – 240A/µs			120		
I_{RM}	di_F/dt = – 120A/µs				20	A
	di_F/dt = – 240A/µs			22		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

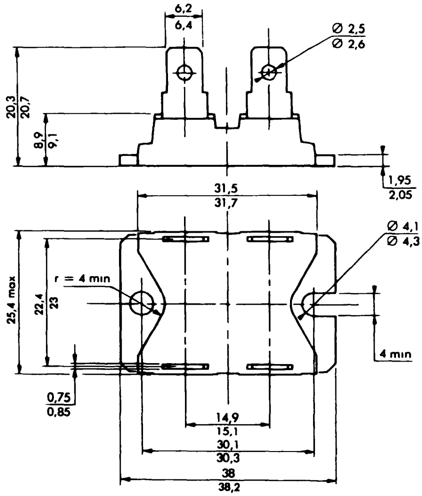
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F\,(AV)}$ di_F/dt = – 30A/µs L_p = 5µH See figure 2		3.3	4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.010\ I_F$ $\qquad$ $P = 1.47 \times I_{F(AV)} + 0.010 I_F{}^2{}_{(RMS)}$

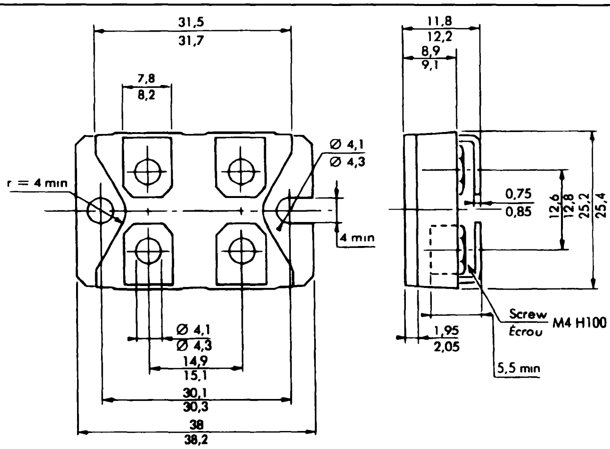
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



Marking : type number + Suffix V

Recommended screw torque value : 13 ± 2kg.cm.
Maximum screw torque value : 15kg.cm.

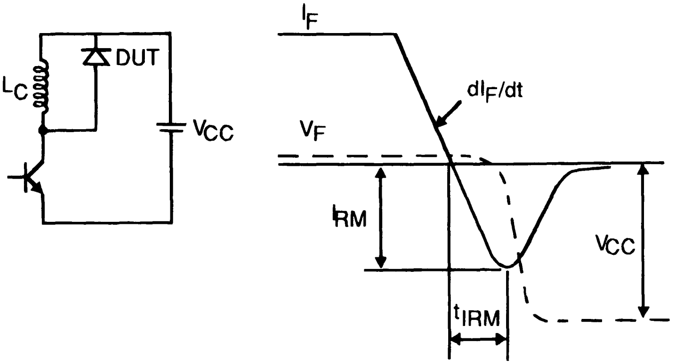


Figure 1 : Turn-off switching characteristics (without series inductance).

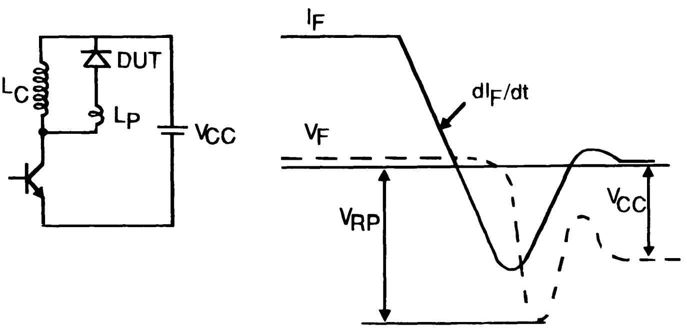


Figure 2 : Turn-off switching characteristics (with series inductance).

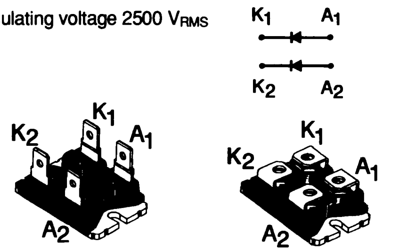
SGS-THOMSON MICROELECTRONICS

BYT 261PI(V)-200→400

FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance4 5pF

Insulating voltage 2500 V_{RMS}



Fast-on version

Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifier suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 10\mu s$	800	A
$I_{F(RMS)}$	RMS Forward Current	per leg	140	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 80°C$ $\delta = 0.5$ per leg	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	600	A
P	Power Dissipation	$T_{case} = 80°C$ per leg	100	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 261PI(V)-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	250	350	450	V

THERMAL RESISTANCES

Symbol	Test Conditions		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	0.7 0.4	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS (per leg)

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			60	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 60A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/µs V_R = 30V			100	ns
		I_F = 0.5A I_R = 1A I_{rr} = 0.25A			50	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 240A/µs	V_{CC} = 200V I_F = 60A $L_p \le$ 0.05µH T_j = 100°C See figure 1			75	ns
	di_F/dt = – 480A/µs			50		
I_{RM}	di_F/dt = – 240A/µs				18	A
	di_F/dt = – 480A/µs			24		

TURN-OFF OVERVOLTAGE COEFFICIENT ((With Series Inductance)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 120V $I_F = I_{F(AV)}$ See note di_F/dt = – 60A/µs L_p = 0.8µH See figure 2		3.3	4	

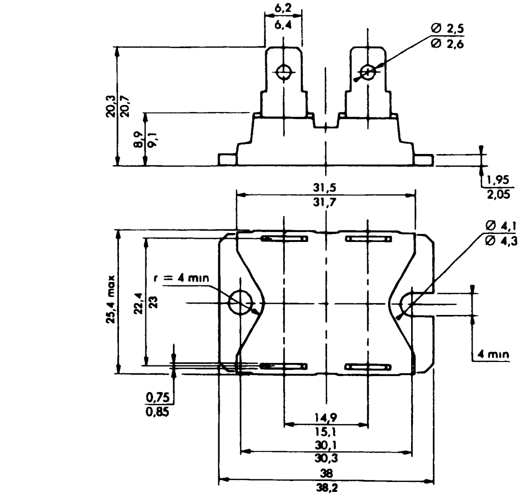
Note : Applicable to BYT 230PI(V)-400 only

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.0045\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.0045 I_F{}^2{}_{(RMS)}$

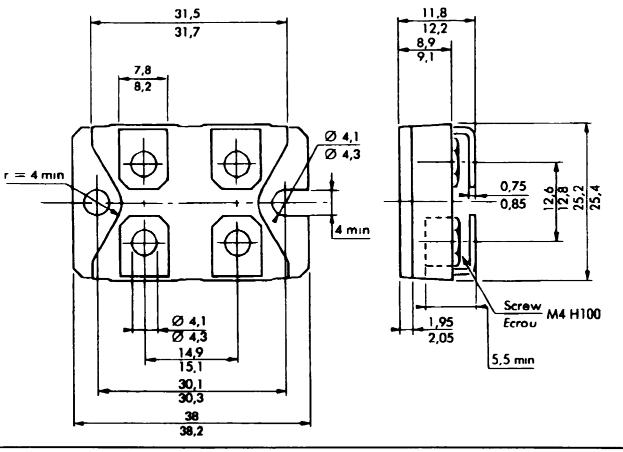
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



Marking . type number + Suffix V

Recommended screw torque value : 13 ± 2kg.cm.
Maximum screw torque value . 15kg.cm.

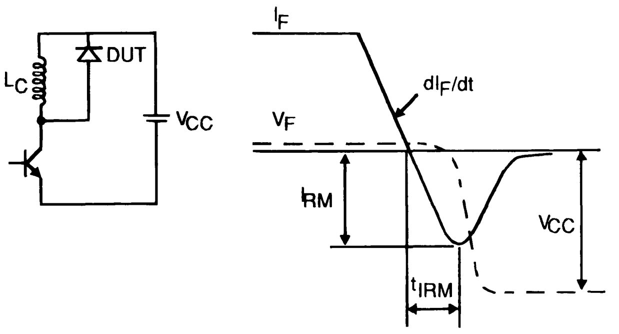


Figure 1 : Turn-off switching characteristics (without series inductance).

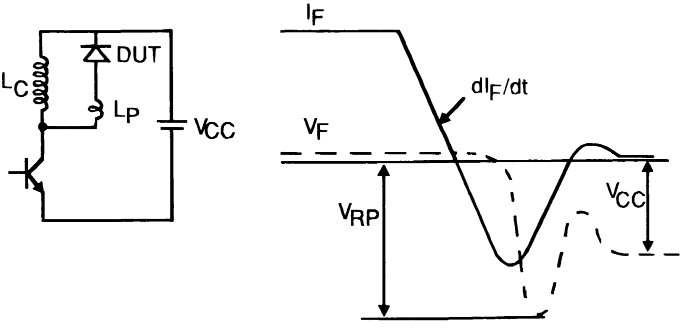


Figure 2 : Turn-off switching characteristics (with series inductance).

SGS-THOMSON
MICROELECTRONICS

BYT 261PI(V)-600/800

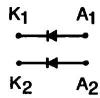
FAST RECOVERY RECTIFIER DIODES

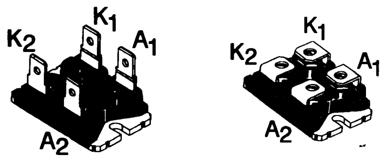
- HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

Insulating voltage 2500 V_{RMS}





Fast-on version

Screw version

ISOTOP
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	750	A
$I_{F(RMS)}$	RMS Forward Current	per leg	140	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 60°C$ $\delta = 0.5$ per leg	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	400	A
P	Power Dissipation	$T_{case} = 60°C$ per leg	130	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

Symbol	Parameter	BYT 261PI (V)-		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	640	850	V

June 1989

THERMAL RESISTANCES

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$R_{th\ (j\text{-}c)}$	Per Leg			0.7	°C/W
	Total			0.4	
$R_{th\ (j1\text{-}j2)}$	Coupling			0.1	
$R_{th\ (c\text{-}f)}$*	Contact-between Case and Heatsink		0.05		

* Torque value of screw mounting on cooling fin : 13kg.cm.
Thermal compound shall be applied between case and cooling fin.

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 60A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A dI_F/dt = – 15A/µs V_R = 30V			135	ns
		I_F = 0.5A I_R=1A I_{rr} = 0.25A			65	

TURN -OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	dI_F/dt = – 240A/µs	V_{CC} = 200V I_F = 60A $L_p \leq$ 0.05µH T_j = 100°C See figure 1			160	ns
	dI_F/dt = – 480A/µs			100		
I_{RM}	dI_F/dt = – 240A/µs				30	A
	dI_F/dt = – 480A/µs			38		

TURN -OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

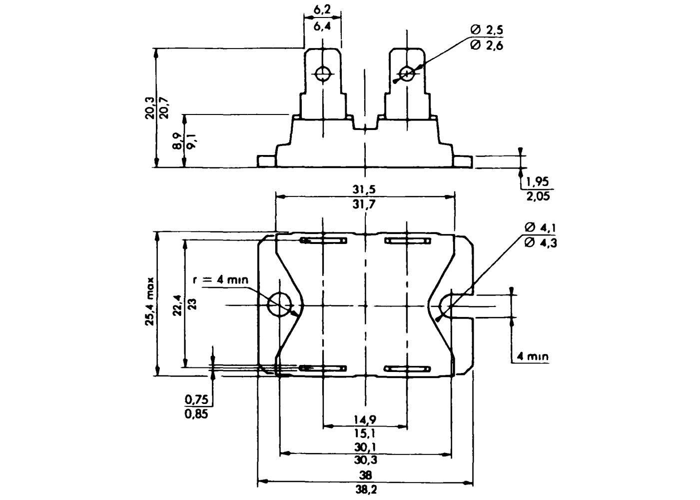
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 150V $I_F = I_{F(AV)}$ dI_F/dt = – 60A/µs L_p = 2µH See figure 2		3.3	4	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.005\ I_F$ $\qquad P = 1.47 \times I_{F(AV)} + 0.005 I_{F(RMS)}^2$

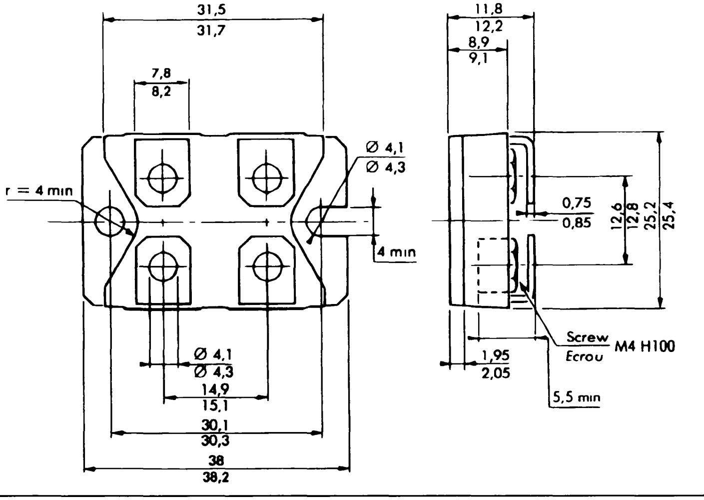
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



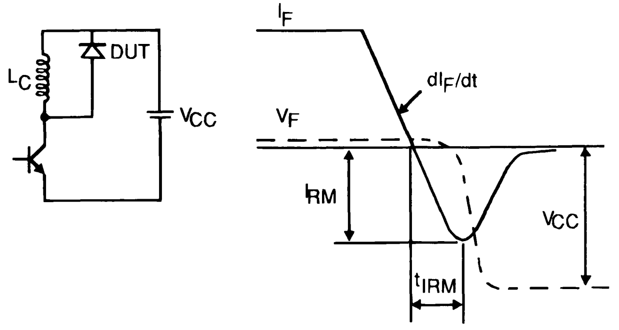


Figure 1 : Turn-off switching characteristics (without series inductance)

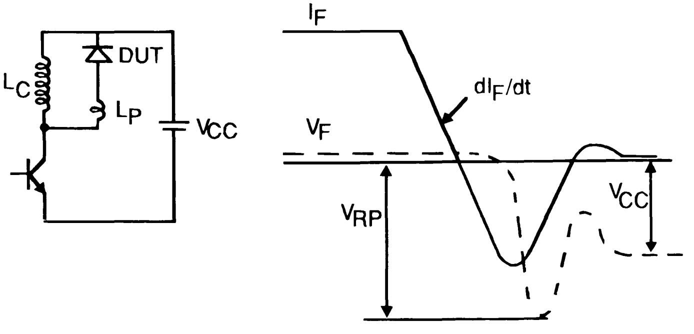


Figure 2 : Turn-off switching characteristics (without series inductance)

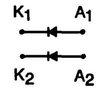
SGS-THOMSON MICROELECTRONICS

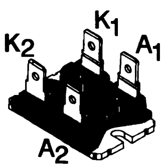
BYT 261 PI(V)-1000

FAST RECOVERY RECTIFIER DIODE

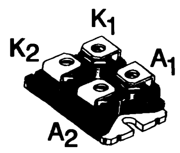
- VERY HIGH REVERSE VOLTAGE CAPABILITY
- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- INSULATED : Capacitance 45pF

Insulating voltage : 2500 V_{RMS}





Fast-on version



Screw version

ISOTOP
(Plastic)

DESCRIPTION

Double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1000	V
V_{RSM}	Non Repetitive Peak Reverse Voltage		1000	V
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 10\mu s$	750	A
$I_{F(RMS)}$	RMS Forward Current	per leg	140	A
$I_{F(AV)}$	Average Forward Current	$T_{case} = 60°C$ $\delta = 0.5$ per leg	60	A
I_{FSM}	Surge Non Repetitive Forward Current	$t_p = 10ms$ Sinusoïdal	400	A
P	Power Dissipation	$T_{case} = 60°C$ per leg	130	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to + 150	°C

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th\ (j-c)}$	Junction-case	per leg total	0.7 0.4	°C/W
$R_{th\ (c)}$	Coupling		0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	μA
	T_j = 100°C				6	mA
V_F	T_j = 25°C	I_F = 60A			1.9	V
	T_j = 100°C				1.8	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A di_F/dt = – 15A/μs V_R = 30V			170	ns
		I_F = 0.5A I_R = 1A I_{rr}=0.25A			70	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	di_F/dt = – 240A/μs	V_{CC} = 200V I_F = 60A $L_p \leq$ 0.05μH T_j = 100°C See figure 1			200	ns
	di_F/dt = – 480A/μs			120		
I_{RM}	di_F/dt = – 240A/μs				40	A
	di_F/dt = – 480A/μs			44		

TURN-OFF OVERVOLTAGE COEFFICIENT (With Series Inductance)

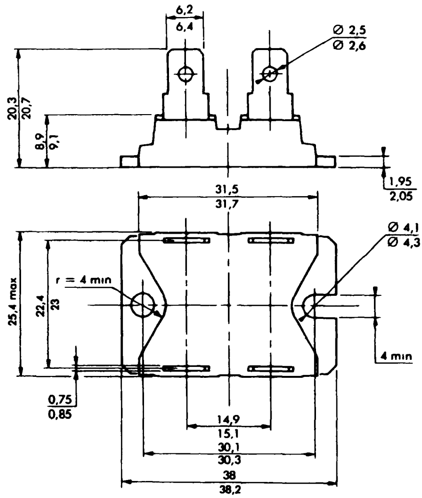
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T_j = 100°C V_{CC} = 200V $I_F = I_{F(AV)}$ di_F/dt = – 60A/μs L_p = 2.5μH See figure 2		3.3	4.5	

To evaluate the conduction losses use the following equations :

$V_F = 1.47 + 0.005\ I_F$ $P = 1.47 \times I_{F(AV)} + 0.005\ I_F{}^2{}_{(RMS)}$

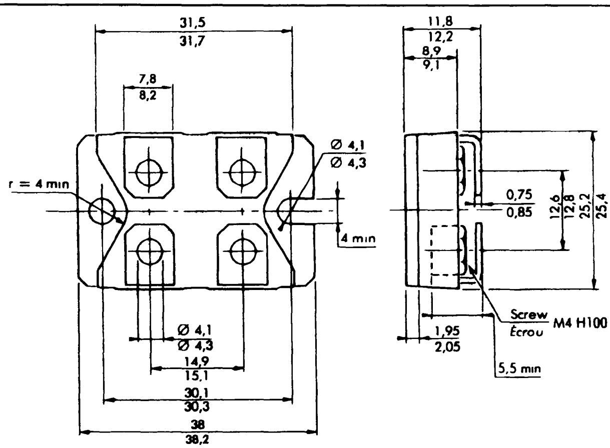
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking type number

ISOTOP Plastic : SCREW VERSION



Marking : type number + Suffix V

Recommended screw torque value : 13 ± 2kg.cm.
Maximum screw torque value : 15kg.cm.

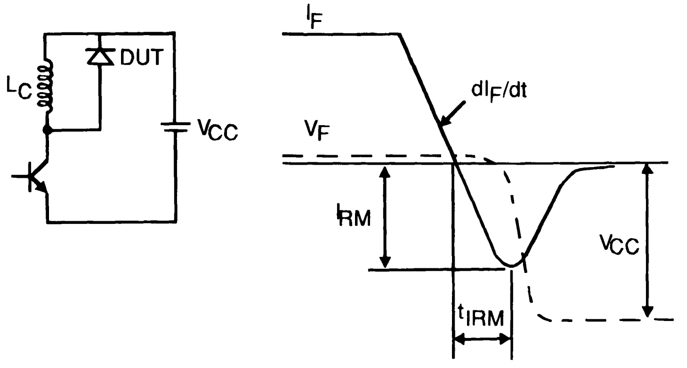


Figure 1 : Turn-off switching characteristics (without series inductance).

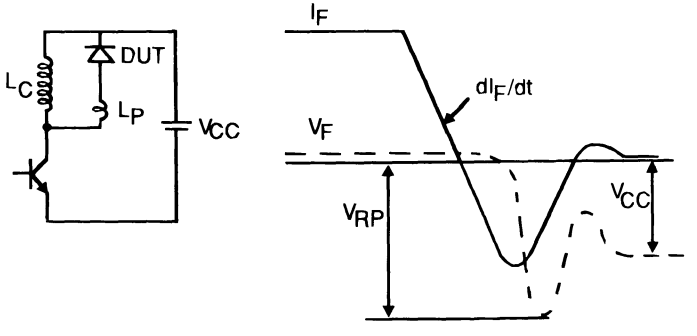
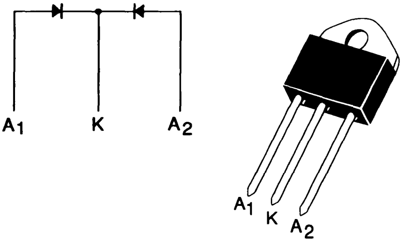


Figure 2 : Turn-off switching characteristics (with series inductance).

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- REDUCED SIZE

Cathode connected to case



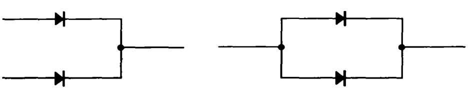
TOP 3
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers center tap suited for switching mode power supply.

SUITABLE APPLICATIONS

The BYV 52 can be used :



2 X 30A   50A

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_P \leq 20\mu s$	500	A
I_F (RMS)	RMS Forward Current		50 per leg 70 total	A
I_F (AV)	Average Forward Current	$T_C = 110°C$ $\delta = 0.5$	30 per leg 50 total	A
I_{FSM}	Surge non Repetitive Forward Current	$t_P = 10ms$ sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 110°C$	30 per leg 46 total	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYV 52-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.2 per leg 0.75 total	°C/W
$R_{th\ (c)}$	Coupling	0.3	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 30A			1	V
	T_j = 100°C				0.9	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 50A/µs V_R = 30V see figure 11			50	ns
Q_{rr}	T_j = 25°C I_F = 2A di_F/dt = – 20A/µs $V_R \leq$ 30V			20	nC
t_{fr}	T_j = 25°C I_F = 1A t_r = 5ns Measured at 1.1 x V_F		10		ns
V_{FP}	T_j = 25°C I_F = 1A t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

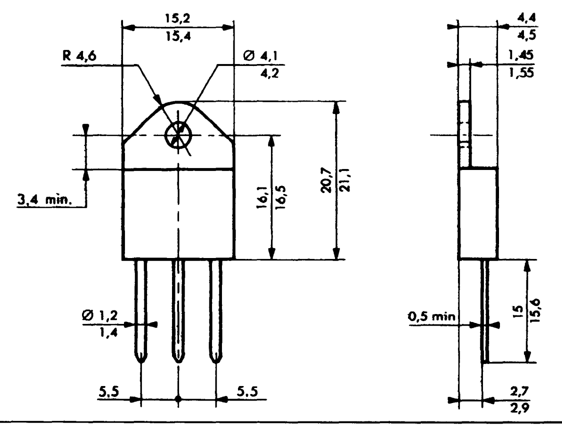
$V_F = 0.7 + 0.006\ I_F$

1 leg : $P = 0.7 \times I_{F\,(AV)} + 0.006\ I_F^2{}_{(RMS)}$

Total : $P = 0.7 \times I_{F\,(AV)} + 0.003\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

TOP 3 Plastic



Cooling method . by conduction (method C)
Marking . type number
Weight . 4 6g
Recommended torque value · 80cm. N
Maximum torque value : 100cm. N

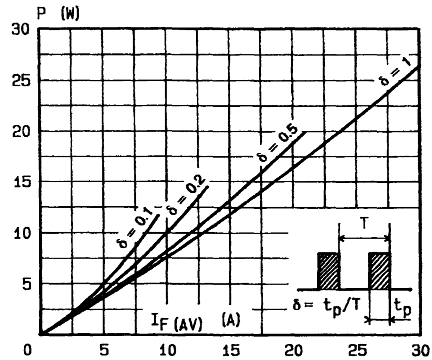


FIGURE 1 : Power losses versus average current.

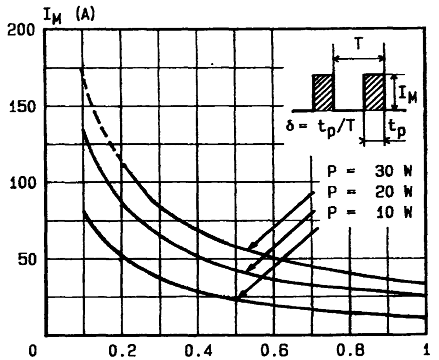


FIGURE 2 : Peak current versus form factor.

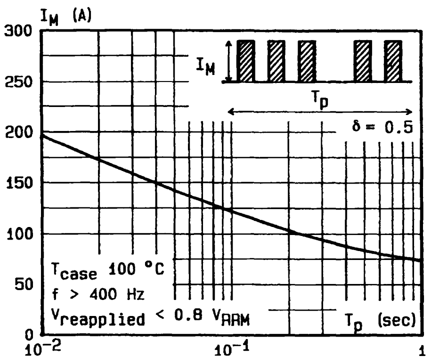


FIGURE 3 : Non repetitive peak surge current versus duration

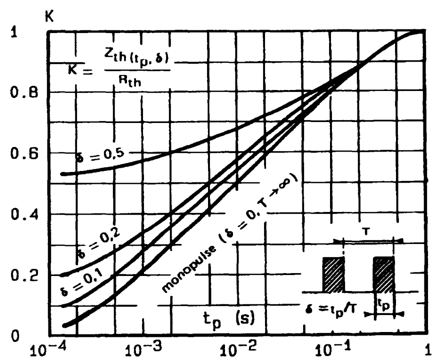


FIGURE 4 : Thermal impedance versus pulse width.

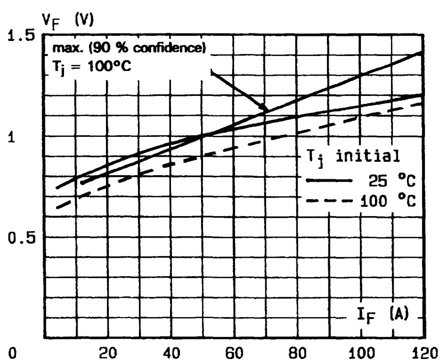


FIGURE 5 : Voltage drop versus forward current.

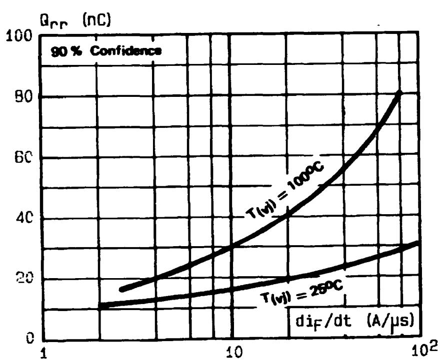


FIGURE 6 : Recovery charge versus di_F/dt.

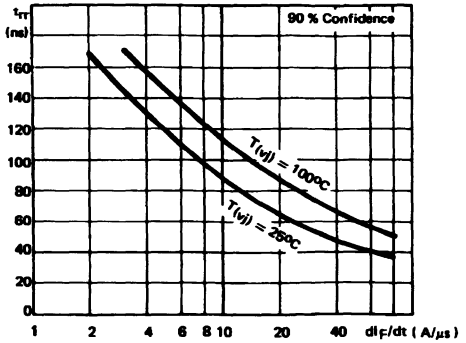


FIGURE 7 : Recovery time versus dI_F/dt.

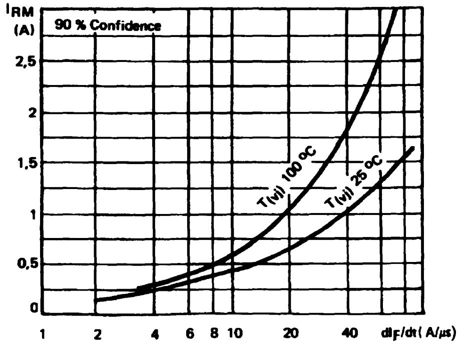


FIGURE 8 : Peak reverse current versus dI_F/dt.

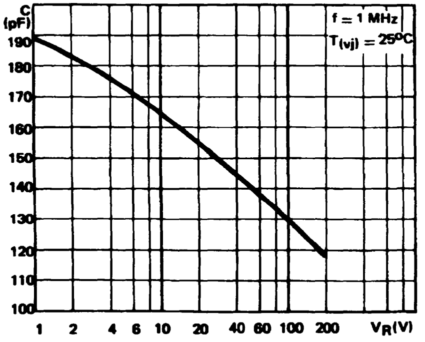


FIGURE 9 : Capacitance versus reverse voltage applied.

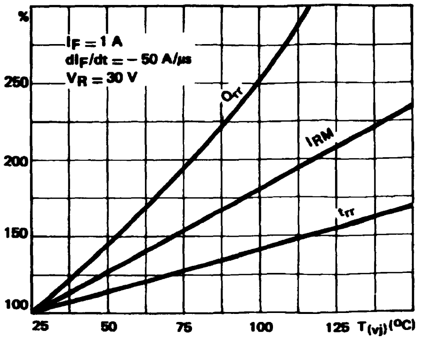


FIGURE 10 : Dynamic parameters versus junction temperature.

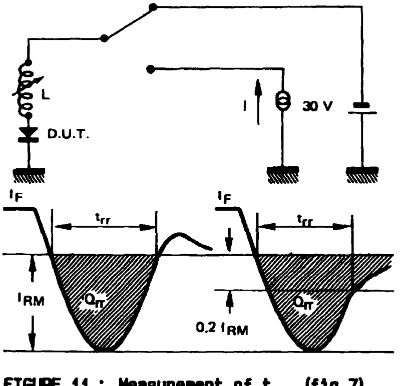


FIGURE 11 : Measurement of t_{rr} (fig.7) and I_{RM} (fig.8).

SGS-THOMSON MICROELECTRONICS

BYV 52PI-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

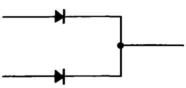
- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- REDUCED SIZE

DESCRIPTION

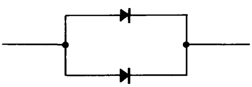
Low voltage drop double rectifiers center tap suited for switching mode power supply.

SUITABLE APPLICATIONS

The BYV 52PI can be used :

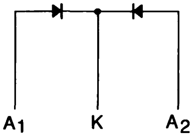


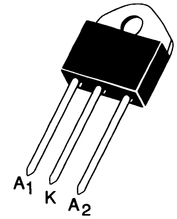
2 X 30A



50A

Insulating voltage 2500 V_{RMS}





TOP 3
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F\,(RMS)}$	RMS Forward Current		50 per leg 70 total	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 90°C$ $\delta = 0.5$	30 per leg 50 total	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 95°C$	30 per leg 45 total	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 52PI-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	1.8 per leg 1.2 total	°C/W
$R_{th\,(c)}$	Coupling	0.6	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 30A			1	V
	T_j = 100°C				0.9	

RECOVERY CHARACTERISTICS

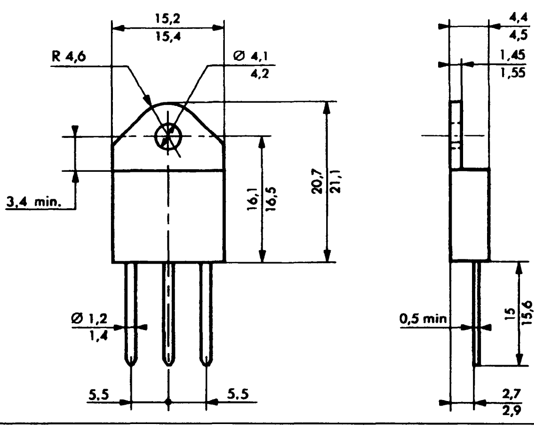
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 11	di_F/dt = – 50A/µs			50	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			20	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.7 + 0.006\ I_F$
1 leg : $P = 0.7 \times I_{F\,(AV)} + 0.006\ I_{F\,(RMS)}^2$
Total : $P = 0.7 \times I_{F\,(AV)} + 0.003\ I_{F\,(RMS)}^2$

PACKAGE MECHANICAL DATA

TOP 3 Plastic



Cooling method · by conduction (method C)
Marking : type number
Weight : 4.6 g
Recommended torque value : 80cm. N
Maximum torque value : 100cm. N

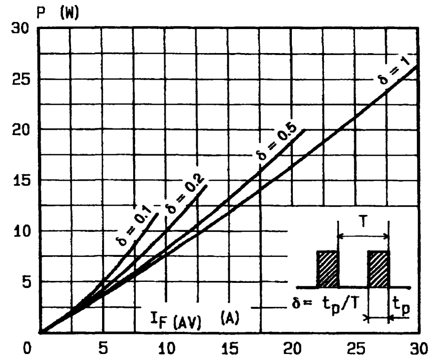


FIGURE 1 : Power losses versus average current.

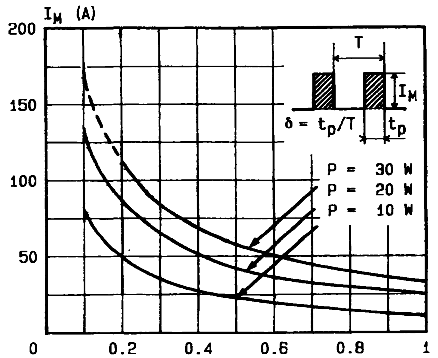


FIGURE 2 : Peak current versus form factor.

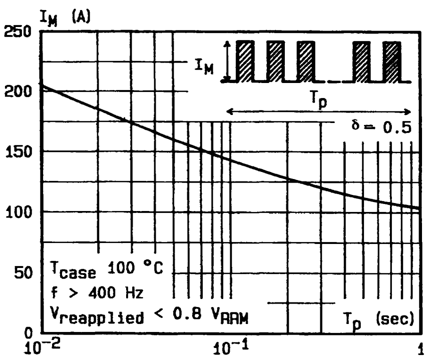


FIGURE 3 : Non repetitive peak surge current versus duration

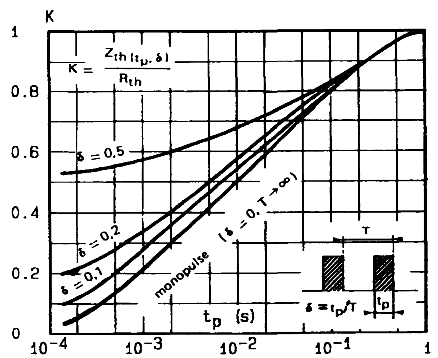


FIGURE 4 : Thermal impedance versus pulse width.

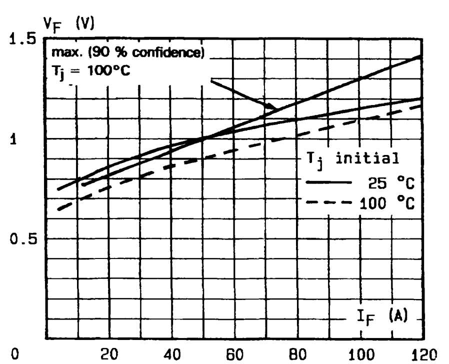


FIGURE 5 : Voltage drop versus forward current.

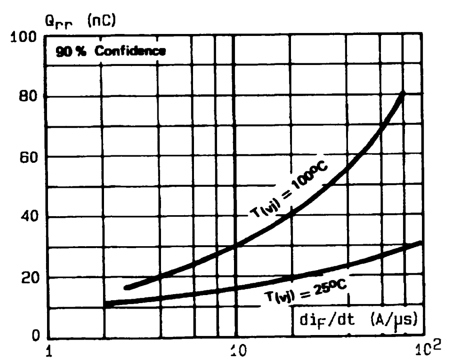


FIGURE 6 : Recovery charge versus di_F/dt.

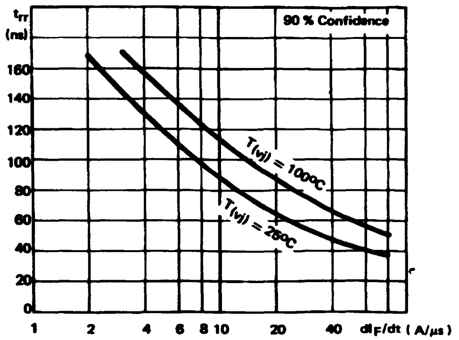


FIGURE 7 : Recovery time versus dI_F/dt.

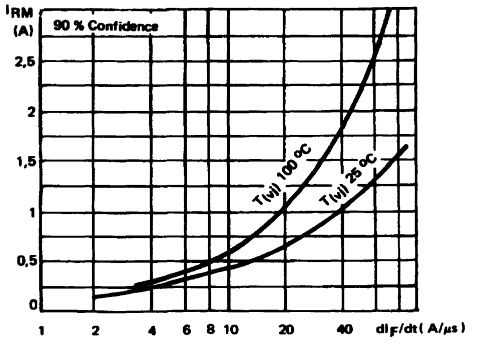


FIGURE 8 : Peak reverse current versus dI_F/dt.

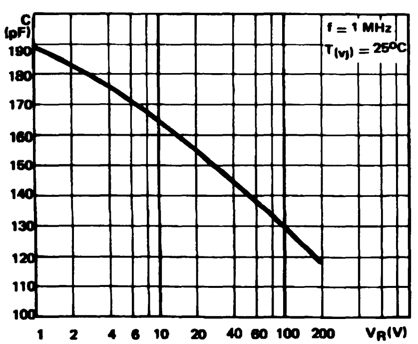


FIGURE 9 : Capacitance versus reverse voltage applied.

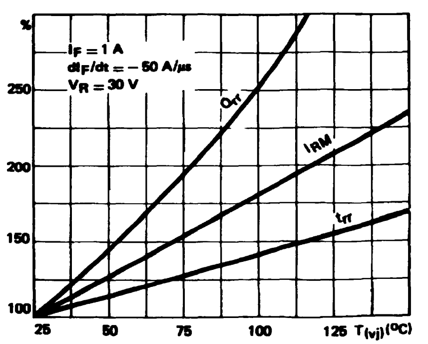


FIGURE 10 : Dynamic parameters versus junction temperature.

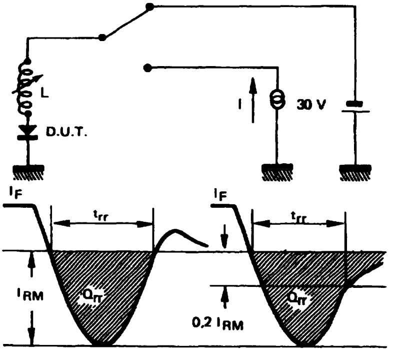


FIGURE 11 : Measurement of t_{rr} (fig.7) and I_{RM} (fig.8).

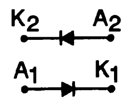
SGS-THOMSON
MICROELECTRONICS

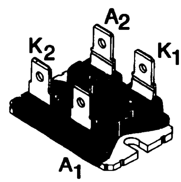
BYV 54(V)-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

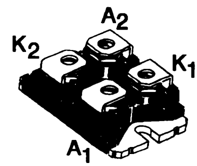
- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- REDUCED SIZE
- INSULATED : capacitance 45pF

Insulating voltage 2500 V_{RMS}





Fast-on version



Screw version

ISOTOP
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	1000	A
$I_{F(RMS)}$	RMS Forward Current		100 per leg	A
$I_{F(AV)}$	Average Forward Current	$T_C = 90°C$ $\delta = 0.5$	50 per leg	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ sinusoidal	1000	A
P_{tot}	Power Dissipation	$T_C = 90°C$	50 per leg	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYV 54 (V)–				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.2 per leg 0.85 total	°C/W
$R_{th\ (c)}$	Coupling	0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS (per leg)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 160A			1.25	V
	T_j = 100°C	I_F = 50A			0.85	

RECOVERY CHARACTERISTICS (per leg)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 11	di_F/dt = – 50A/µs			60	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			30	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.7 + 0.0027\ I_F$
1 leg : $P = 0.7 \times I_{F\,(AV)} + 0.0027\ I_{F\,(RMS)}^2$
Total : $P = 0.7 \times I_{F\,(AV)} + 0.0013\ I_{F\,(RMS)}^2$

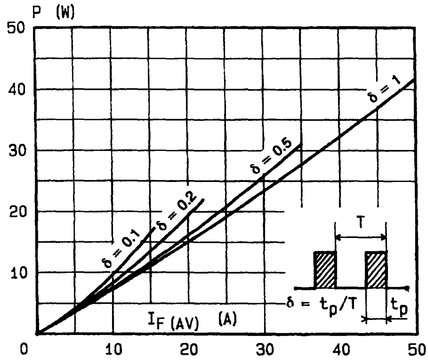


FIGURE 1 : Power losses versus average current.

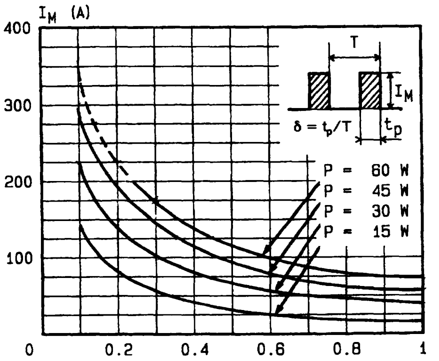


FIGURE 2 : Peak current versus form factor.

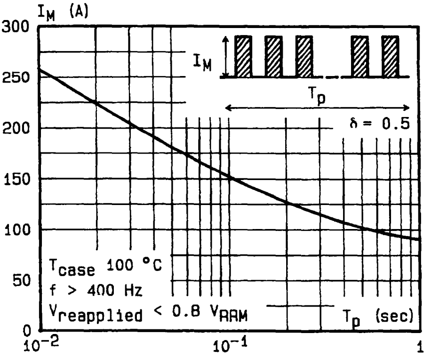


FIGURE 3 : Non repetitive peak surge current versus duration

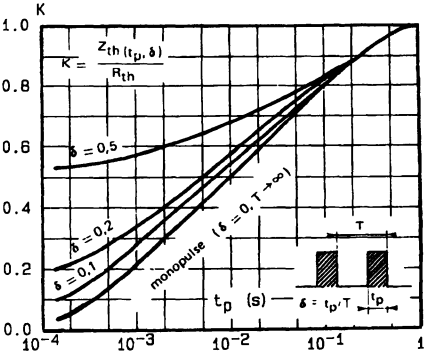


FIGURE 4 : Thermal impedance versus pulse width.

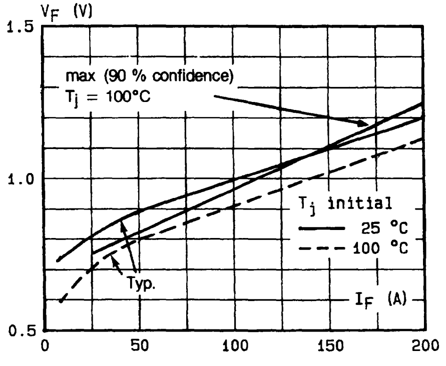


FIGURE 5 : Voltage drop versus forward current.

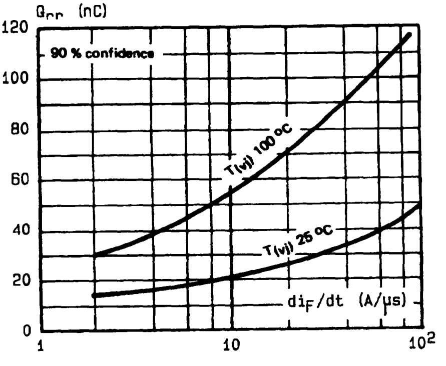


FIGURE 6 : Recovery charge versus di_F/dt.

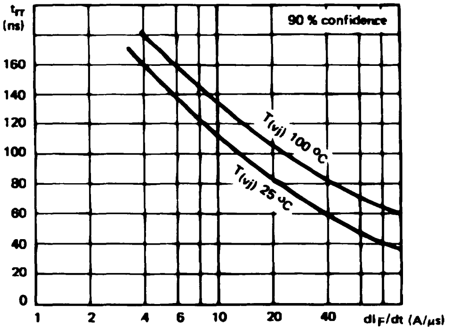


FIGURE 7 : Recovery time versus di_F/dt.

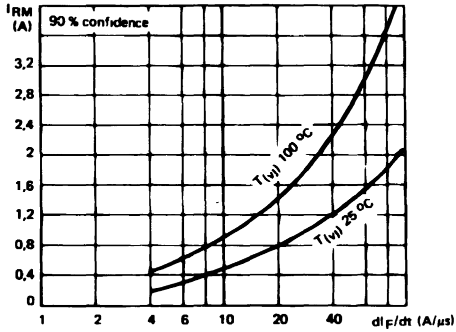


FIGURE 8 : Peak reverse current versus di_F/dt.

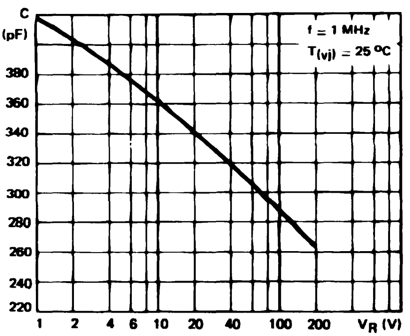


FIGURE 9 : Capacitance versus reverse voltage applied.

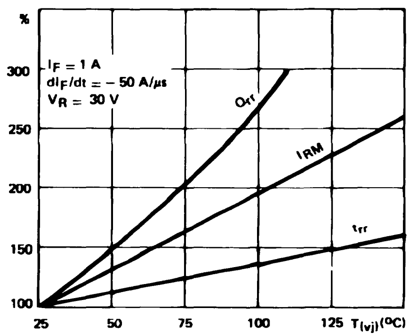


FIGURE 10 : Dynamic parameters versus junction temperature.

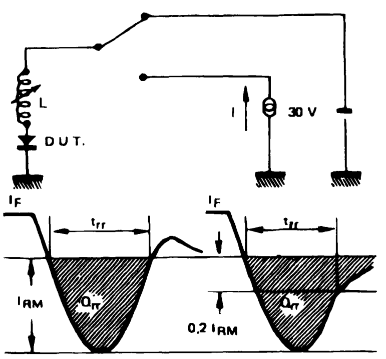
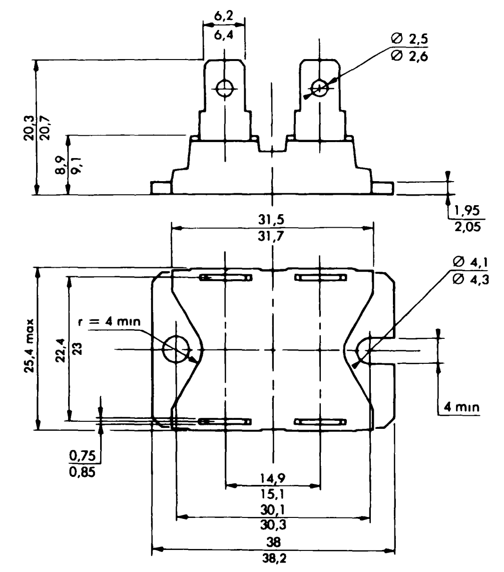


FIGURE 11 : Measurement of t_{rr} (fig.7) and I_{RM} (fig.8).

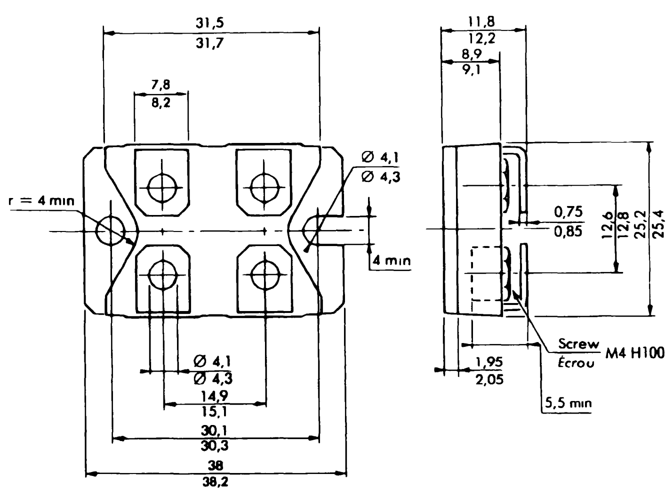
PACKAGE MECHANICAL DATA

ISOTOP : FAST-ON VERSION



Marking : type number

ISOTOP : SCREW VERSION



Marking : type number + suffix V

Recommended screw torque value : 13 ± 2kg. cm.
Maximum screw torque value : 15kg. cm

BYV 255(V)-50 → 200

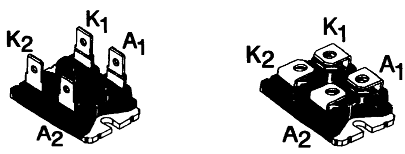
HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- INSULATED : capacitance 55pF
- DOUBLE TWIN CHIPS

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S.

Insulating voltage 2500 V_{RMS}



Fast-on version   Screw version

ISOTOP
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	1500	A
$I_{F(RMS)}$	RMS Forward Current		150 per leg	A
$I_{F(AV)}$	Average Forward Current	$T_C = 110°C$ $\delta = 0.5$	100 per leg	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	1600	A
P_{tot}	Power Dissipation	$T_C = 110°C$	100 per leg	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYV 255(V) -				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.4 per leg 0.25 total	°C/W
$R_{th\ (c)}$	Coupling	0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS (per leg)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			100	µA
	T_j = 100°C				10	mA
V_F	T_j = 25°C	I_F = 320A			1.25	V
	T_j = 100°C	I_F = 100A			0.85	

RECOVERY CHARACTERISTICS (per leg)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 11	dI_F/dt = - 50A/µs			80	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	dI_F/dt = - 20A/µs			65	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

TURN-OFF SWITCHING CHARACTERISTICS (per leg)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
I_{RM}	T_j = 100°C $L_p \leq$ 0.05µH See figure 12	I_F = 100A $V_{CC} \leq 0.6\ V_{RRM}$	dI_F/dt = – 200A/µs			16	A
			dI_F/dt = – 400A/µs		24		

To evaluate the conduction losses use the following equations :

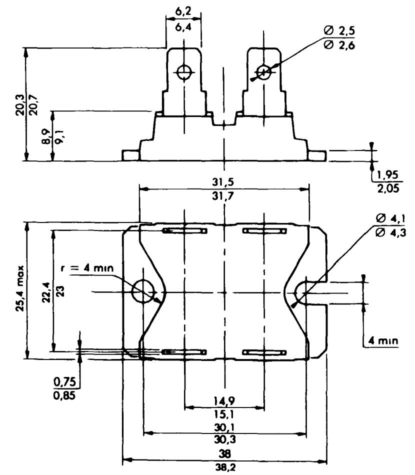
$V_F = 0.7 + 0.00135\ I_F$

1 leg : $P = 0.7 \times I_{F\,(AV)} + 0.00135\ I_F^2{}_{(RMS)}$

Total : $P = 0.7 \times I_{F\,(AV)} + 0.0007\ I_F^2{}_{(RMS)}$

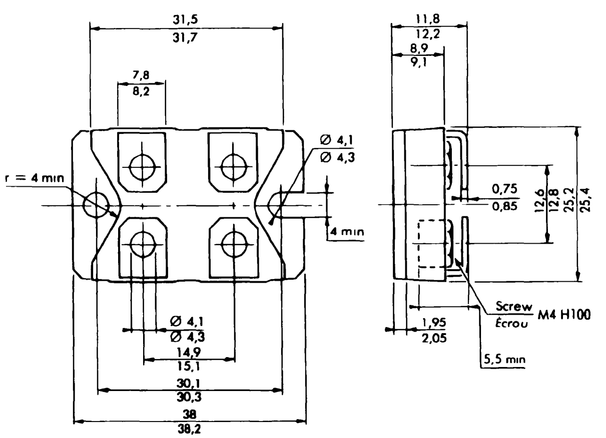
PACKAGE MECHANICAL DATA

ISOTOP Plastic : FAST-ON VERSION



Marking : type number

ISOTOP Plastic : SCREW VERSION



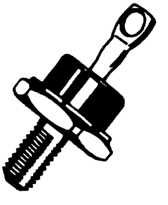
Marking . type number + suffix V

Recommended screw torque value · 13 ± 2Kg cm.
Maximum screw torque value · 15Kg.cm

BYW 08-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} and I_{RM} AT 100°C UNDER USERS CONDITIONS
- EASE OF PARALLELING



DO 5
(Metal)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	1000	A
$I_{F(RMS)}$	RMS Forward Current		100	A
$I_{F(AV)}$	Average Forward Current	$T_C = 85°C$ $\delta = 0.5$	80	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	1500	A
P_{tot}	Power Dissipation	$T_C = 90°C$	80	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 08-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	0.75	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 80A			1.05	V
	T_j = 100°C				0.92	

RECOVERY CHARACTERISTICS

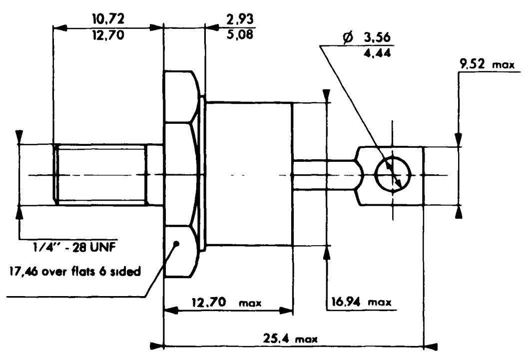
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/µs			60	ns
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0021\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.0021\, I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



Cooling method . by conduction (method C)
Marking . Cathode connected to case : type number
Anode connected to case . type number + suffix R (Consult us for these reverse version datasheets)
Weight . 18.84g
Recommended torque value . 250cm. N
Maximum torque value . 310cm. N

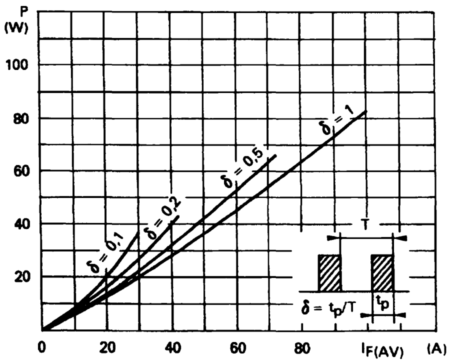


FIGURE 1 : Power losses versus average current

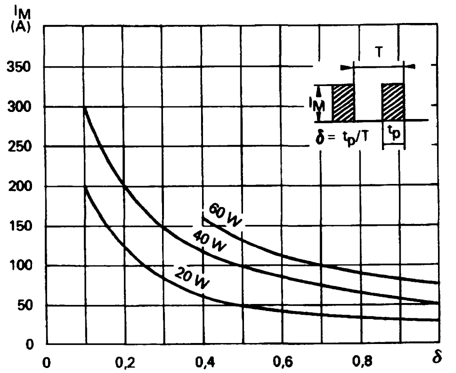


FIGURE 2 : Peak current versus form factor

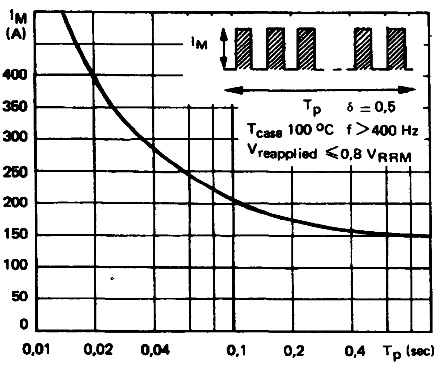


FIGURE 3 : Non repetitive peak surge current versus duration

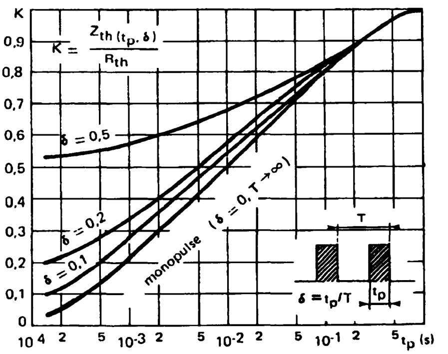


FIGURE 4 : Thermal impedance versus pulse width

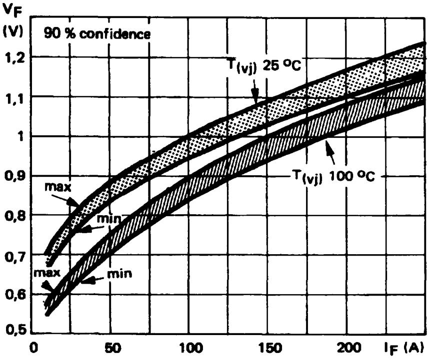


FIGURE 5 : Voltage drop and spread versus forward current

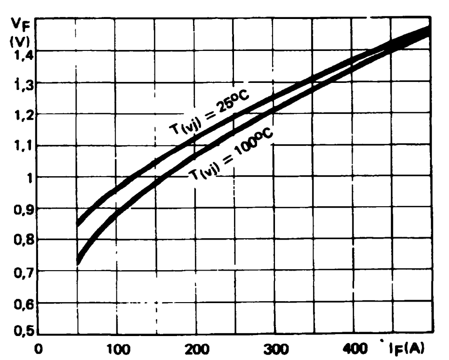


FIGURE 6 : Voltage drop versus forward current

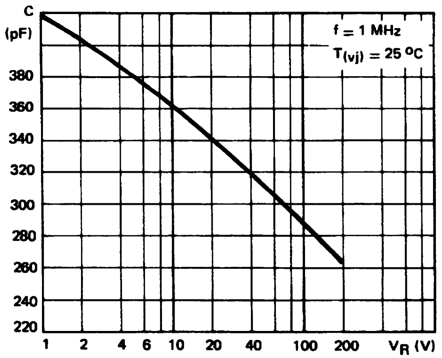


FIGURE 7 : Capacitance versus reverse voltage applied

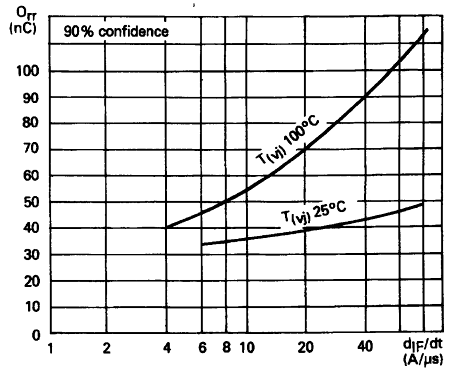


FIGURE 8 : Recovery charge versus dI_F/dt

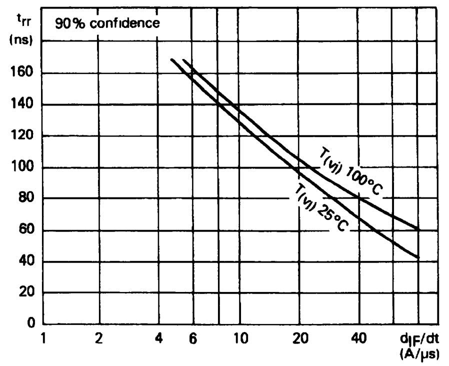


FIGURE 9 : Recovery time versus dI_F/dt

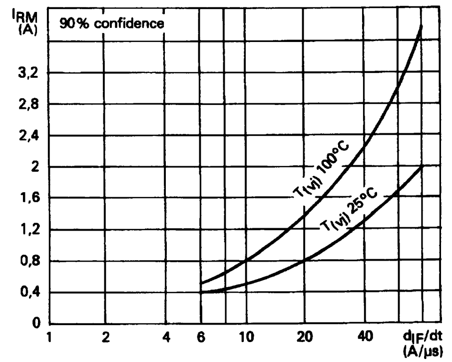


FIGURE 10 : Peak reverse current versus dI_F/dt

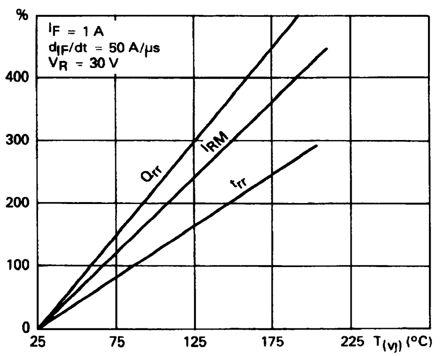


FIGURE 11 : Dynamic parameters versus junction temperature

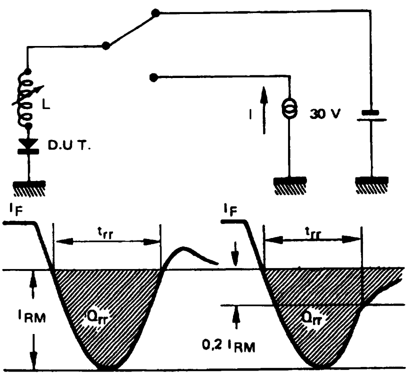


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

SGS-THOMSON MICROELECTRONICS

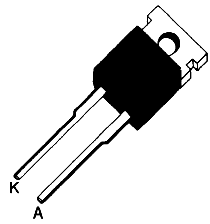
SGS-THOMSON
MICROELECTRONICS

BYW 29-50 A → 200 A

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	80	A
$I_{F\ (RMS)}$	RMS Forward Current		12	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 130°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	80	A
P_{tot}	Power Dissipation	$T_C = 105°C$	18	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 29–				Unit
		50A	100A	150A	200A	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	μA
	T_j = 100°C				0.6	mA
V_F	T_j = 25°C	I_F = 20A			1.3	V
	T_j = 100°C	I_F = 5A			0.85	

RECOVERY CHARACTERISTICS

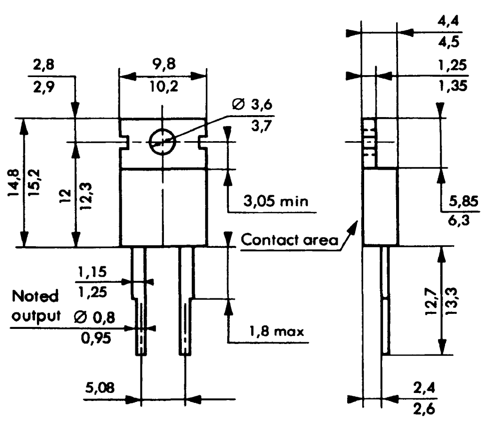
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/μs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/μs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.014\ I_F$ $\qquad P = 0.66 \times I_{F(AV)} + 0.014 I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method · by conduction (method C)
Marking type number
Weight · 2 4g
Recommended torque value 80cm N
Maxımum torque value : 100cm N

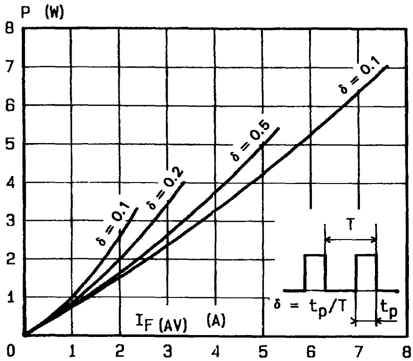


FIGURE 1 : Power losses versus average current.

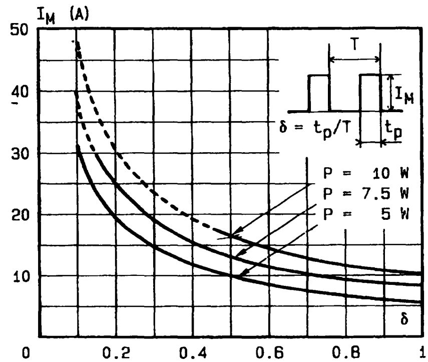


FIGURE 2 : Peak current versus form factor.

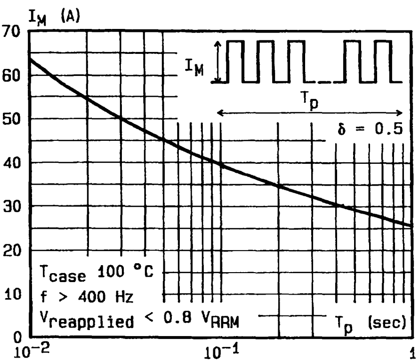


FIGURE 3 : Non repetitive peak surge current versus duration.

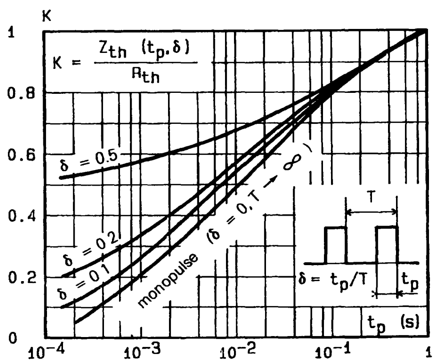


FIGURE 4 : Thermal impedance versus pulse width.

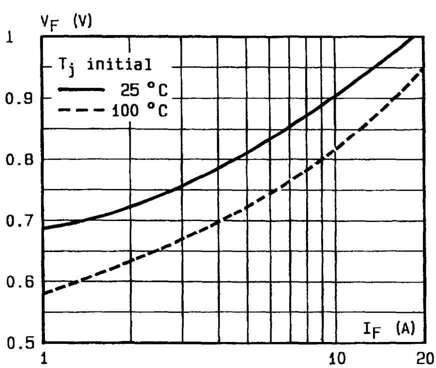


FIGURE 5 : Voltage drop versus forward current.

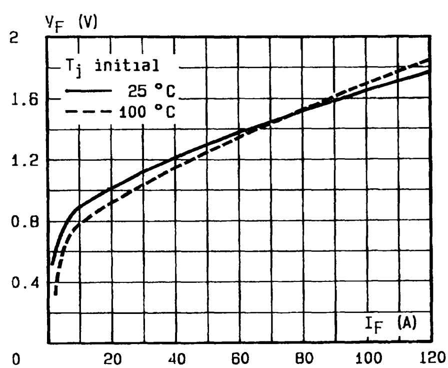


FIGURE 6 : Voltage drop versus forward current.

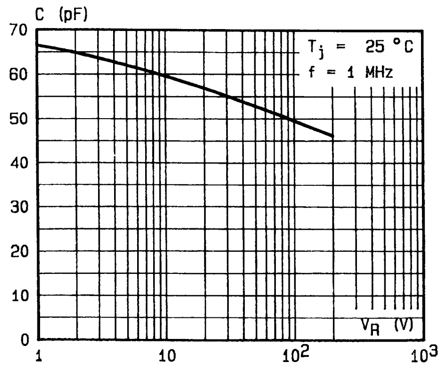


FIGURE 7 : Capacitance versus reverse voltage applied.

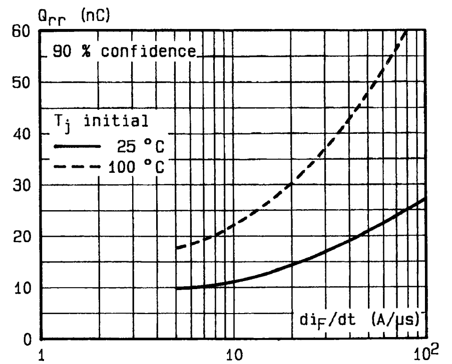


FIGURE 8 : Recovery charge versus di_F/dt.

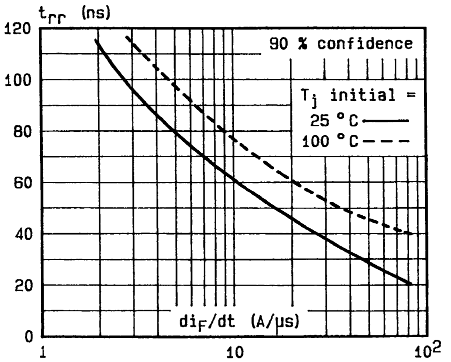


FIGURE 9 : Recovery time versus di_F/dt.

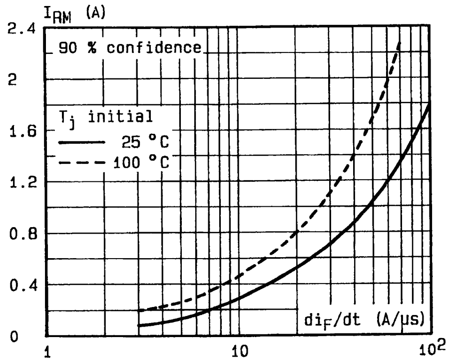


FIGURE 10 : Peak reverse current versus di_F/dt.

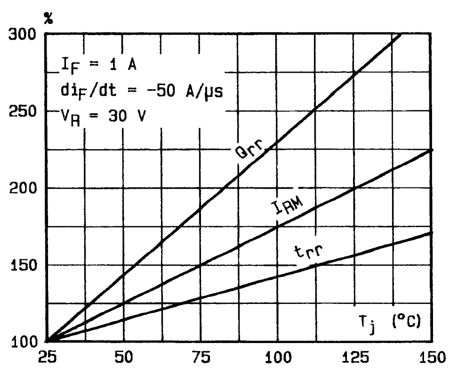


FIGURE 11 : Dynamic parameters versus junction temperature.

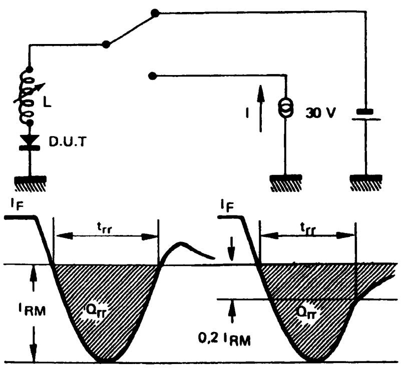


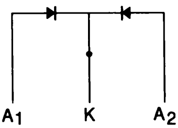
FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM}.

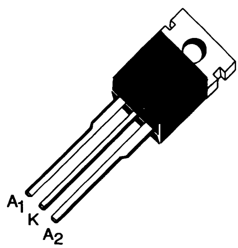
SGS-THOMSON MICROELECTRONICS

BYW 51-50 A → 200 A

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- LOW THERMAL RESISTANCE





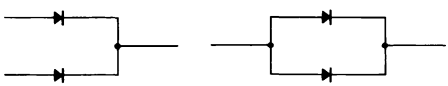
TO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers center tap suited for switching mode power supply.

SUITABLE APPLICATIONS

The BYW 51 can be used :



2 X 10A   20A

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	100	A
$I_{F\,(RMS)}$	RMS Forward Current		20 total	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 125°C$ $\delta = 0.5$	20 total	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P_{tot}	Power Dissipation	$T_C = 125°C$	20 total	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 51–				Unit
		50A	100A	150A	200A	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	2.5 per leg 1.3 total	°C/W
$R_{th\,(c)}$	Coupling	0.1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	μA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 8A			0.97	V
	T_j = 100°C				0.89	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/μs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/μs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

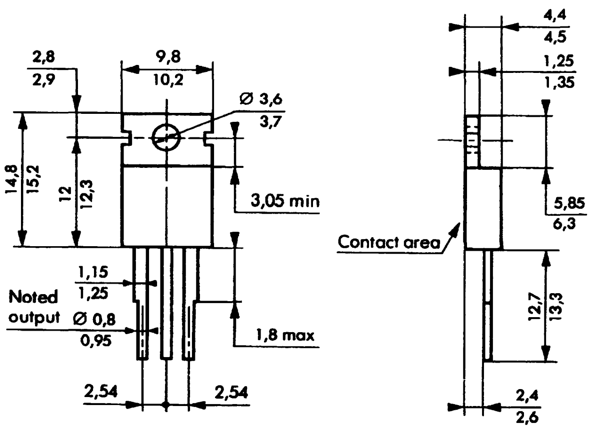
$V_F = 0.66 + 0.014\ I_F$

1 leg : $P = 0.66 \times I_{F\,(AV)} + 0.014\ I_F^2{}_{(RMS)}$

Total : $P = 0.66 \times I_{F\,(AV)} + 0.007\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

TO 220 AB Plastic



Cooling method . by conduction (method C)
Marking type number
Weight · 2.47g

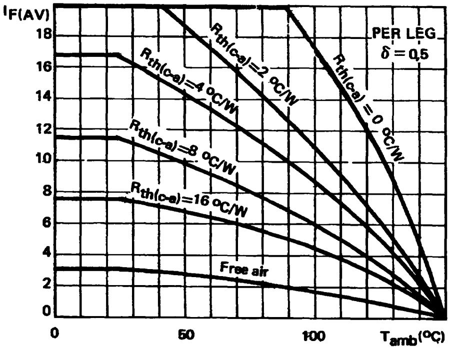


Figure 1 : Average forward current versus air temperature and cooling system (1 leg)

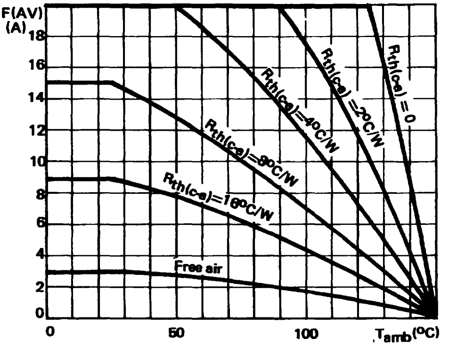


FIGURE 2 : Average forward current versus air temperature and cooling system (2 legs)

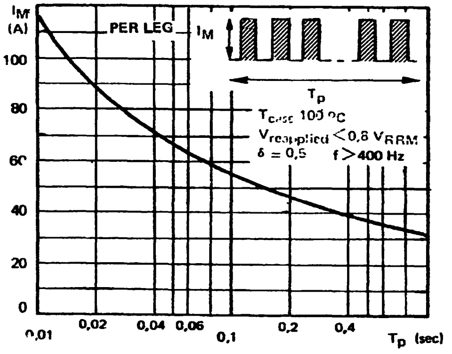


FIGURE 3 : Non repetitive peak surge current versus duration

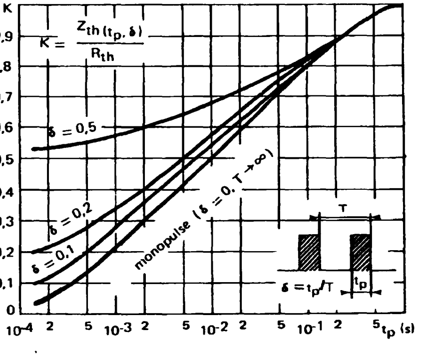


FIGURE 4 : Thermal impedance versus pulse width

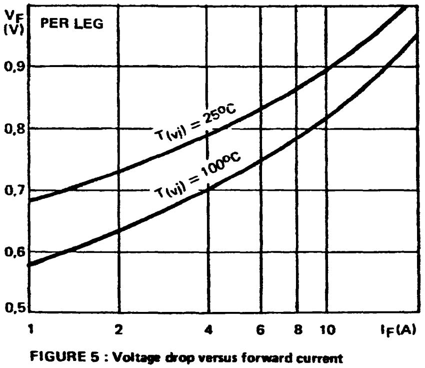


FIGURE 5 : Voltage drop versus forward current

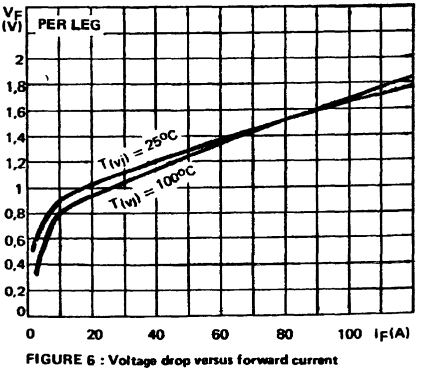


FIGURE 6 : Voltage drop versus forward current

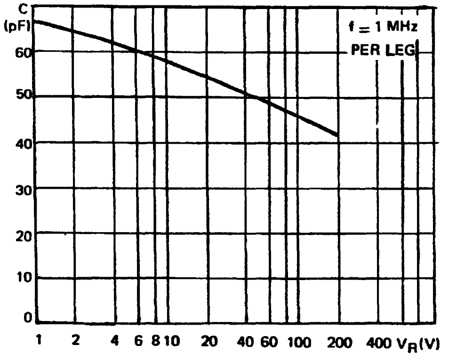


FIGURE 7 : Capacitance versus reverse voltage applied

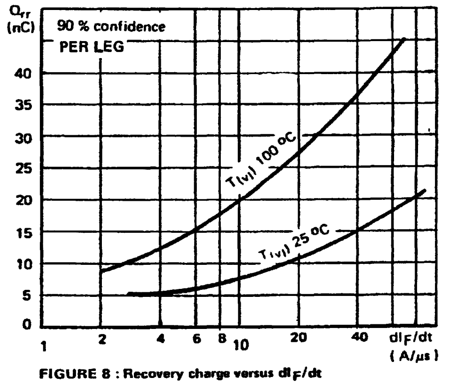


FIGURE 8 : Recovery charge versus dI$_F$/dt

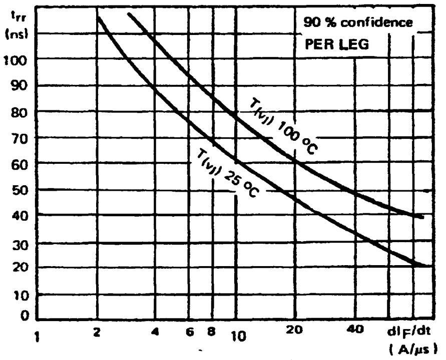


FIGURE 9 : Recovery time versus dI$_F$/dt

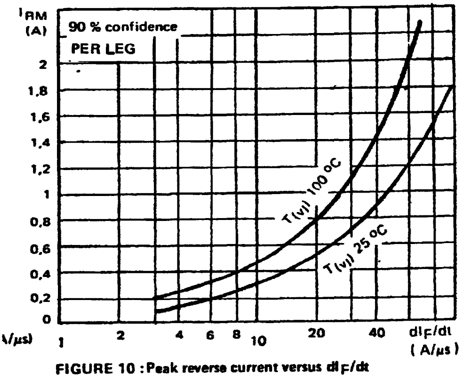


FIGURE 10 : Peak reverse current versus dI$_F$/dt

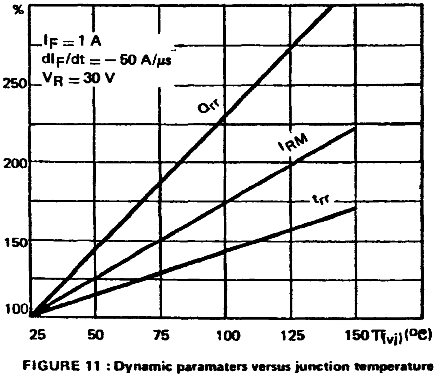


FIGURE 11 : Dynamic paramaters versus junction temperature

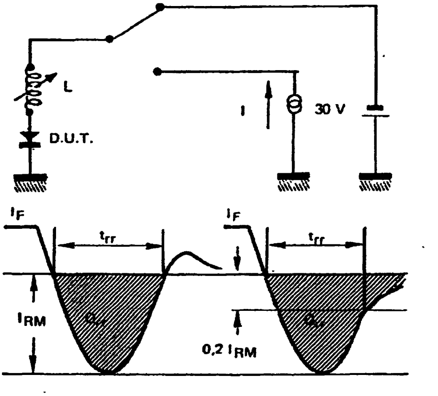


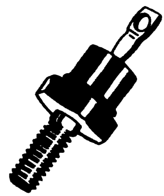
FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM}

SGS-THOMSON MICROELECTRONICS

BYW 77-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DO 4
(Metal)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	500	A
$I_{F\ (RMS)}$	RMS Forward Current		50	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 115°C$ $\delta = 0.5$	25	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 100°C$	33	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 77-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 63A			1.1	V
	T_j = 100°C	I_F = 20A			0.85	

RECOVERY CHARACTERISTICS

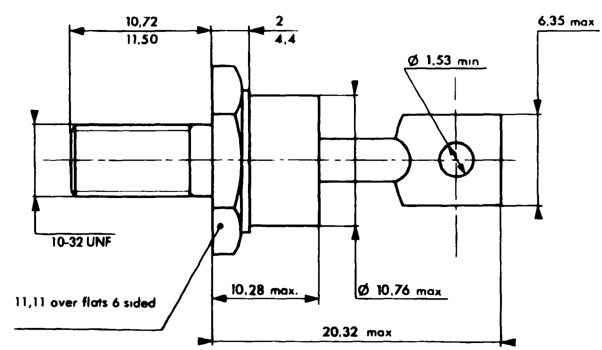
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	dI_F/dt = – 50A/µs			50	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	dI_F/dt = – 20A/µs			20	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0047\ I_F$ $P = 0.66 \times I_{F(AV)} + 0.0047 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 4 Metal



Cooling method · by conduction (method C)
Marking · Cathode connected to case type number
Anode connected to case · type number + suffix R (Consult us for these reverse version datasheets)
Weight · 5 1g
Recommended torque value · 180cm. N
Maximum torque value · 220cm N

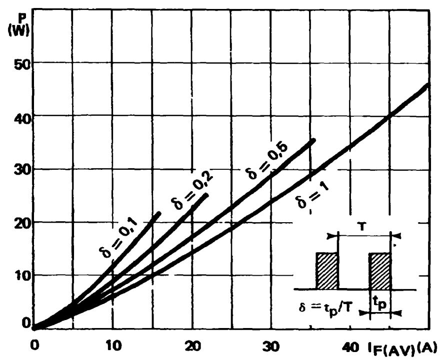


FIGURE 1 : Power losses versus average current

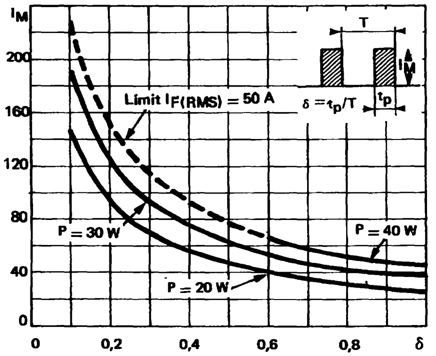


FIGURE 2 : Peak current versus form factor

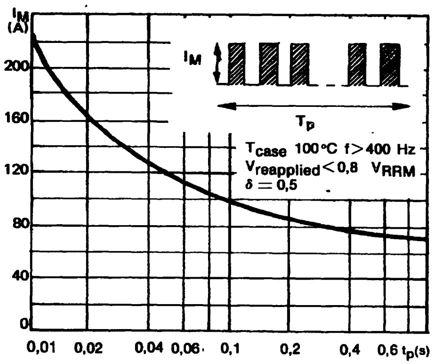


FIGURE 3 : Non repetitive peak surge current versus duration

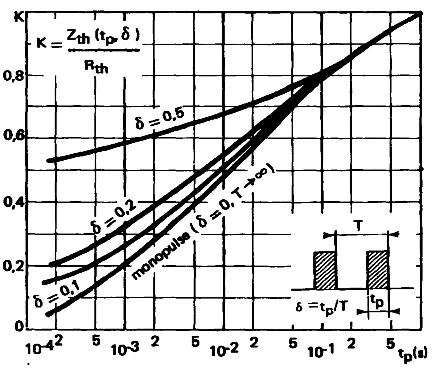


FIGURE 4 : Thermal impedance versus pulse width

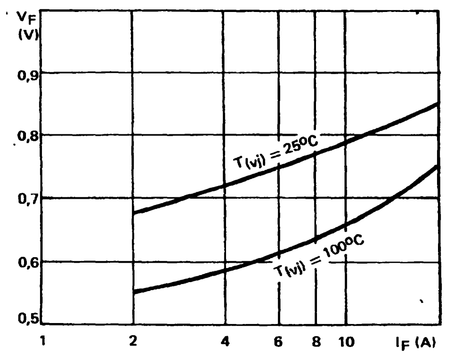


FIGURE 5 : Voltage drop and dispersion versus forward current

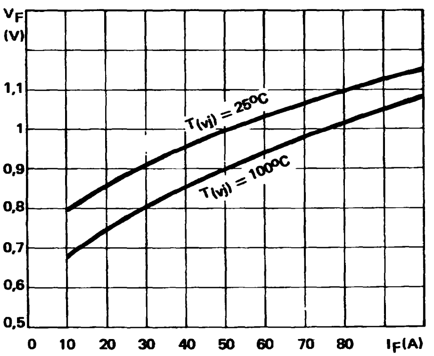


FIGURE 6 : Voltage drop versus forward current

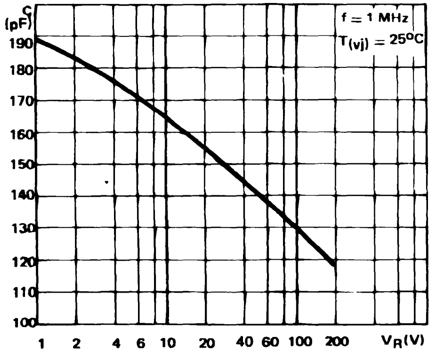


FIGURE 7 : Capacitance versus reverse voltage applied

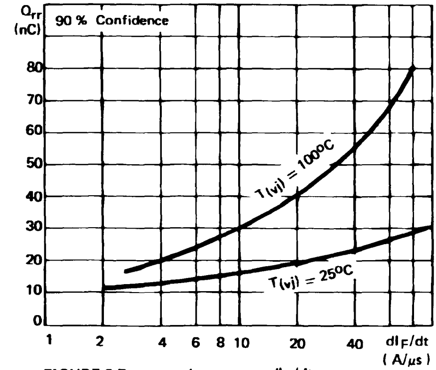


FIGURE 8 Recovery charge versus dIF/dt

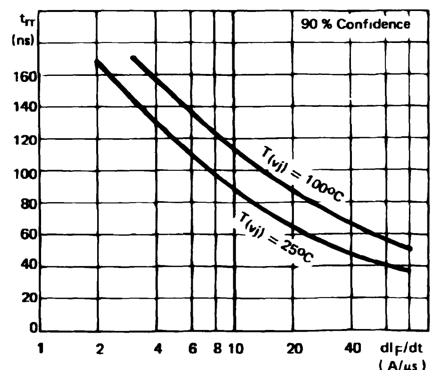


FIGURE 9 : Recovery time versus dIF/dt

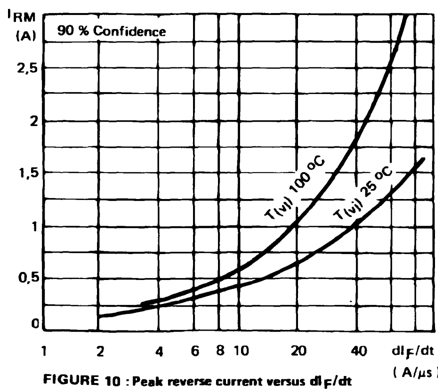


FIGURE 10 : Peak reverse current versus dIF/dt

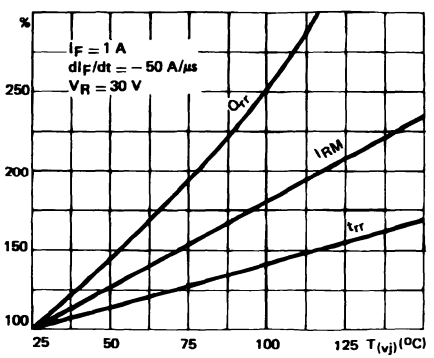


FIGURE 11 : Dynamic parameters versus junction temperature

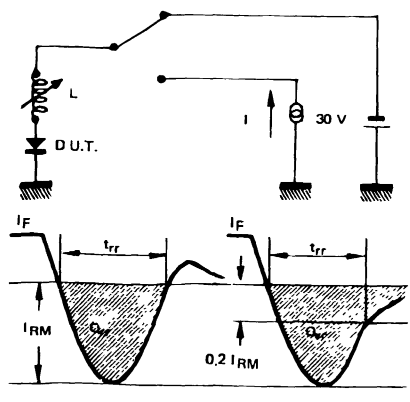
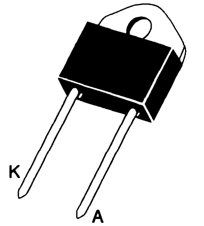


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

Cathode connected to case



DOP 3
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F (RMS)}$	RMS Forward Current		50	A
$I_{F (AV)}$	Average Forward Current	$T_C = 125°C$ $\delta = 0.5$	25	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 125°C$	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 77P-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 63A			1.15	V
	T_j = 100°C	I_F = 20A			0.85	

RECOVERY CHARACTERISTICS

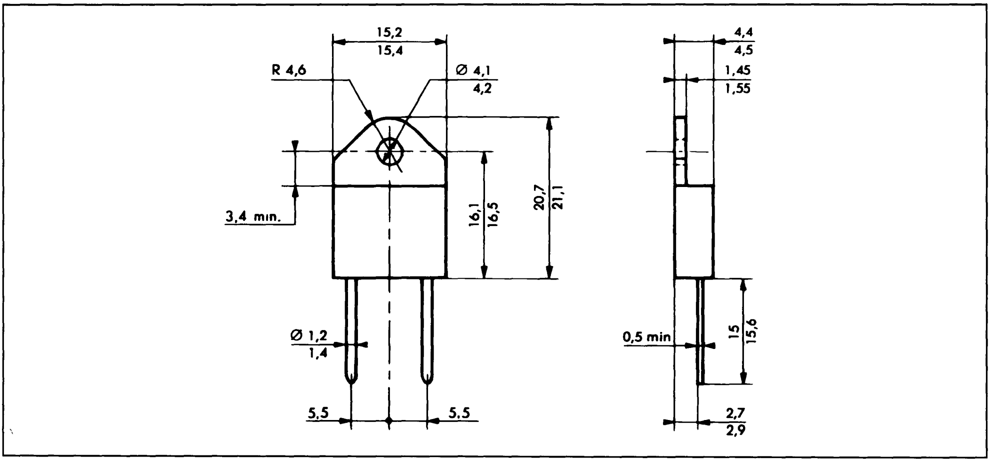
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 50A/µs V_R = 30V see figure 12			50	ns
Q_{rr}	T_j = 25°C I_F = 2A di_F/dt = – 20A/µs $V_R \leq$ 30V			20	nC
t_{fr}	T_j = 25°C I_F = 1A t_r = 5ns Measured at 1.1 x V_F		10		ns
V_{FP}	T_j = 25°C I_F = 1A t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0047\ I_F$ $\qquad P = 0.66 \times I_{F(AV)} + 0.0047 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DOP 3 Plastic



Cooling method : by conduction (method C)
Marking : type number
Weight 4 3g
Recommended torque value · 80cm N
Maximum torque value 100cm N

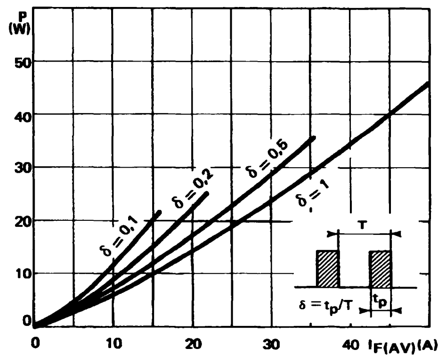


FIGURE 1 : Power losses versus average current

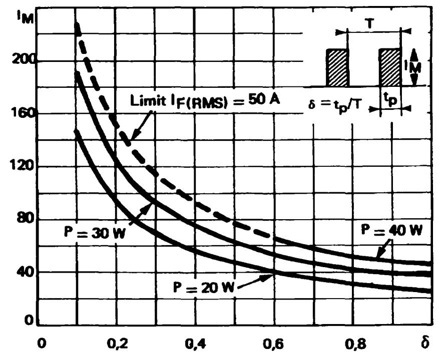


FIGURE 2 : Peak current versus form factor

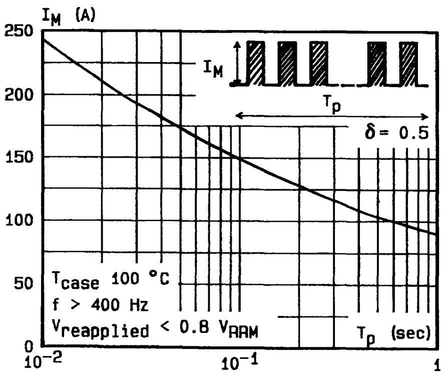


FIGURE 3 : Non repetitive peak surge current versus duration

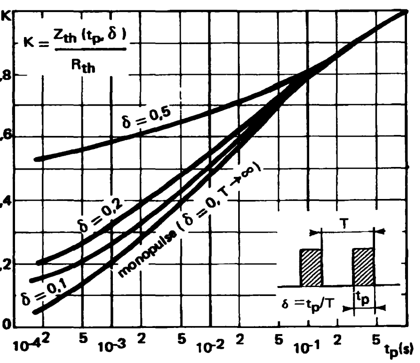


FIGURE 4 : Thermal impedance versus pulse width

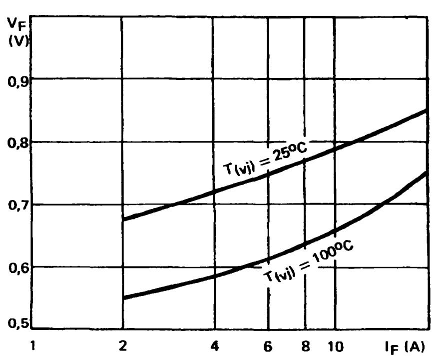


FIGURE 5 : Voltage drop and dispersion versus forward current

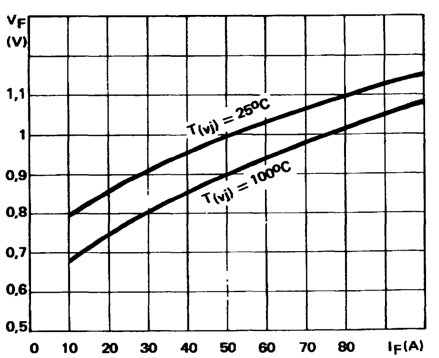


FIGURE 6 : Voltage drop versus forward current

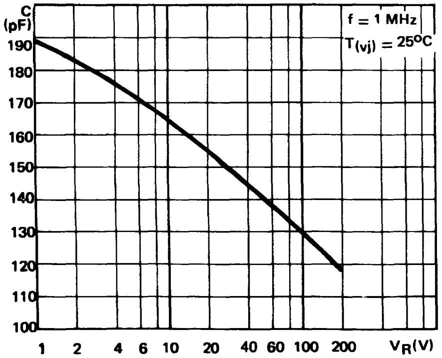


FIGURE 7 : Capacitance versus reverse voltage applied

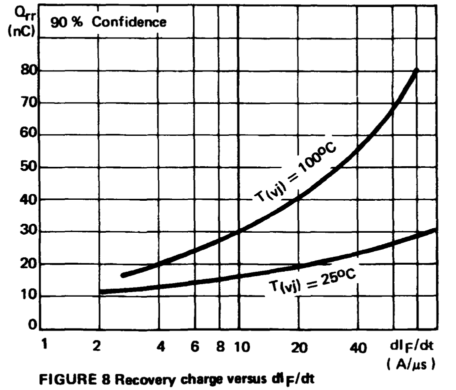


FIGURE 8 Recovery charge versus dI_F/dt

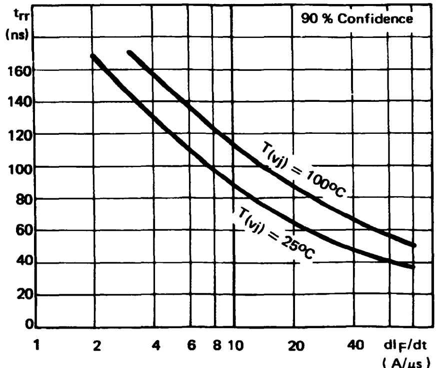


FIGURE 9 : Recovery time versus dI_F/dt

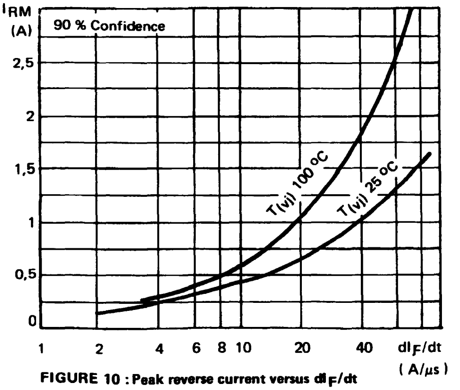


FIGURE 10 : Peak reverse current versus dI_F/dt

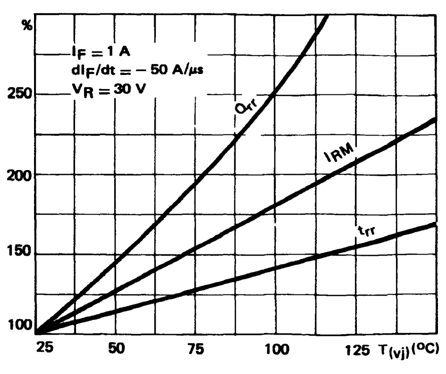


FIGURE 11 : Dynamic parameters versus junction temperature

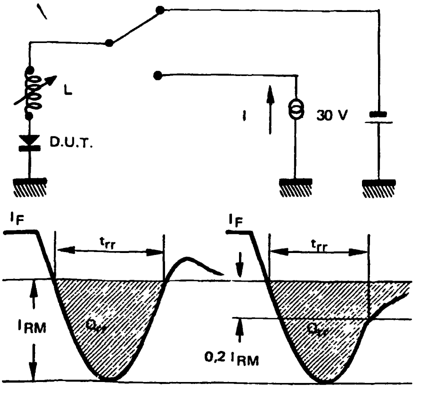


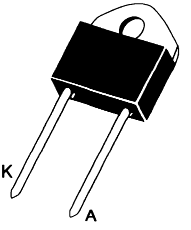
FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

BYW 77PI-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- INSULATED : Capacitance 12pF

Insulating voltage 2500 V_{RMS}



DOP 3
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20$ µs	500	A
$I_{F\,(RMS)}$	RMS Forward Current		50	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 110$ °C $\delta = 0.5$	25	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10$ ms Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 105$ °C	25	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 77PI-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	1.8	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			25	µA
	T_j = 100°C				2.5	mA
V_F	T_j = 25°C	I_F = 63A			1.15	V
	T_j = 100°C	I_F = 20A			0.85	

RECOVERY CHARACTERISTICS

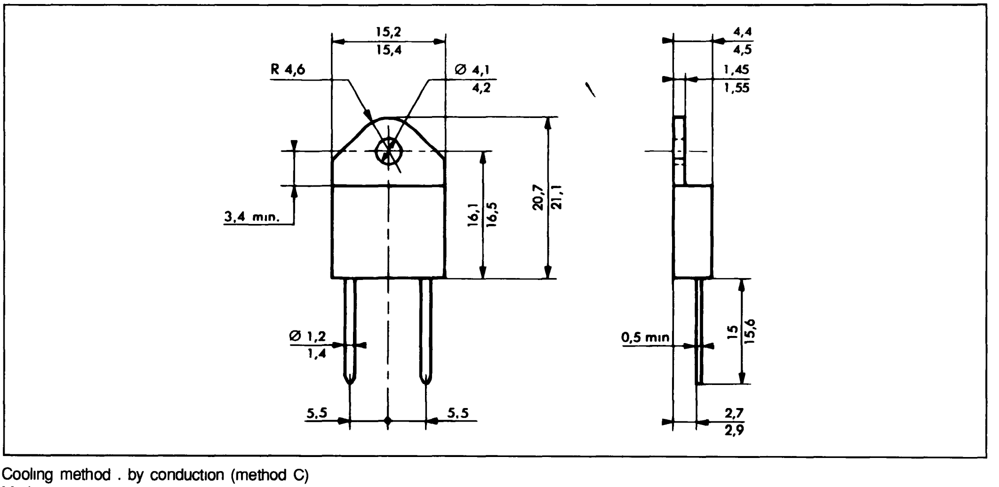
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 50A/µs V_R = 30V see figure 12			50	ns
Q_{rr}	T_j = 25°C I_F = 2A di_F/dt = – 20A/µs $V_R \leq$ 30V			20	nC
t_{fr}	T_j = 25°C I_F = 1A t_r = 5ns Measured at 1.1 x V_F		10		ns
V_{FP}	T_j = 25°C I_F = 1A t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0047\, I_F$ $\qquad P = 0.66 \times I_{F(AV)} + 0.0047 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DOP 3 Plastic



Cooling method . by conduction (method C)
Marking : type number
Weight : 4.3g
Recommended torque value : 80cm. N
Maximum torque value . 100cm. N

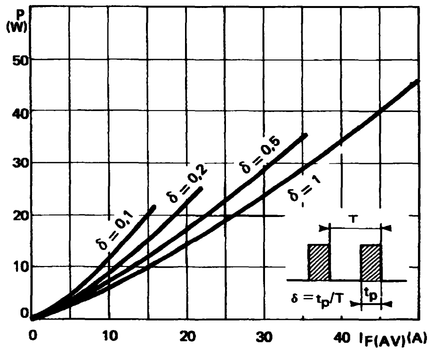


FIGURE 1 : Power losses versus average current

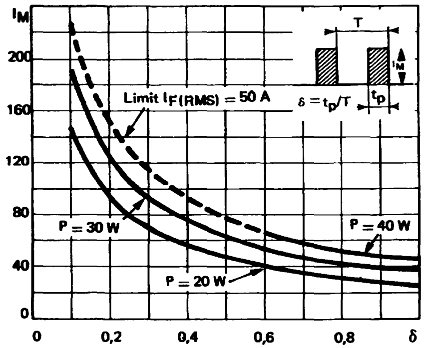


FIGURE 2 : Peak current versus form factor

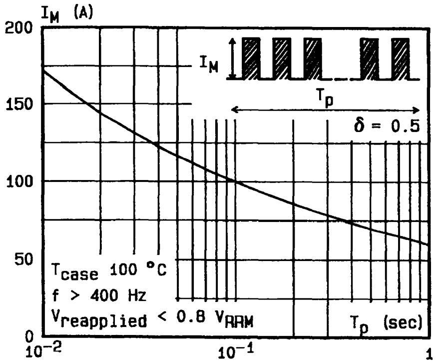


FIGURE 3 : Non repetitive peak surge current versus duration

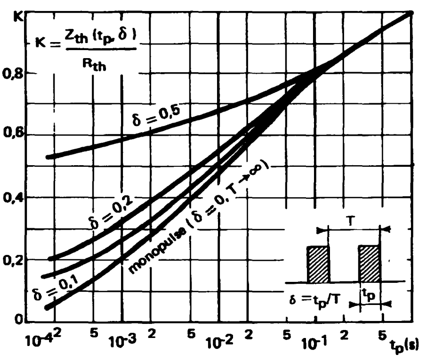


FIGURE 4 : Thermal impedance versus pulse width

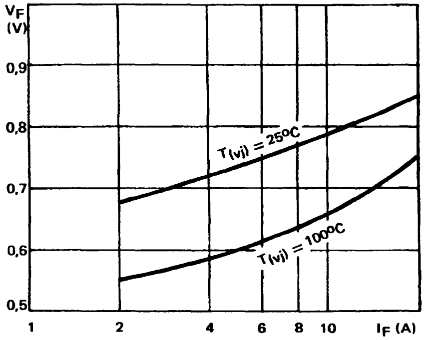


FIGURE 5 : Voltage drop and dispersion versus forward current

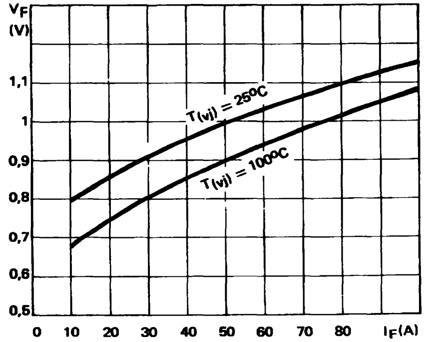


FIGURE 6 : Voltage drop versus forward current

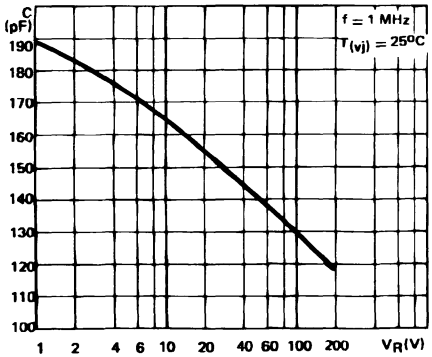


FIGURE 7 : Capacitance versus reverse voltage applied

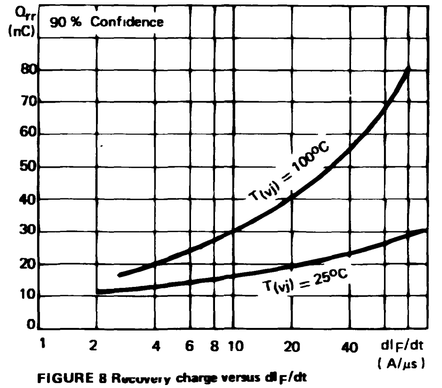


FIGURE 8 Recovery charge versus dIF/dt

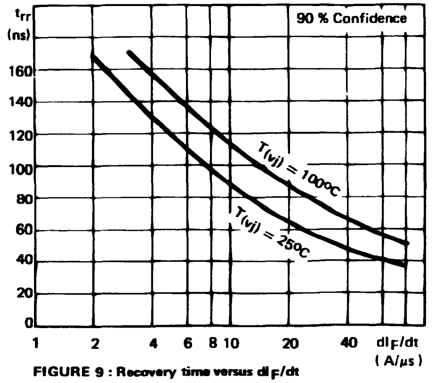


FIGURE 9 : Recovery time versus dIF/dt

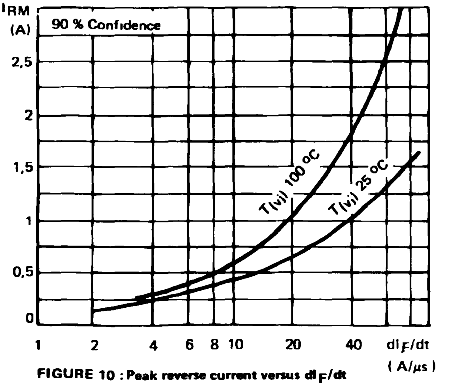


FIGURE 10 : Peak reverse current versus dIF/dt

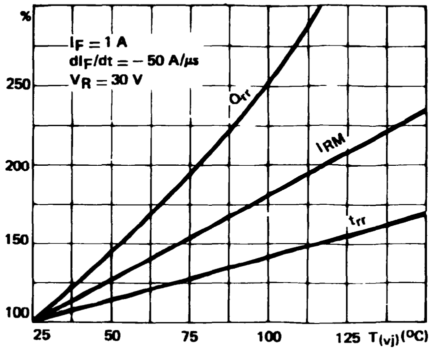


FIGURE 11 : Dynamic parameters versus junction temperature

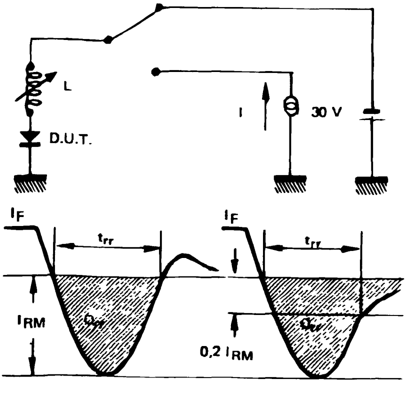
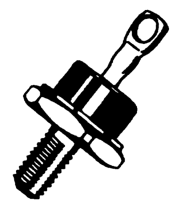


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

BYW 78-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} and I_{RM} AT 100°C UNDER USERS CONDITIONS



DO 5
(Metal)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	1000	A
$I_{F(RMS)}$	RMS Forward Current		100	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100°C$ $\delta = 0.5$	50	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	1500	A
P_{tot}	Power Dissipation	$T_C = 90°C$	60	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 78-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 160A			1.1	V
	T_j = 100°C	I_F = 50A			0.85	

RECOVERY CHARACTERISTICS

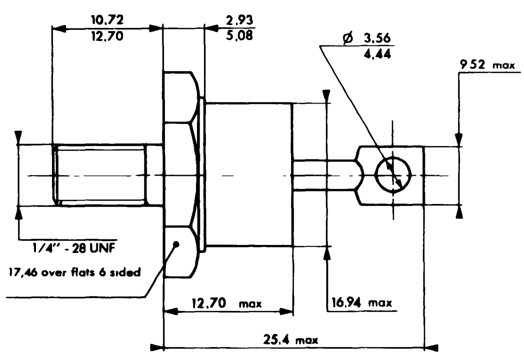
Symbol	Test conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/µs			60	ns
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0021\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.0021 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



Cooling method . by conduction (method C)
Marking . Cathode connected to case type number
Anode connected to case . type number + suffix R (Consult us for these reverse version datasheets)
Weight 18 84g
Recommended torque value : 250cm N
Maximum torque value 310cm N

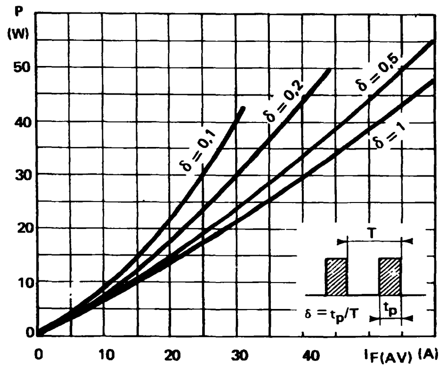


FIGURE 1 : Power losses versus average current

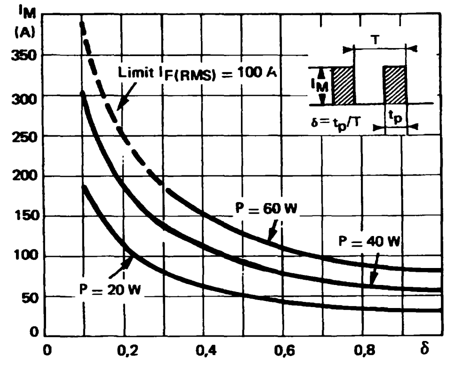


FIGURE 2 : Peak current versus form factor

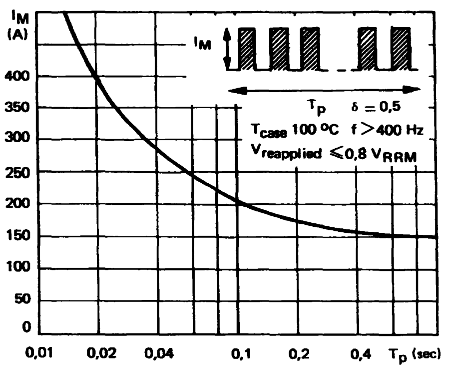


FIGURE 3 : Non repetitive peak surge current versus duration

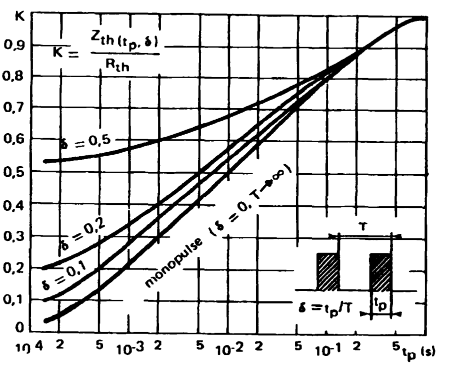


FIGURE 4 : Thermal impedance versus pulse width

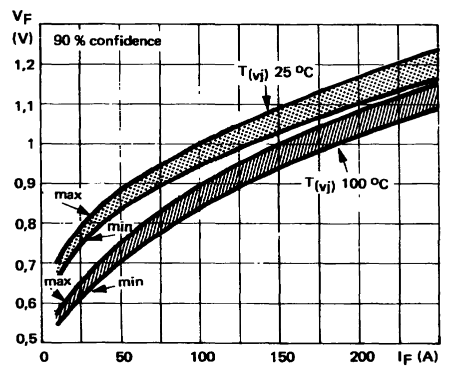


FIGURE 5 : Voltage drop and spread versus forward current

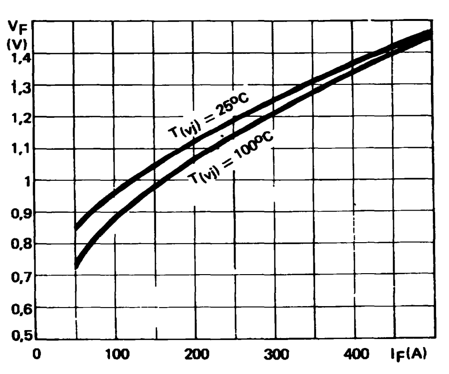


FIGURE 6 : Voltage drop versus forward current

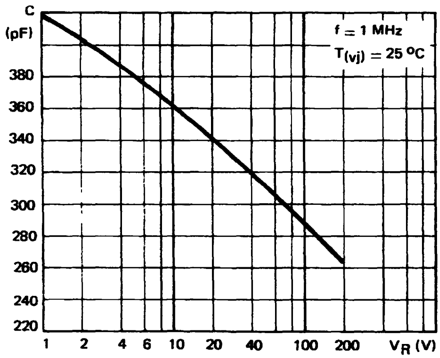


FIGURE 7 : Capacitance versus reverse voltage applied

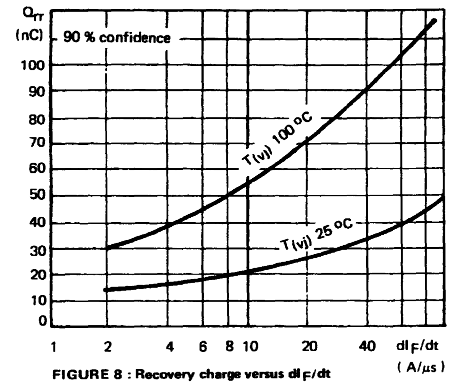


FIGURE 8 : Recovery charge versus dIF/dt

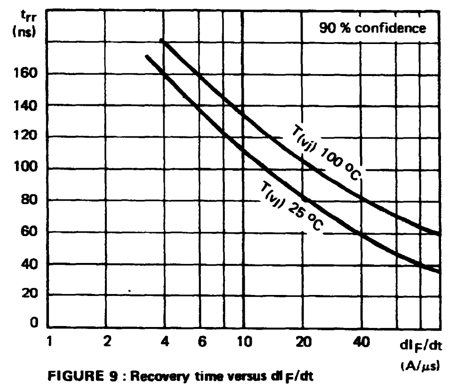


FIGURE 9 : Recovery time versus dIF/dt

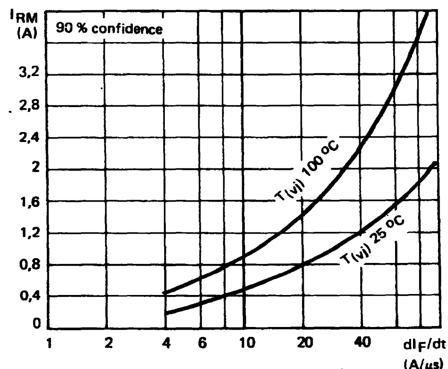


FIGURE 10 : Peak reverse current versus dIF/dt

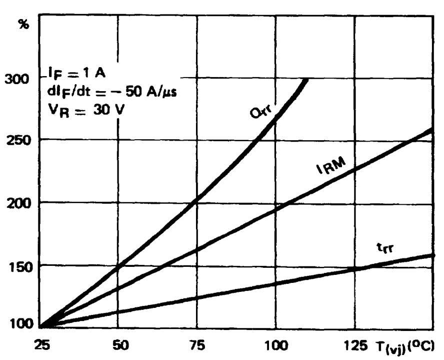


FIGURE 11 : Dynamic parameters versus junction temperature

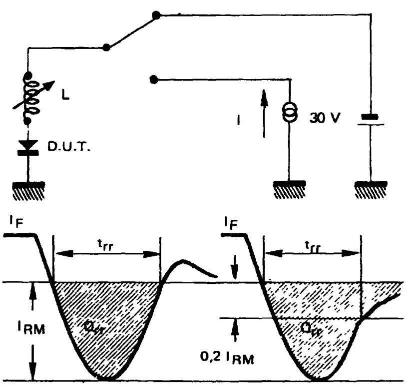


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

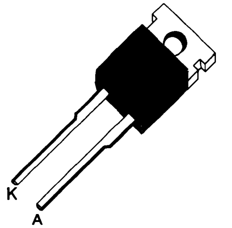
SGS-THOMSON
MICROELECTRONICS

BYW 80-50 → 200 A

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- HIGH SURGE CURRENT AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	100	A
$I_{F\ (RMS)}$	RMS Forward Current		20	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 125°C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 80–				Unit
		50A	100A	150A	200A	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 22A			1.25	V
	T_j = 100°C	I_F = 7A			0.85	

RECOVERY CHARACTERISTICS

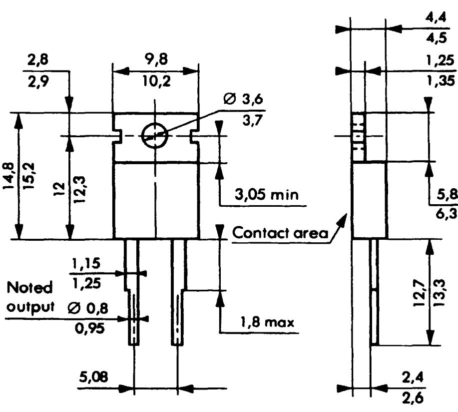
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.014\ I_F$ $\qquad P = 0.66 \times I_{F(AV)} + 0.014 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method : by conduction (method C)
Marking · type number
Weight : 2.4g
Recommended torque value : 80cm N
Maximum torque value . 100cm. N

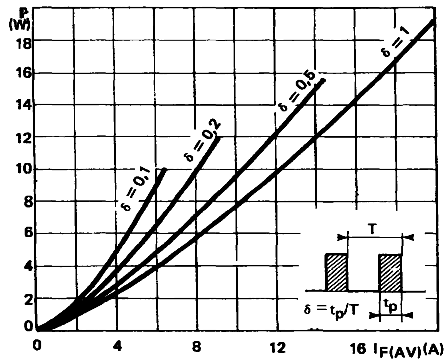


FIGURE 1 : Power losses versus average current

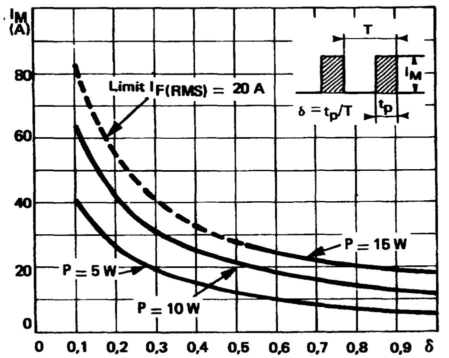


FIGURE 2 : Peak current versus form factor

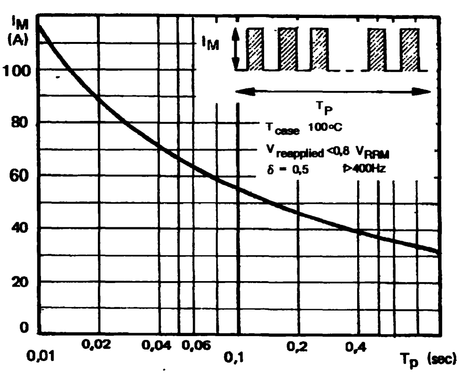


FIGURE 3 : Non repetitive peak surge current versus duration

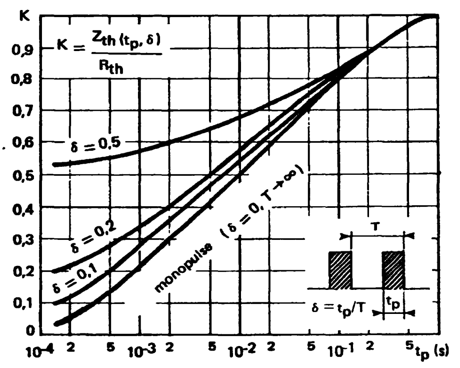


FIGURE 4 : Thermal impedance versus pulse width

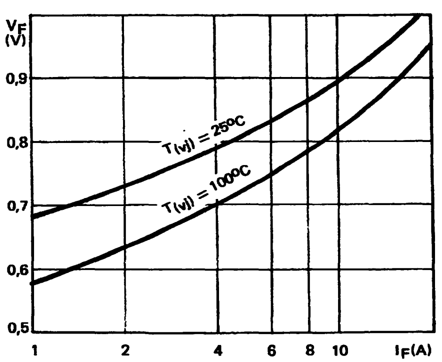


FIGURE 5 : Voltage drop versus forward current

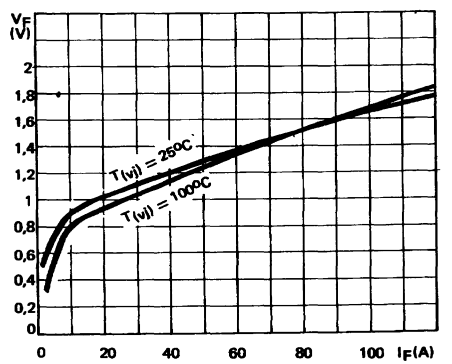


FIGURE 6 : Voltage drop versus forward current

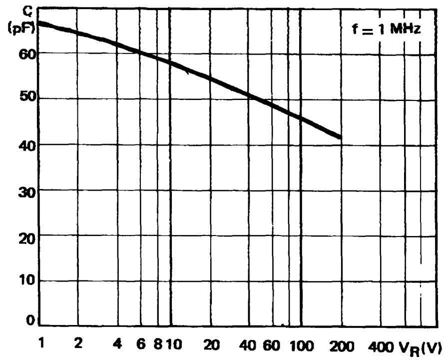


FIGURE 7 : Capacitance versus reverse voltage applied

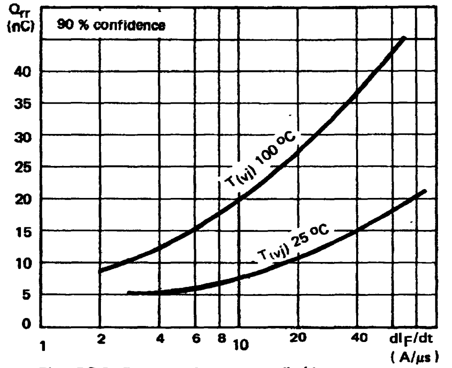


FIGURE 8 : Recovery charge versus dI_F/dt

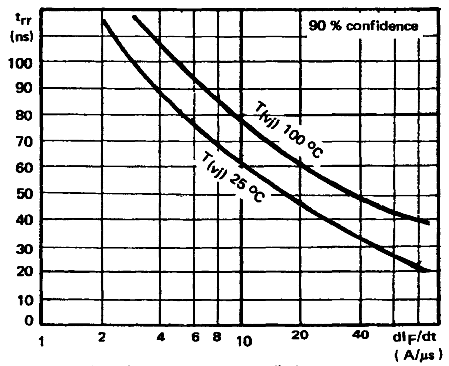


FIGURE 9 : Recovery time versus dI_F/dt

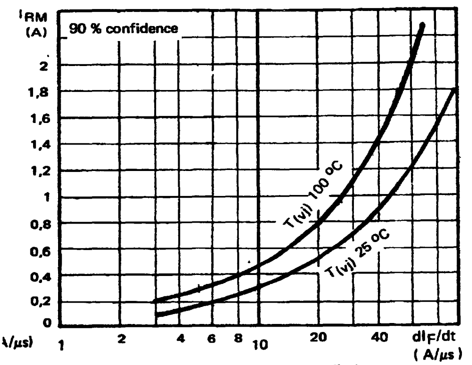


FIGURE 10 : Peak reverse current versus dI_F/dt

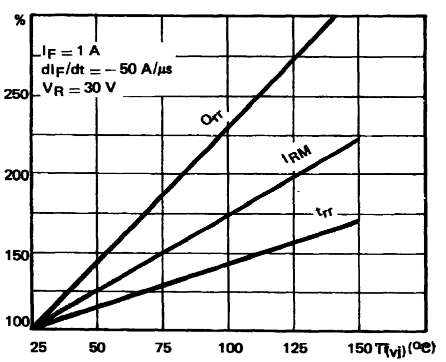


FIGURE 11 : Dynamic paramaters versus junction temperature

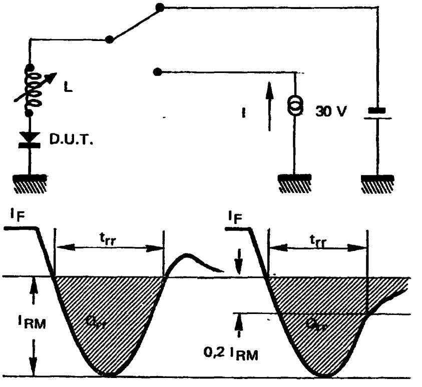


FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM}

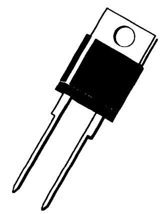
SGS-THOMSON
MICROELECTRONICS

BYW 80PI-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- INSULATED : Capacitance 7pF

Insulating voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	100	A
$I_{F\ (RMS)}$	RMS Forward Current		20	A
$I_{F\ (AV)}$	Average Forward Current *	T_C = 120°C δ = 0.5	8	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	100	A
P_{tot}	Power Dissipation *	T_C = 100°C	15	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 80PI–				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	3.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 22A			1.25	V
	T_j = 100°C	I_F = 7A			0.85	

RECOVERY CHARACTERISTICS

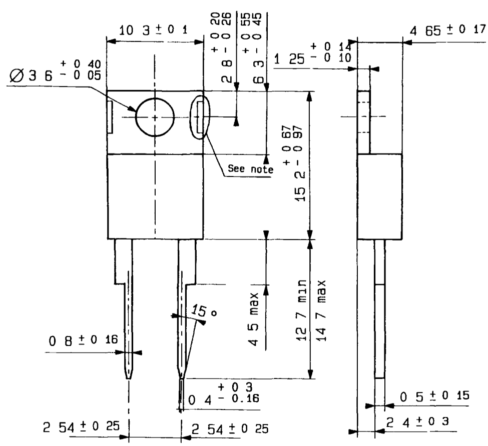
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A See figure 12	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.7 + 0.02\ I_F$ $\qquad$ $P = 0.7 \times I_{F(AV)} + 0.02\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Note SGS-THOMSON reserves the right to have two notches on the heatsink

Cooling method by conduction (method C)
Marking type number
Weight 2g
Recommended torque value 80cm N
Maximum torque value 100cm N

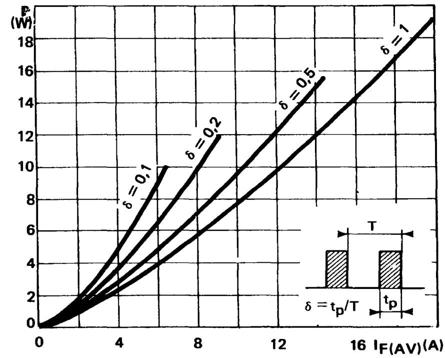


FIGURE 1 : Power losses versus average current

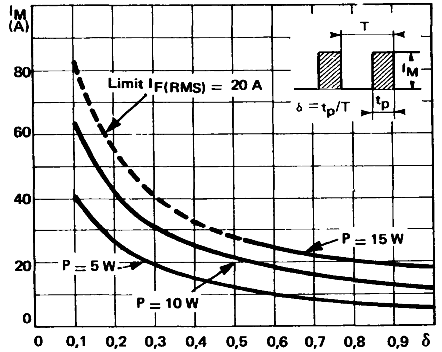


FIGURE 2 : Peak current versus form factor

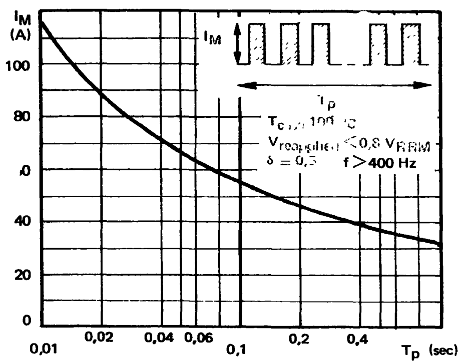


FIGURE 3 : Non repetitive peak surge current versus duration

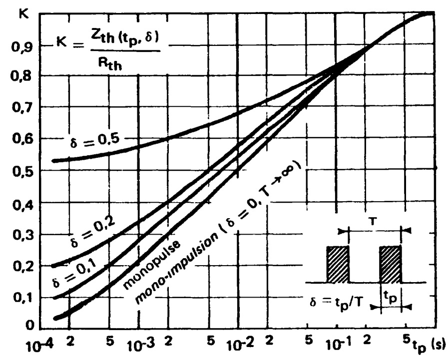


FIGURE 4 : Thermal impedance versus pulse width

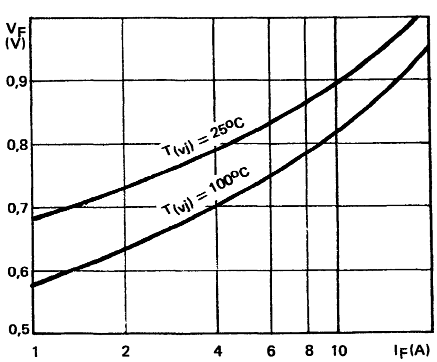


FIGURE 5 : Voltage drop versus forward current

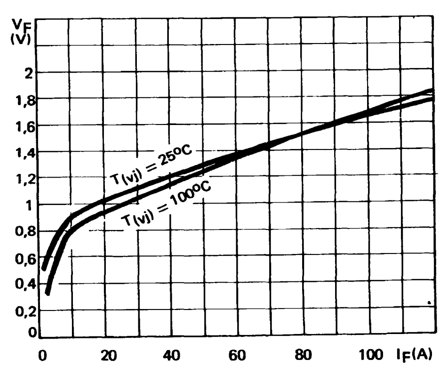


FIGURE 6 : Voltage drop versus forward current

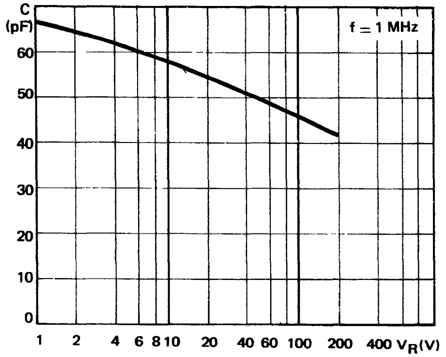


FIGURE 7 : Capacitance versus reverse voltage applied

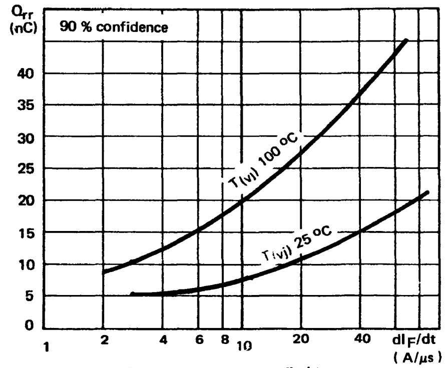


FIGURE 8 : Recovery charge versus dI_F/dt

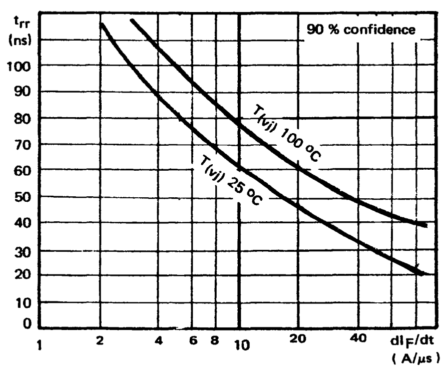


FIGURE 9 : Recovery time versus dI_F/dt

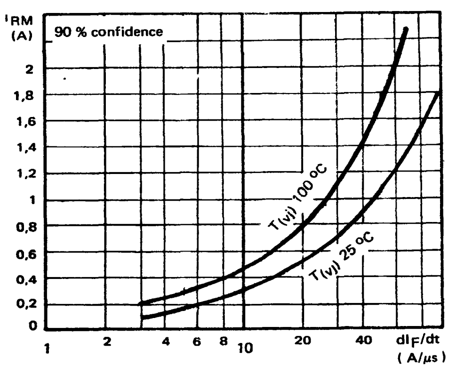


FIGURE 10 : Peak reverse current versus dI_F/dt

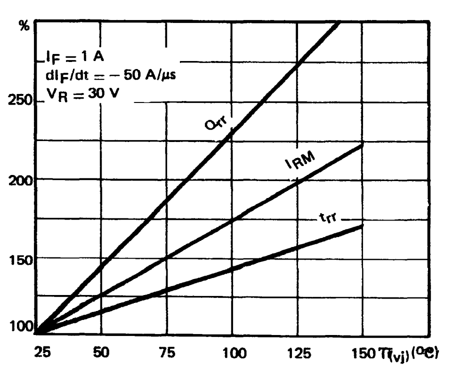


FIGURE 11 : Dynamic paramaters versus junction temperature

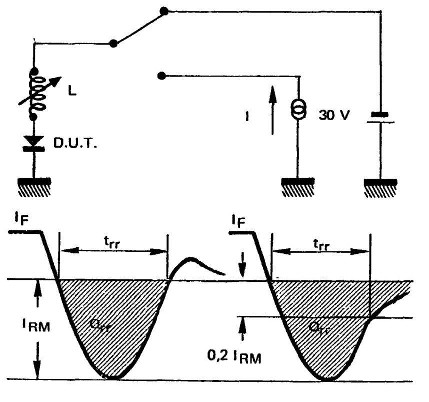


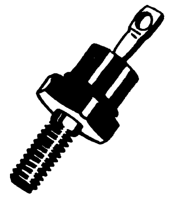
FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM}

SGS-THOMSON
MICROELECTRONICS

BYW 81-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DO 4
(Metal)

DESCRIPTION

Low voltage drop rectifiers suited for switchmode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	200	A
$I_{F\,(RMS)}$	RMS Forward Current		35	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 120°C$ $\delta = 0.5$	15	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P_{tot}	Power Dissipation	$T_C = 100°C$	22	W
T_j	Junction Temperature		– 40 to 150	°C

Symbol	Parameter	BYW 81-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	2.3	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				1.5	mA
V_F	T_j = 25°C	I_F = 38A			1.25	V
	T_j = 100°C	I_F = 12A			0.85	

RECOVERY CHARACTERISTICS

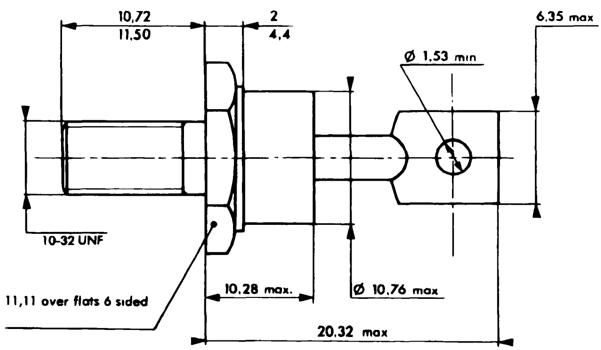
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0077\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.0077 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 4 Metal



Cooling method : by conduction (method C)
Marking · Cathode connected to case . type numbe
Anode connected to case . type number + suffix R (Consult us for these reverse version datasheets)
Weight : 5.1g
Recommended torque value : 180cm. N
Maximum torque value : 220cm N

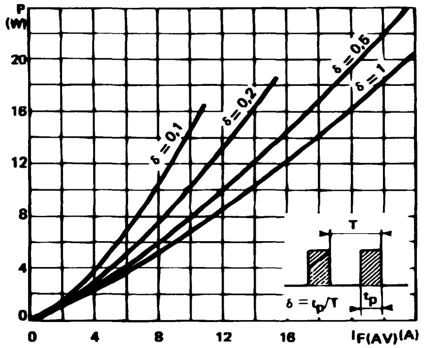


FIGURE 1 : Power losses versus average current

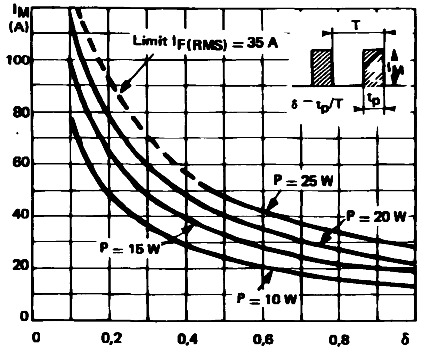


FIGURE 2 : Peak current versus form factor

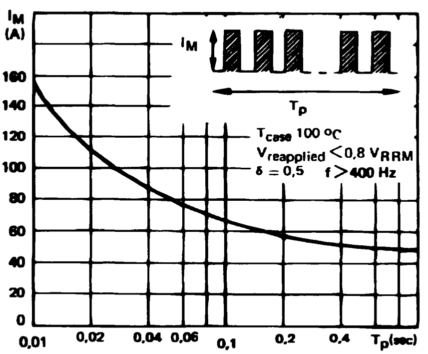


FIGURE 3 : Non repetitive peak surge current versus duration

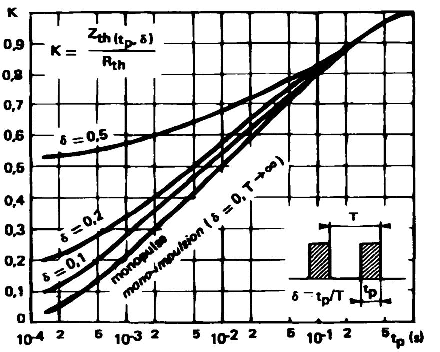


FIGURE 4 : Thermal impedance versus pulse width

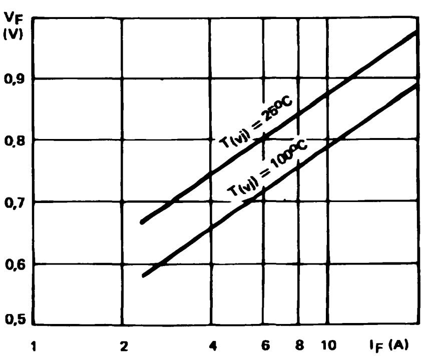


FIGURE 5 : Voltage drop versus forward current

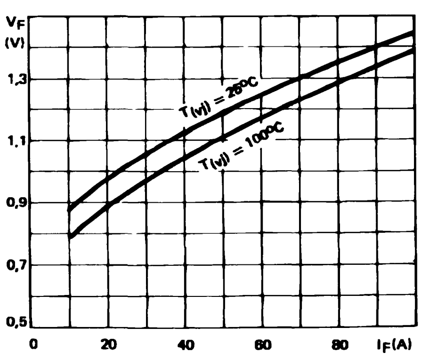


FIGURE 6 : Voltage drop versus forward current

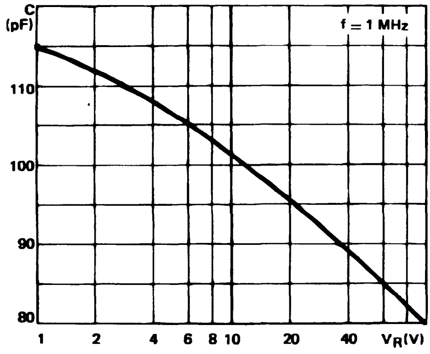


FIGURE 7 : Capacitance versus reverse voltage applied

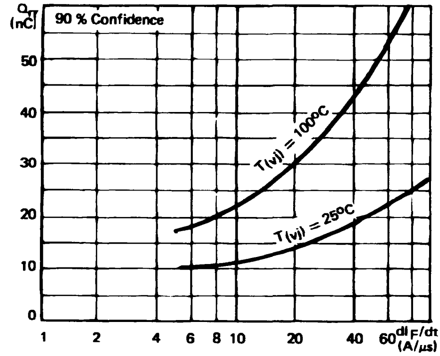


FIGURE 8 : Recovery charge versus dI_F/dt

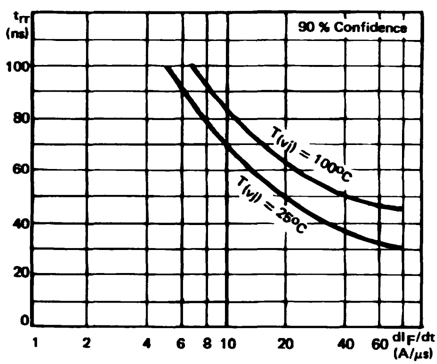


FIGURE 9 : Recovery time versus dI_F/dt

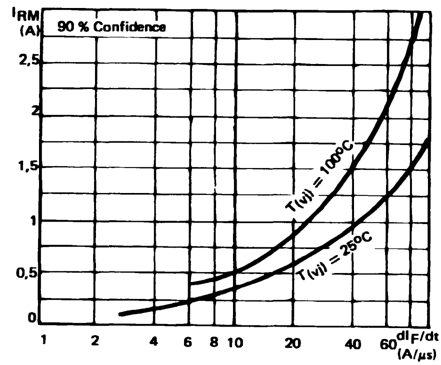


FIGURE 10 : Peak reverse current versus dI_F/dt

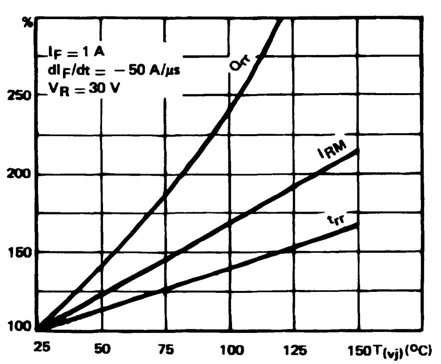


FIGURE 11 : Dynamic parameters versus junction temperature

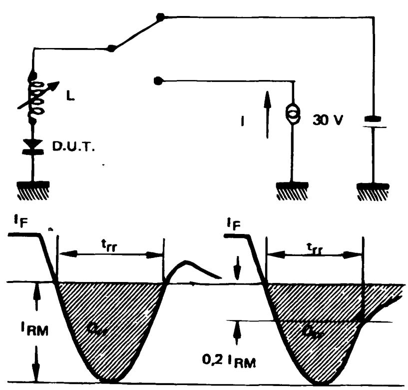


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM}

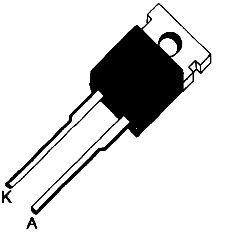
SGS-THOMSON
MICROELECTRONICS

BYW 81P-50 A → 200 A

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OFF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	200	A
$I_{F\ (RMS)}$	RMS Forward Current		35	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 125°C$ $\delta = 0.5$	15	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P_{tot}	Power Dissipation	$T_C = 115°C$	15	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 81P-				Unit
		50A	100A	150A	200A	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				1.5	mA
V_F	T_j = 25°C	I_F = 38A			1.25	V
	T_j = 100°C	I_F = 12A			0.85	

RECOVERY CHARACTERISTICS

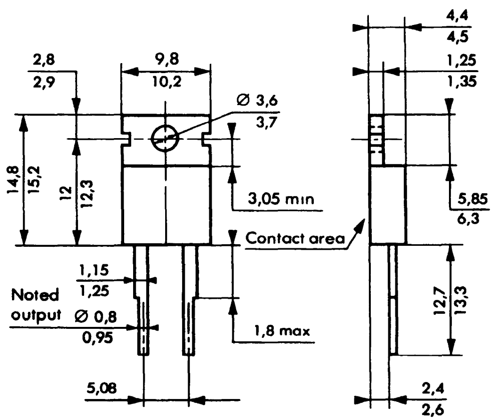
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.007\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.007 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method by conduction (method C)
Marking . type number
Weight . 2 4g
Recommended torque value · 80cm N
Maximum torque value · 100cm. N

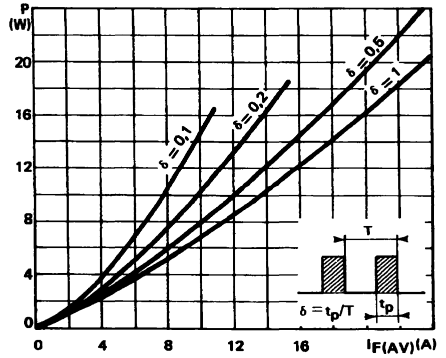


FIGURE 1 : Power losses versus average current

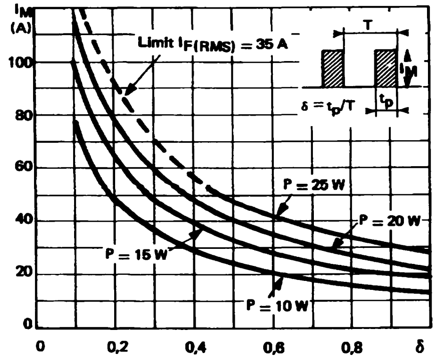


FIGURE 2 : Peak current versus form factor

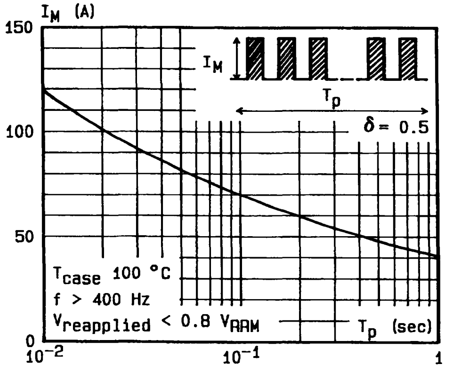


FIGURE 3 : Non repetitive peak surge current versus duration

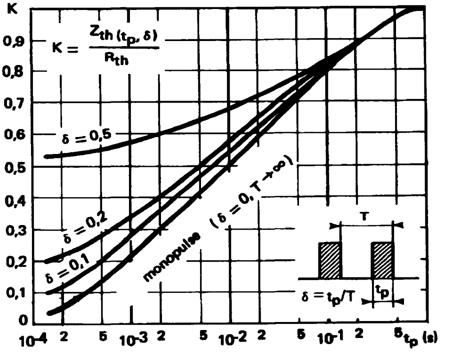


FIGURE 4 : Thermal impedance versus pulse width

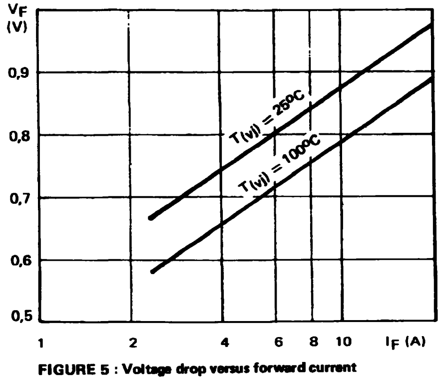


FIGURE 5 : Voltage drop versus forward current

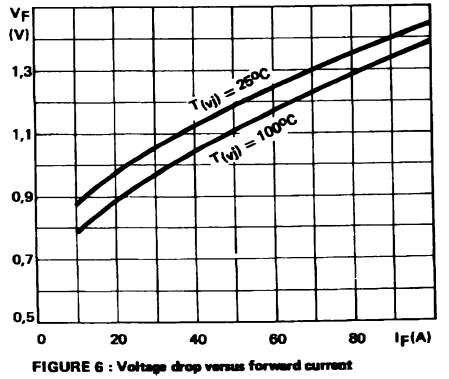


FIGURE 6 : Voltage drop versus forward current

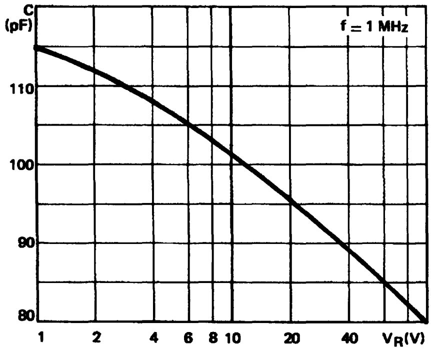


FIGURE 7 : Capacitance versus reverse voltage applied

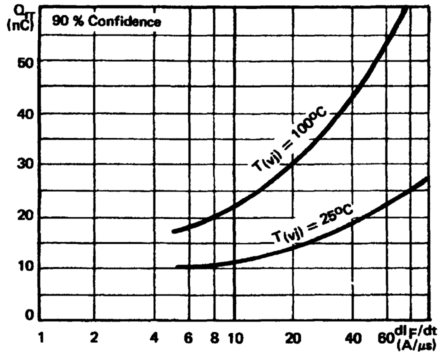


FIGURE 8 : Recovery charge versus dI_F/dt

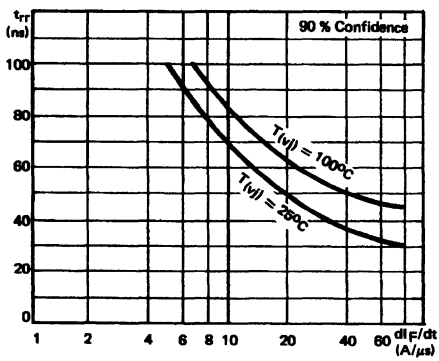


FIGURE 9 : Recovery time versus dI_F/dt

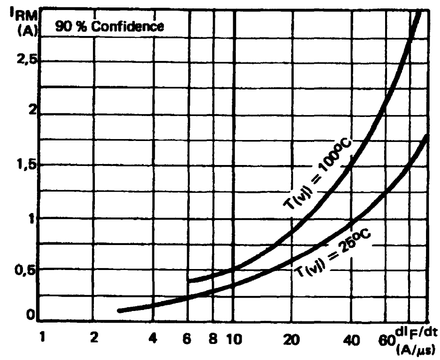


FIGURE 10 : Peak reverse current versus dI_F/dt

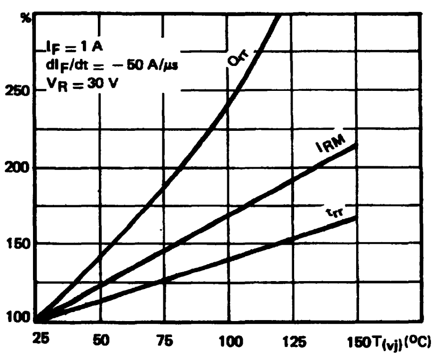


FIGURE 11 : Dynamic parameters versus junction temperature

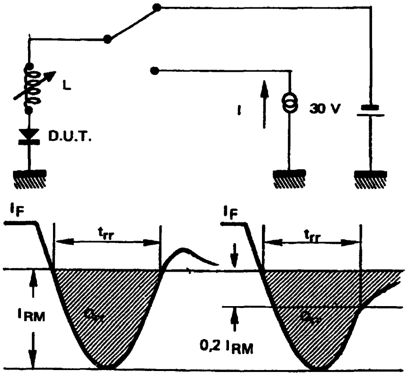


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM}

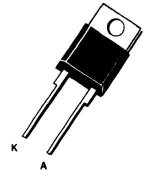
SGS-THOMSON MICROELECTRONICS

BYW 81PI-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- INSULATED : Capacitance 7pF

Insulating voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	200	A
$I_{F\,(RMS)}$	RMS Forward Current		35	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 100°C$ $\delta = 0.5$	15	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P_{tot}	Power Dissipation	$T_C = 95°C$	16	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 81PI–				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	3.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	μA
	T_j = 100°C				1.5	mA
V_F	T_j = 25°C	I_F = 38A			1.25	V
	T_j = 100°C	I_F = 12A			0.85	

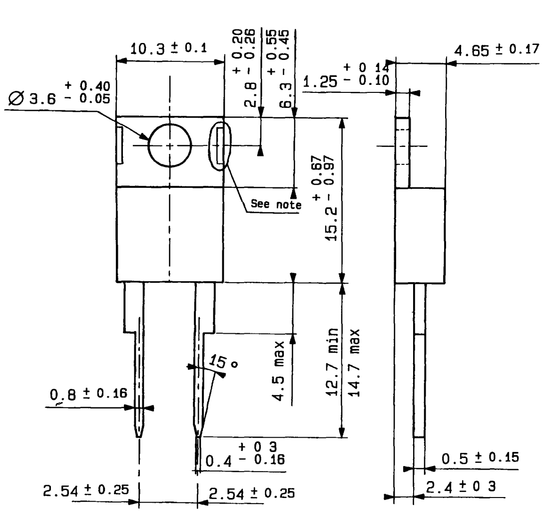
RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	di_F/dt = – 50A/μs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/μs			15	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		15		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.007\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.007\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA : DO 220 AB Plastic



Note . SGS-THOMSON reserves the right to have two notches on the heatsink

Cooling method by conduction (method C)
Marking type number
Weight : 2g
Recommended torque value . 80cm. N
Maximum torque value 100cm N

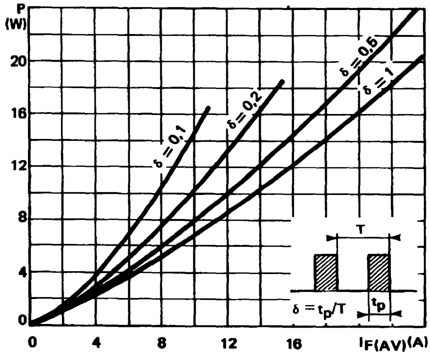


FIGURE 1 : Power losses versus average current

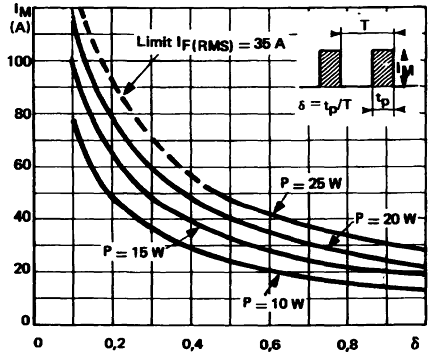


FIGURE 2 : Peak current versus form factor

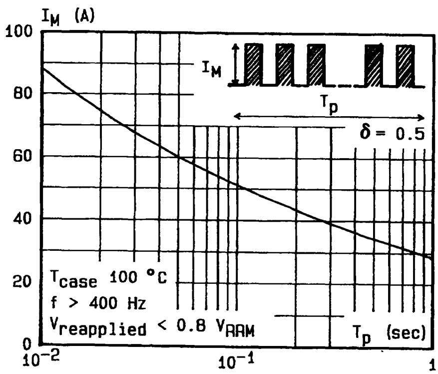


FIGURE 3 : Non repetitive peak surge current versus duration

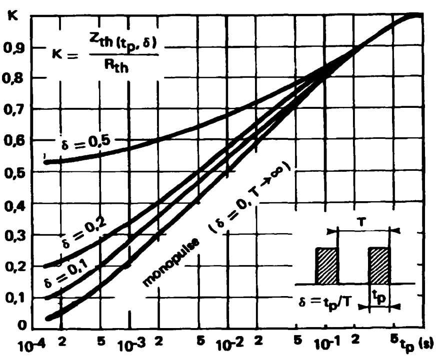


FIGURE 4 : Thermal impedance versus pulse width

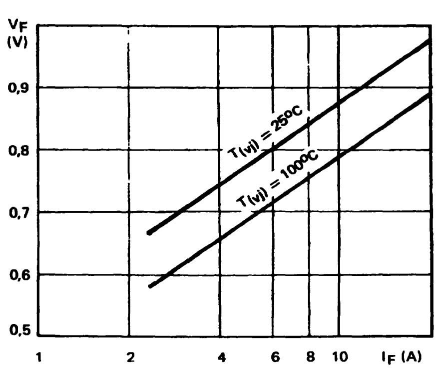


FIGURE 5 : Voltage drop versus forward current

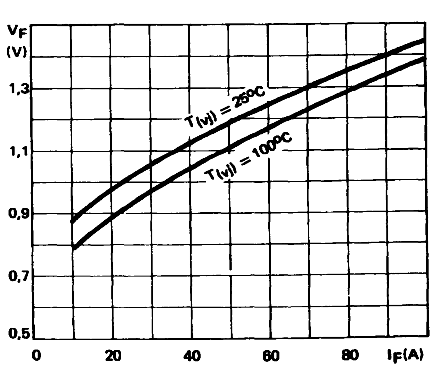


FIGURE 6 : Voltage drop versus forward current

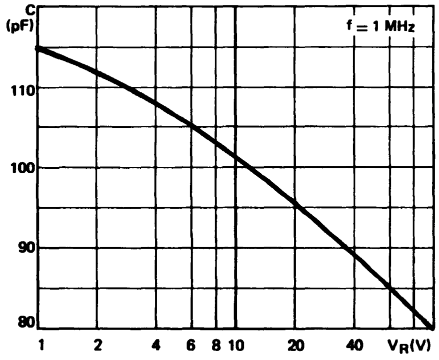


FIGURE 7 : Capacitance versus reverse voltage applied

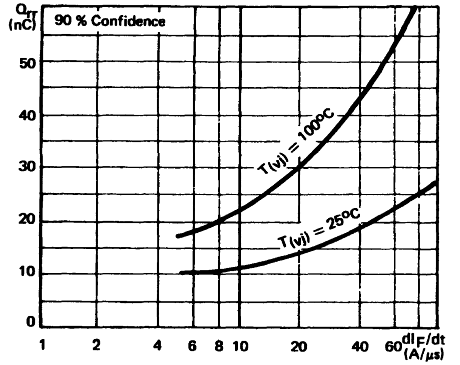


FIGURE 8 : Recovery charge versus dI_F/dt

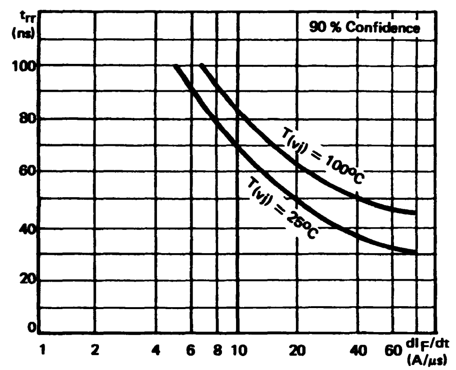


FIGURE 9 : Recovery time versus dI_F/dt

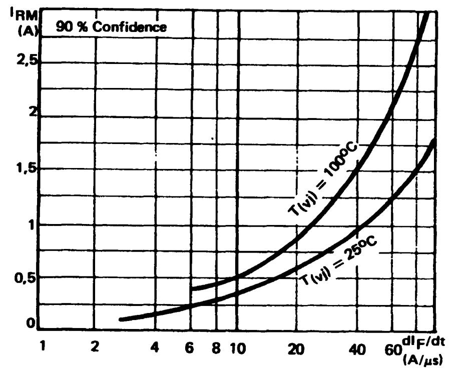


FIGURE 10 : Peak reverse current versus dI_F/dt

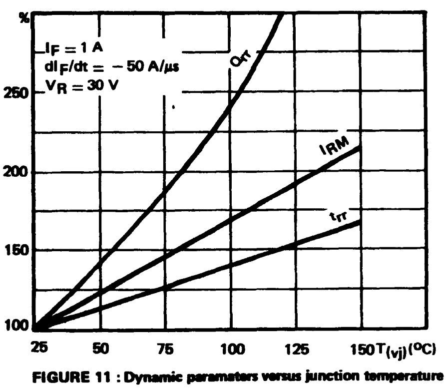


FIGURE 11 : Dynamic parameters versus junction temperature

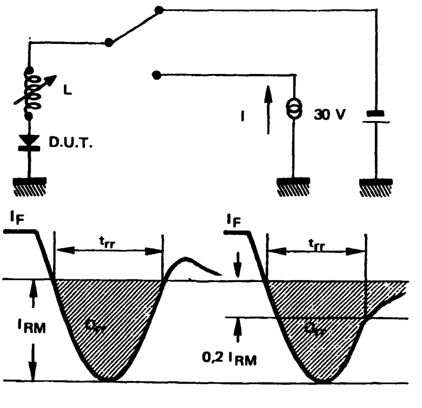


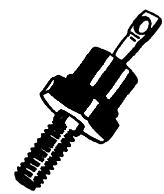
FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM}

SGS-THOMSON MICROELECTRONICS

BYW 88-50 → 1000

RECTIFIER DIODES

- STANDARD RECTIIFER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



DO 4
(Metal)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F\ (AV)}$	Average Forward Current*	T_c = 125°C	12	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	230	A
P_{tot}	Power Dissipation*	T_c = 125°C	12.5	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 88-									Unit
		50	100	200	300	400	500	600	800	1000	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	2	°C/W

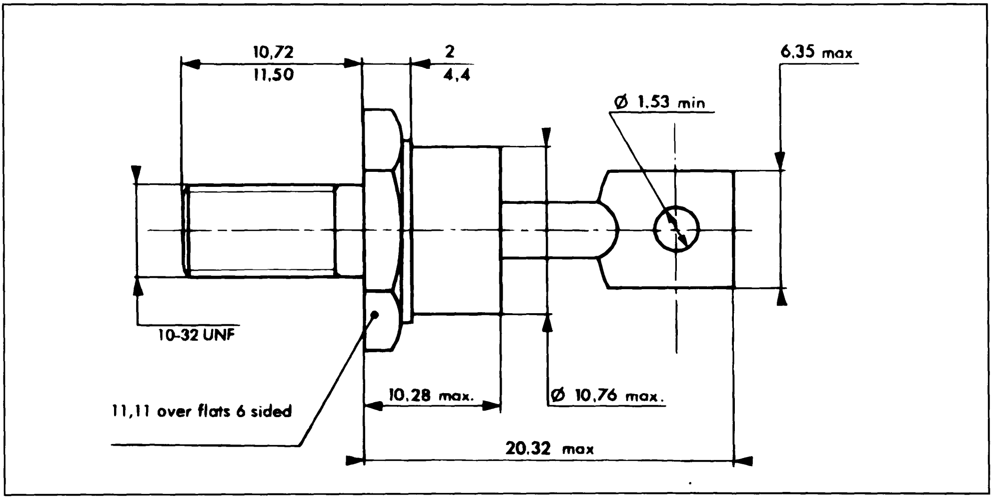
ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 125°C	$V_R = V_{RRM}$			3	mA
V_F	T_j = 25°C	I_F = 35A			1.25	V

* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

DO 4 Metal



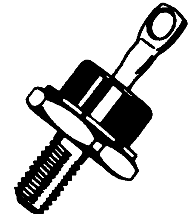
Cooling method by conduction (method C)
Marking · Cathode connected to case type number
Anode connected to case type number + suffix R (consult us for these reverse version datasheets)
Weight : 5 1g
Recommended torque value 180cm N
Maximum torque value : 220cm N

SGS-THOMSON MICROELECTRONICS

BYW 92-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT AND AVALANCHE CAPABILITY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DO 5
(Metal)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	500	A
$I_{F(RMS)}$	RMS Forward Current		70	A
$I_{F(AV)}$	Average Forward Current	$T_C = 115°C$ $\delta = 0.5$	35	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	500	A
P_{tot}	Power Dissipation	$T_C = 100°C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 92-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			50	µA
	T_j = 100°C				5	mA
V_F	T_j = 25°C	I_F = 100A			1.3	V
	T_j = 100°C	I_F = 35A			0.92	

RECOVERY CHARACTERISTICS

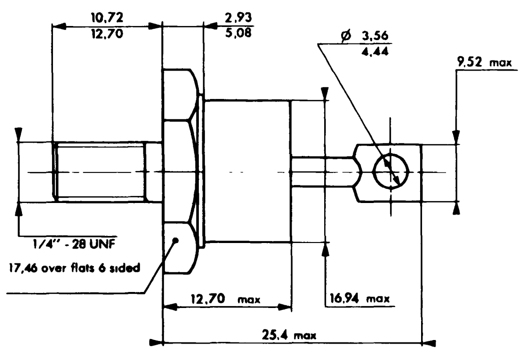
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A see figure 12	dI_F/dt = – 50A/µs			50	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	dI_F/dt = – 20A/µs			20	nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 5ns		10		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 5ns		1.5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.0047\ I_F$ $\qquad$ $P = 0.66 \times I_{F(AV)} + 0.0047 I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



Cooling method : by conduction (method C)
Marking : Cathode connected to case · type number
Anode connected to case . type number + suffix R (Consult us for these reverse version datasheets)
Weight : 18.84g
Recommended torque value : 250cm. N
Maximum torque value : 310cm. N

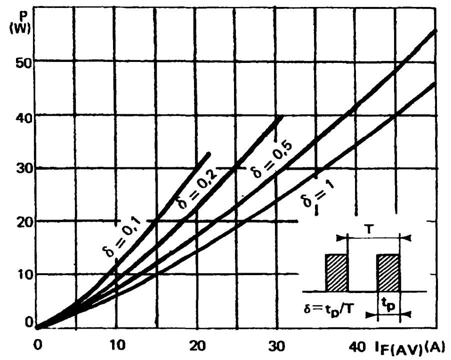


FIGURE 1 : Power losses versus average current

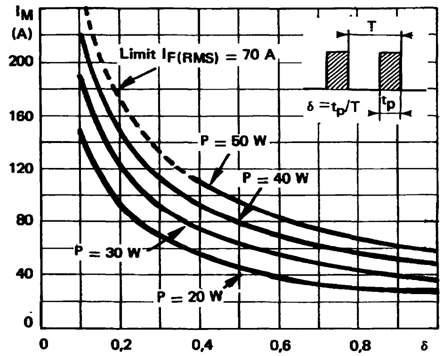


FIGURE 2 : Peak current versus form factor

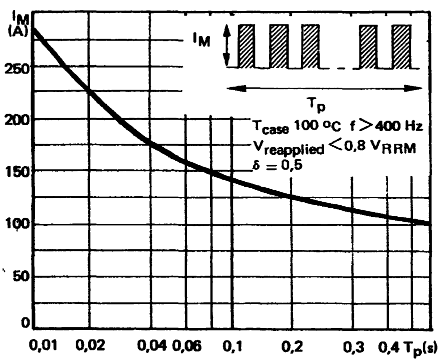


FIGURE 3 : Non repetitive peak surge current versus duration

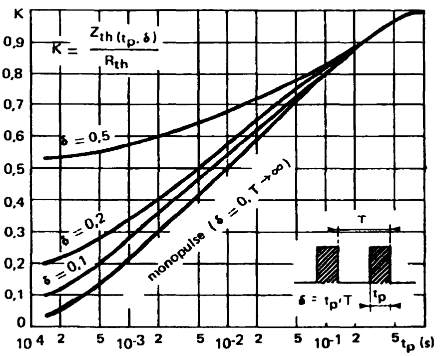


FIGURE 4 : Thermal impedance versus pulse width

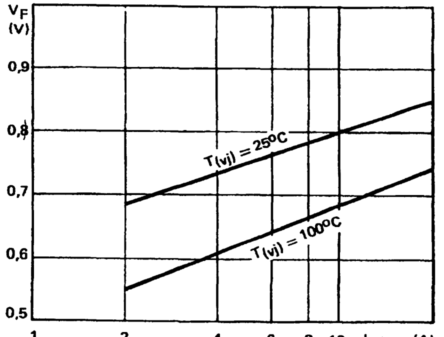


FIGURE 5 : Voltage drop versus forward current

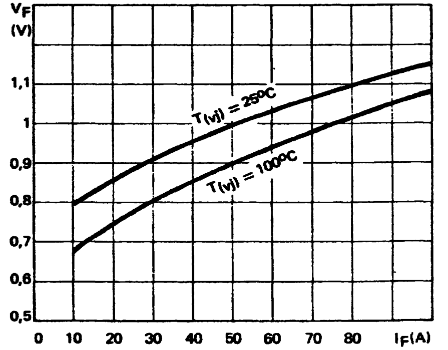


FIGURE 6 : Voltage drop versus forward current

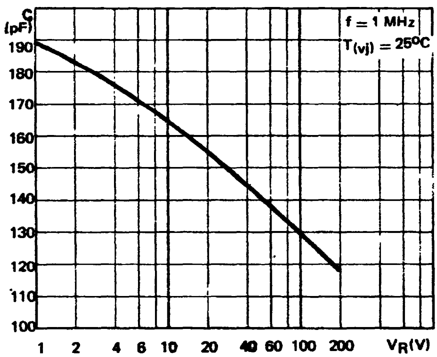


FIGURE 7 : Capacitance versus reverse voltage applied

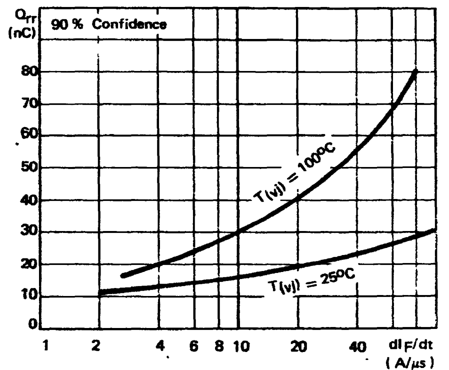


FIGURE 8 Recovery charge versus dIF/dt

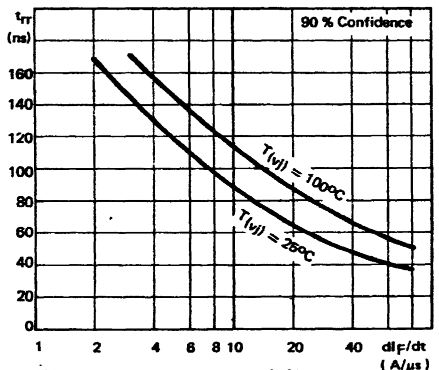


FIGURE 9 : Recovery time versus dIF/dt

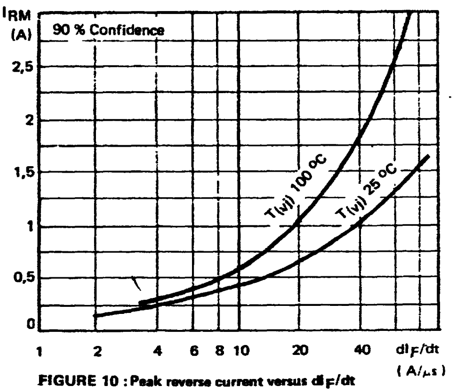


FIGURE 10 : Peak reverse current versus dIF/dt

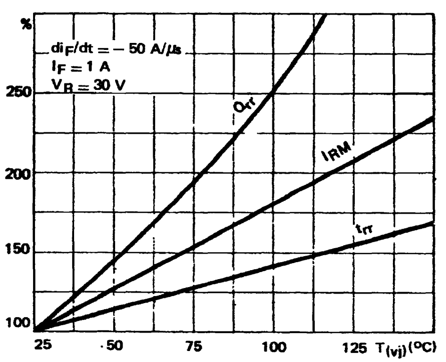


FIGURE 11 : Dynamic parameters versus junction temperature

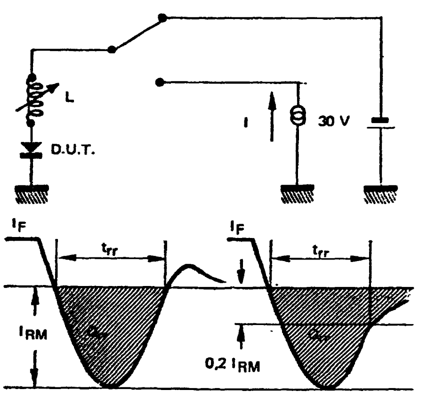
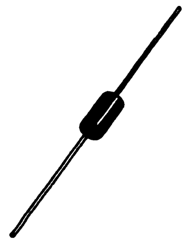


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



DO 27A
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode base drive and transistor circuits.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	70	A
$I_{F\,(AV)}$	Average Forward Current*	$T_a = 85°C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	70	A
P_{tot}	Power Dissipation*	$T_a = 85°C$	2.5	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	BYW 98–				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-a)}$	Junction-ambient*	25	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 9A			1.1	V
	T_j = 100°C	I_F = 3A			0.85	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A See figure 10	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 2A	di_F/dt = – 20A/µs		12		nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 10ns		20		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 10ns		5		V

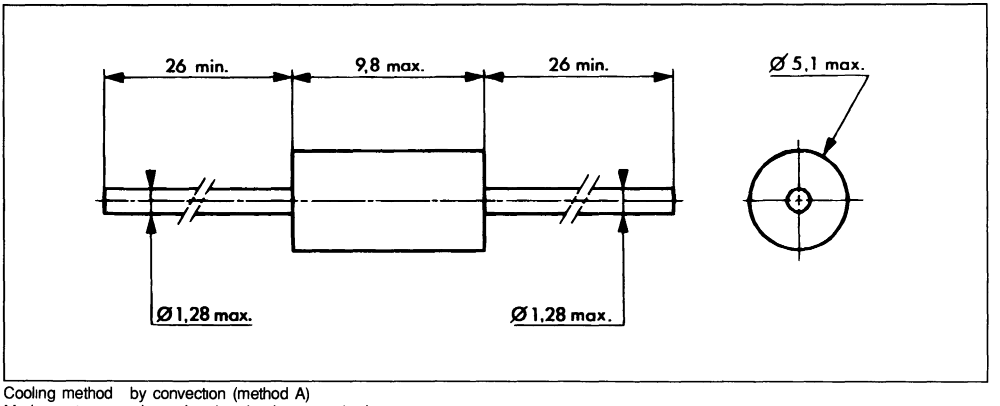
To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.03\ I_F$

$P = 0.06 \times I_{F(AV)} + 0.03\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 27A Plastic



Cooling method by convection (method A)
Marking : type number, white band indicates cathode
Weight : 1g

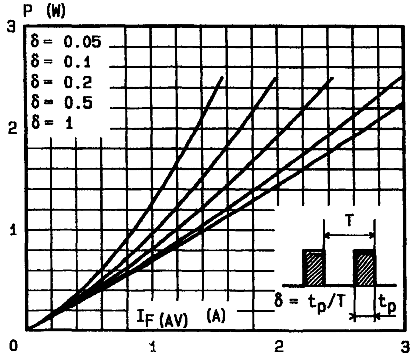


Fig.1 - Maximum average power dissipation versus average forward current.

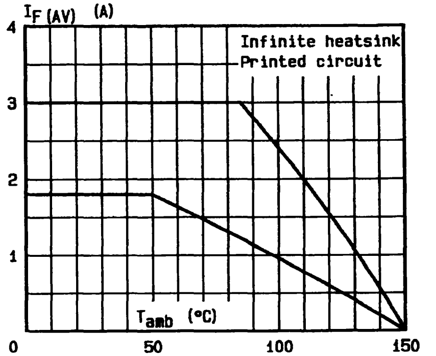


Fig.2 - Average forward current versus ambient temperature.

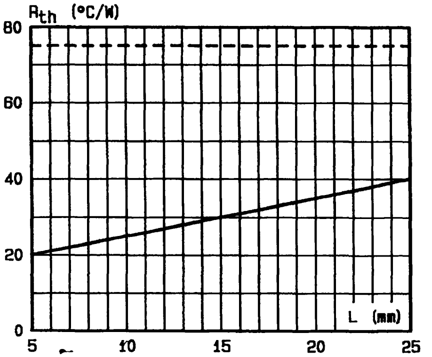
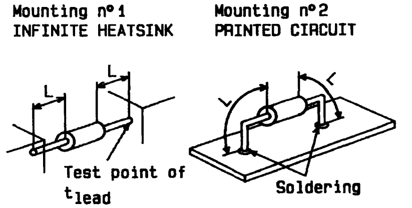


Fig.3 - Thermal resistance versus lead length.



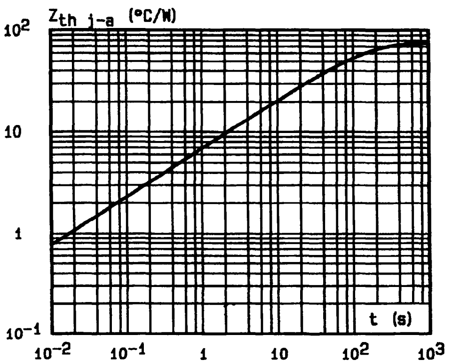


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

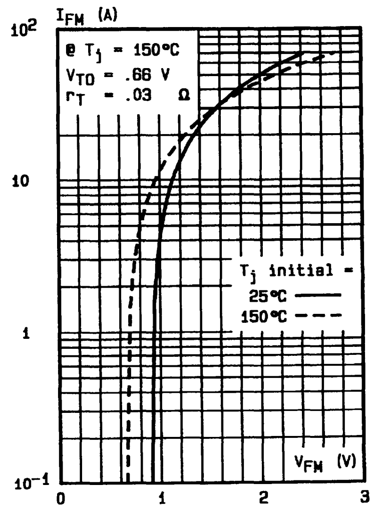


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

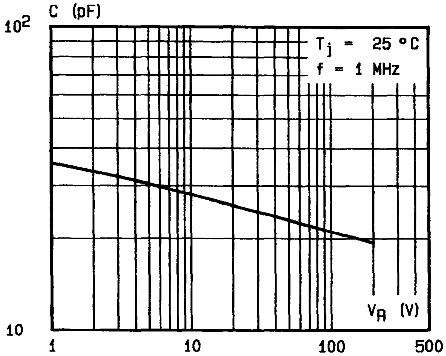


Fig.6 - Capacitance versus reverse voltage applied.

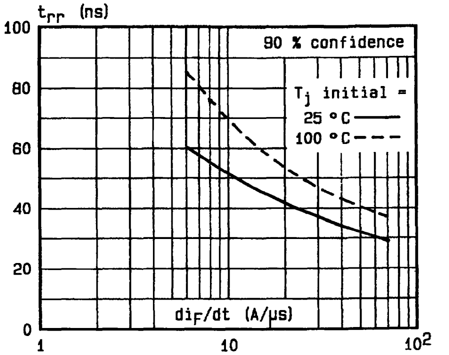


Fig.7 - Recovery time versus di_F/dt.

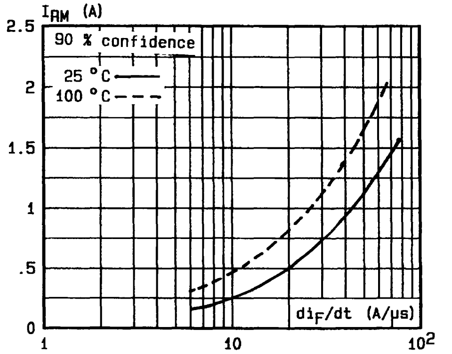


Fig.8 - Peak reverse current versus di_F/dt.

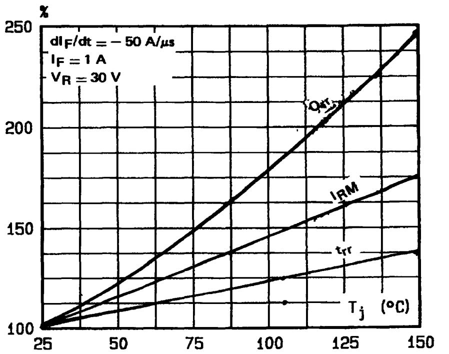


Fig.9 - Dynamic parameters versus junction temperature.

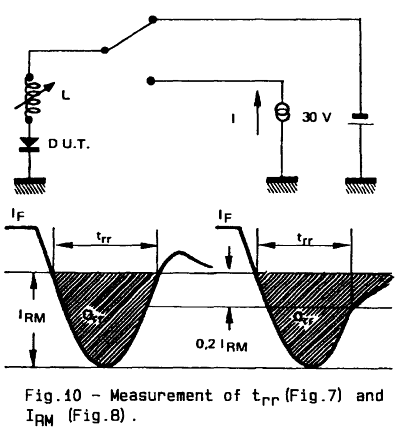


Fig.10 - Measurement of t_{rr} (Fig.7) and I_{RM} (Fig.8).

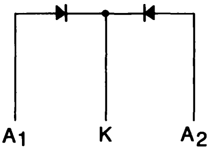
SGS-THOMSON MICROELECTRONICS

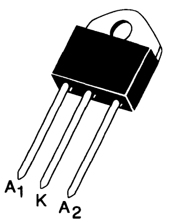
BYW 99P-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- EASE OF PARALLELING
- REDUCED SIZE
- THIS DOUBLE RECTIFIER SERIE ALLOWS :
  - Easy installation and reduced size in equipments
  - Simplification of cooling systems and wiring (less interferences and noise)

Cathode connected to case





TOP 3
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers center tap suited for switching mode power supply.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	200	A
$I_{F\,(RMS)}$	RMS Forward Current		35 per leg	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 125°C$ $\delta = 0.5$	15 per leg	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	200	A
P_{tot}	Power Dissipation	$T_C = 120°C$	15 per leg	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 99P-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	1.8 per leg 1 total	°C/W
$R_{th\,(c)}$	Coupling	0.2	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				1.5	mA
V_F	T_j = 25°C	I_F = 38A			1.25	V
	T_j = 100°C	I_F = 12A			0.85	

RECOVERY CHARACTERISTICS

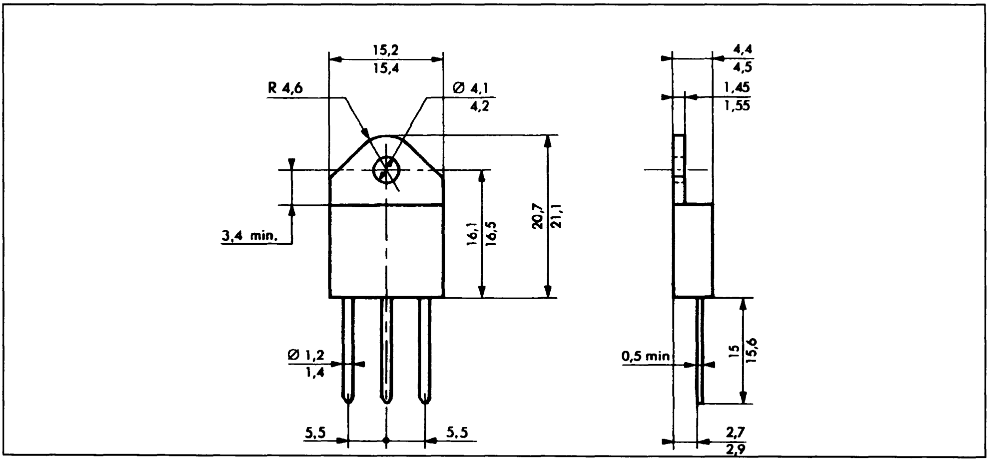
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 50A/µs V_R = 30V see figure 11			35	ns
Q_{rr}	T_j = 25°C I_F = 2A di_F/dt = – 20A/µs $V_R \leq$ 30V			15	nC
t_{fr}	T_j = 25°C I_F = 1A t_r = 5ns Measured at 1.1 x V_F		15		ns
V_{FP}	T_j = 25°C I_F = 1A t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.008\ I_F$
1 leg : $P = 0.66 \times I_{F\ (AV)} + 0.008\ I_F^2{}_{(RMS)}$
Total : $P = 0.66 \times I_{F\ (AV)} + 0.004\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

TOP 3 Plastic



Cooling method : by conduction (method C)
Marking type number
Weight . 4 6g
Recommended torque value . 80cm N
Maximum torque value · 100cm N

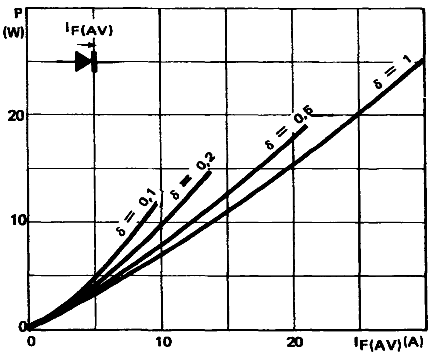


FIGURE 1 : Power losses versus average current per leg

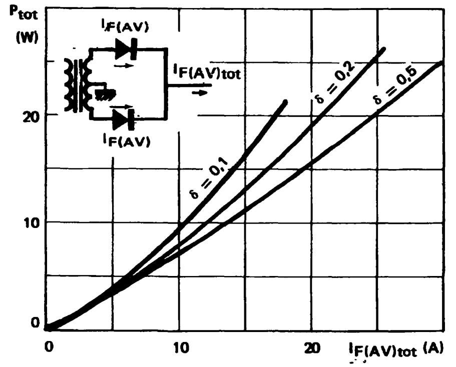


FIGURE 2 : Power losses versus average total current

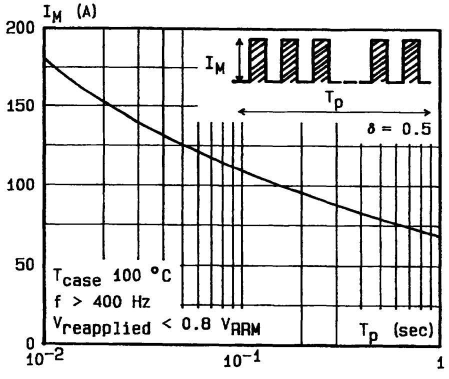


FIGURE 3 : Non repetitive peak surge current versus duration

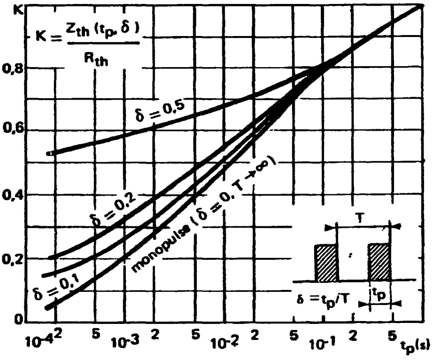


FIGURE 4 : Thermal impedance versus pulse width (per leg)

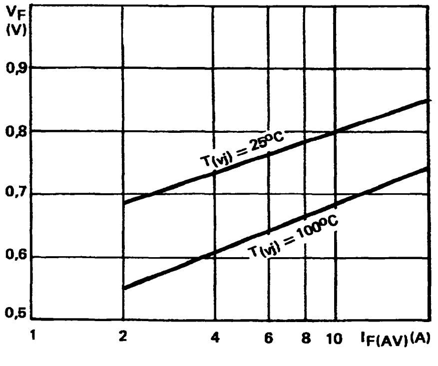


FIGURE 5 : Voltage drop (per leg)

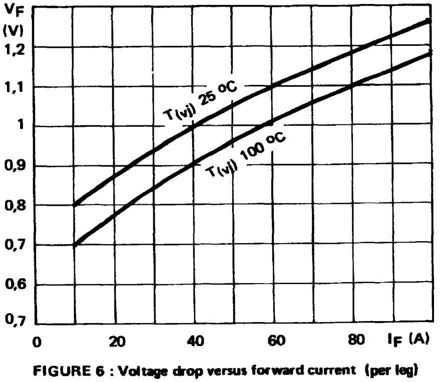


FIGURE 6 : Voltage drop versus forward current (per leg)

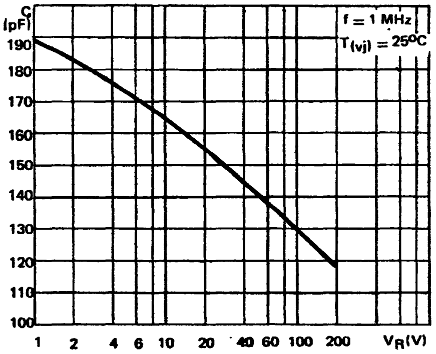


FIGURE 7 : Capacitance versus reverse voltage applied (per leg)

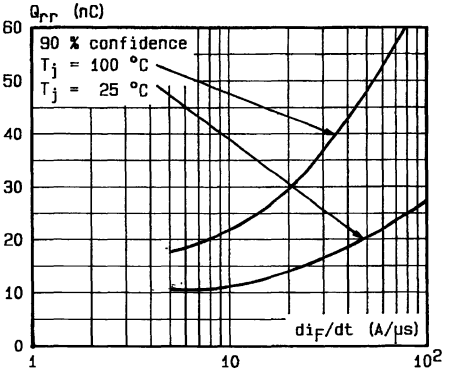


FIGURE 8 : Recovery charge versus di_F/dt.

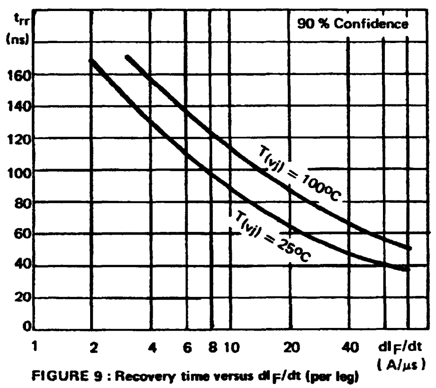


FIGURE 9 : Recovery time versus dI_F/dt (per leg)

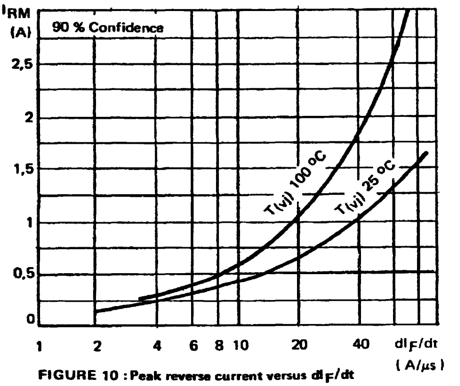


FIGURE 10 : Peak reverse current versus dI_F/dt (per leg)

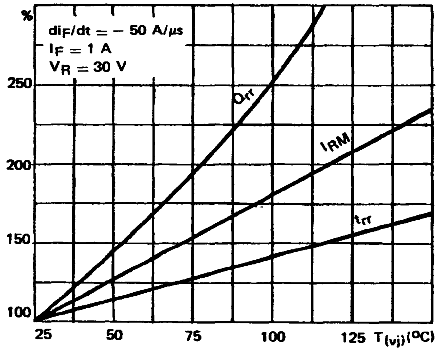


FIGURE 11 : Dynamic parameters versus junction temperature (per leg)

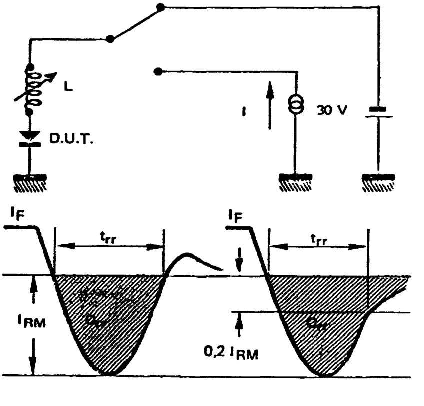


FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

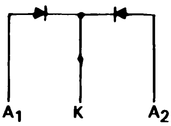
SGS-THOMSON MICROELECTRONICS

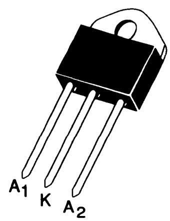
BYW 99PI-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- EASE OF PARALLELING
- INSULATED : capacitance 12pF
  - Easy installation and reduced size in equipments
  - Simplification of cooling systems and wiring

Insulating voltage 2500 V_{RMS}





TOP 3
(Plastic)

DESCRIPTION

Low voltage drop double rectifiers center tap suited for switching mode power supply

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	200	A
$I_{F\,(RMS)}$	RMS Forward Current		35 per leg	A
$I_{F\,(AV)}$	Average Forward Current	T_C = 110°C δ = 0.5	15 per leg	A
I_{FSM}	Surge non Repetitive Forward Current	t_p = 10ms Sinusoidal	200	A
P_{tot}	Power Dissipation	T_C = 110°C	15 per leg	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	BYW 99PI-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	2.0 per leg 1.25 total	°C/W
$R_{th\,(c)}$	Coupling	0.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			15	µA
	T_j = 100°C				1.5	mA
V_F	T_j = 25°C	I_F = 38A			1.25	V
	T_j = 100°C	I_F = 12A			0.85	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 50A/µs V_R = 30V See figure 12			35	ns
Q_{rr}	T_j = 25°C I_F = 2A di_F/dt = – 20A/µs V_R < 30V			15	nC
t_{fr}	T_j = 25°C I_F = 1A t_r = 5ns Measured at 1.1 × VF		15		ns
V_{FP}	T_j = 25°C I_F = 1A t_r = 5ns		2		V

To evaluate the conduction losses use the following equations :

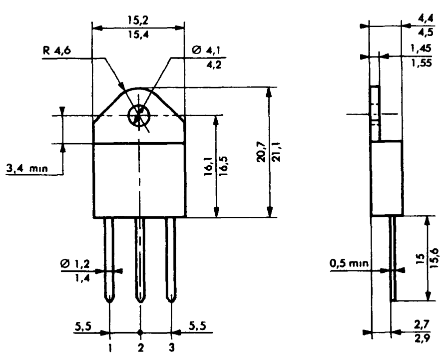
$V_F = 0.7 + 0.012\ I_F$

1 leg : $P = 0.7 \times I_{F\,(AV)} + 0.012\ I_F^2{}_{(RMS)}$

Total : $P = 0.7 \times I_{F\,(AV)} + 0.06\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

TOP 3 Plastic



Cooling method : by conduction (method C)
Marking . type number
Weight . 4.6g
Recommended torque value : 80cm N
Maximum torque value 100cm N

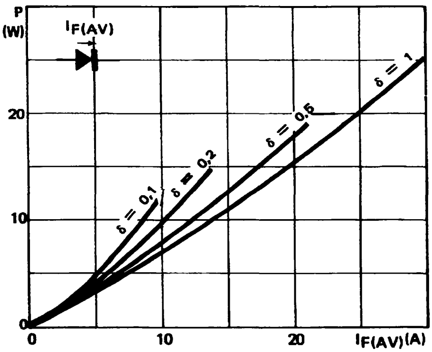


FIGURE 1 : Power losses versus average current per leg

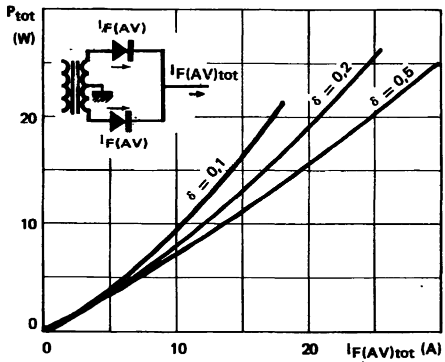


FIGURE 2 : Power losses versus average total current

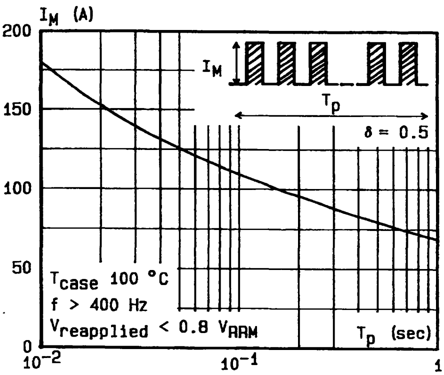


FIGURE 3 : Non repetitive peak surge current versus duration

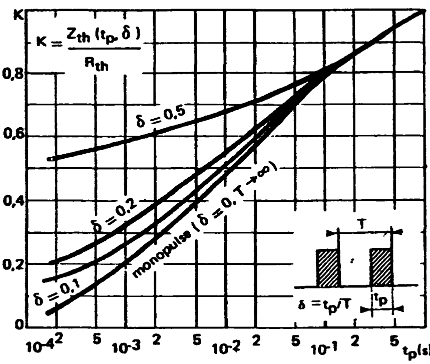


FIGURE 4 : Thermal impedance versus pulse width (per leg)

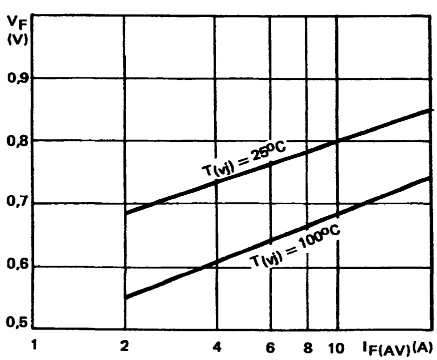


FIGURE 5 : Voltage drop (per leg)

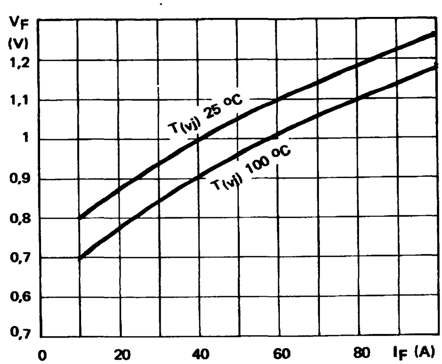


FIGURE 6 : Voltage drop versus forward current (per leg)

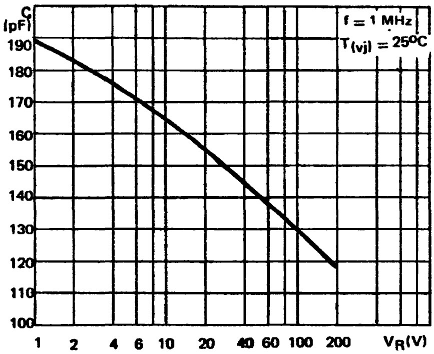


FIGURE 7 : Capacitance versus reverse voltage applied (per leg)

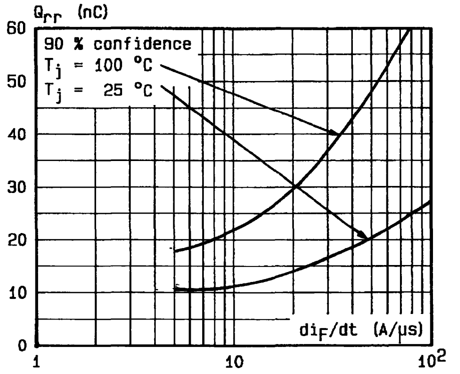


FIGURE 8 : Recovery charge versus di_F/dt.

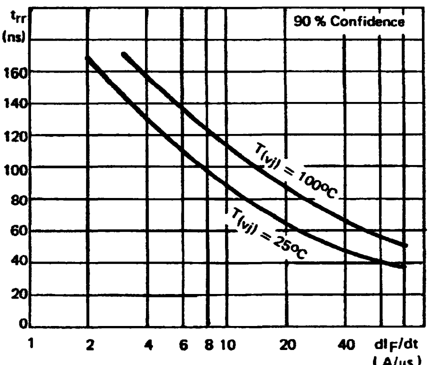


FIGURE 9 : Recovery time versus dI_F/dt (per leg)

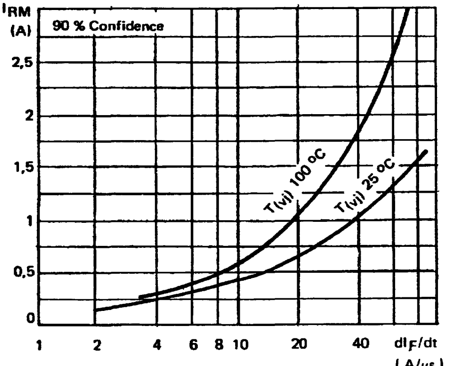


FIGURE 10 : Peak reverse current versus dI_F/dt (per leg)

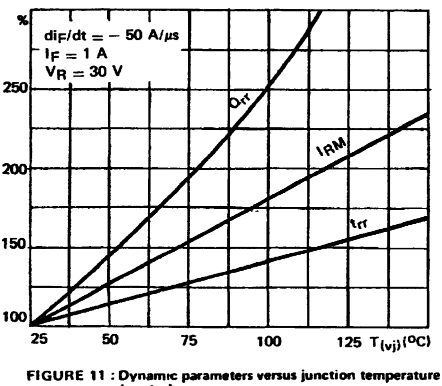


FIGURE 11 : Dynamic parameters versus junction temperature (per leg)

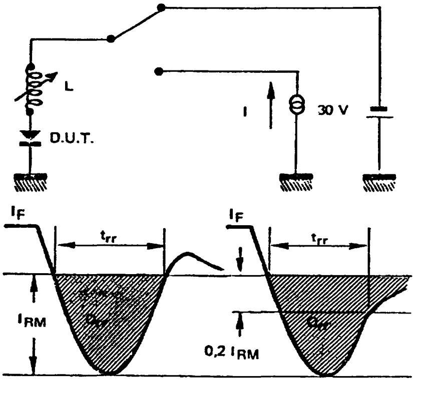


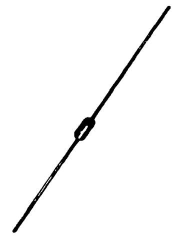
FIGURE 12 : Measurement of t_{rr} (fig. 9) and I_{RM} (fig. 10)

SGS-THOMSON
MICROELECTRONICS

BYW 100-50 → 200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- HIGH SURGE CURRENT
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS



F 126
(Plastic)

DESCRIPTION

Low voltage drop rectifiers suited for switching mode base drive and transistor circuits

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	50	A
$I_{F(AV)}$	Average Forward Current*	$T_a = 90°C$ $\delta = 0.5$	1.5	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	50	A
P_{tot}	Power Dissipation*	$T_a = 90°C$	1.3	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	BYW 100–				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	55	110	165	220	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	45	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 4.5A			1.2	V
	T_j = 100°C	I_F = 1.5A			0.85	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A See figure 10	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C $V_R \leq$ 30V	I_F = 1A	di_F/dt = – 20A/µs		10		nC
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 10ns		30		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 10ns		5		V

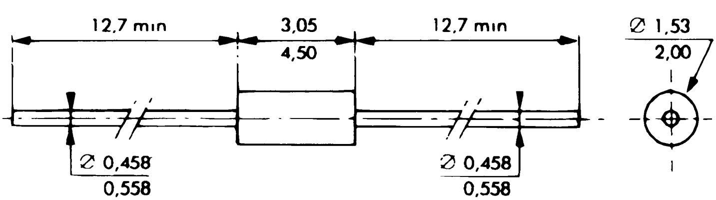
To evaluate the conduction losses use the following equations :

$V_F = 0.66 + 0.075\ I_F$

$P = 0.06 \times I_{F(AV)} + 0.075\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

F 126 Plastic



Cooling method by convection (method A)
Marking type number
Weight · 0 4g

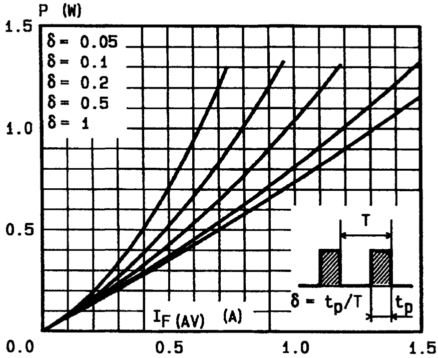


Fig.1 - Maximum average power dissipation versus average forward current.

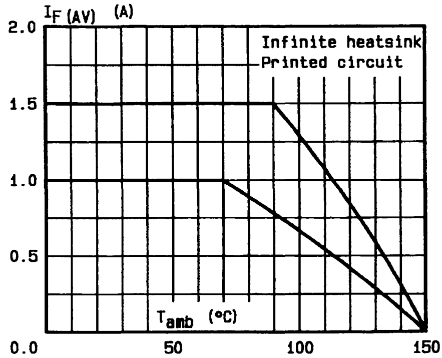


Fig.2 - Average forward current versus ambient temperature.

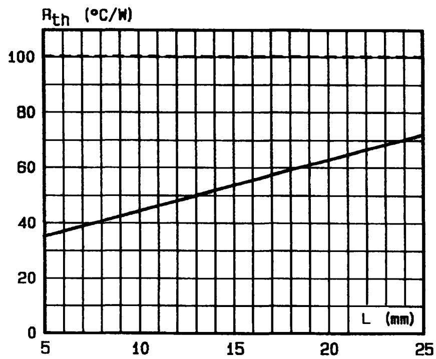
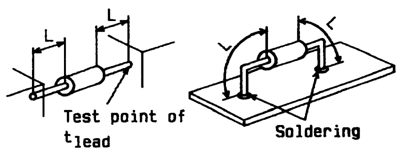


Fig.3 - Thermal resistance versus lead length.

Mounting n°1
INFINITE HEATSINK

Mounting n°2
PRINTED CIRCUIT



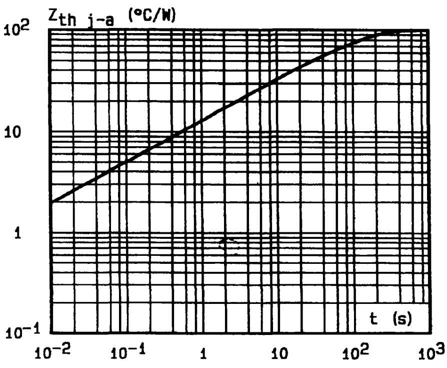


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

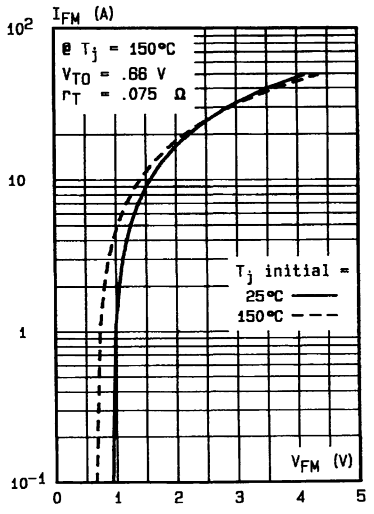


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

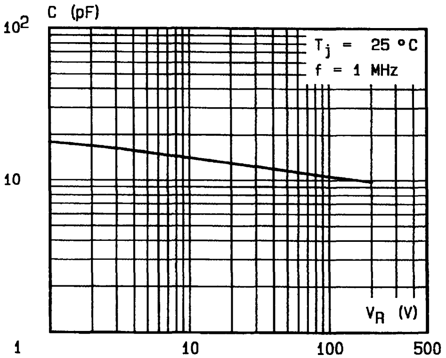


Fig.6 - Capacitance versus reverse voltage applied.

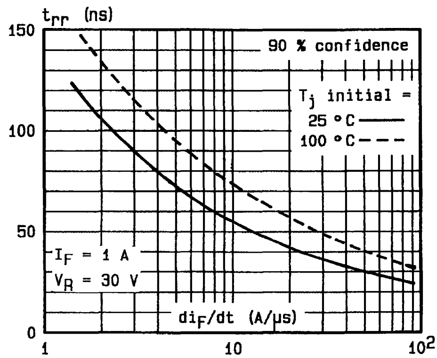


Fig.7 - Recovery time versus di_F/dt.

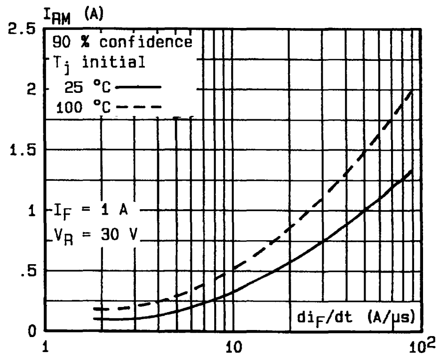


Fig.8 - Peak reverse current versus di_F/dt.

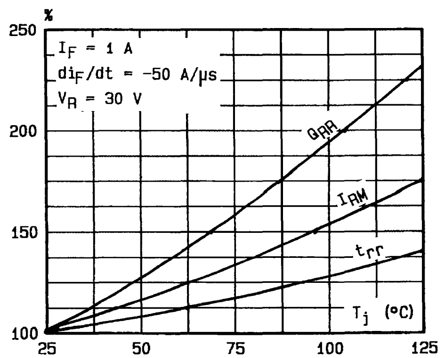


Fig.9 - Dynamic parameters versus junction temperature.

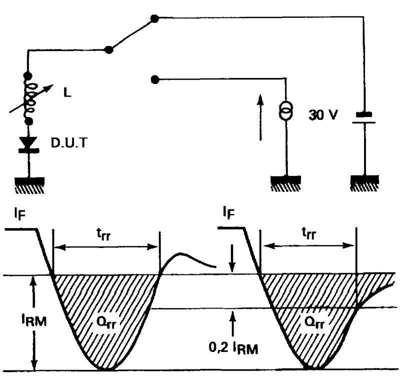
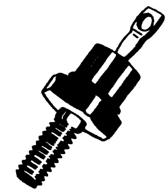


Fig.10 - Measurement of t_{rr} (Fig.7) and I_{RM} (Fig.8).

BYX 61-50 → 400

FAST RECOVERY RECTIFIER DIODES

- VERY FAST RECOVERY TIME
- VERY LOW FORWARD RECOVERY TIME
- VERY LOW RECOVERED CHARGE



DO 4
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	130	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 100°C$	12	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	BYX 81–					Unit
		50	100	200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	2.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 100°C	$V_R = V_{RRM}$			3	mA
V_F	T_j = 25°C	I_F = 12A			1 5	V

RECOVERY CHARACTERISTICS

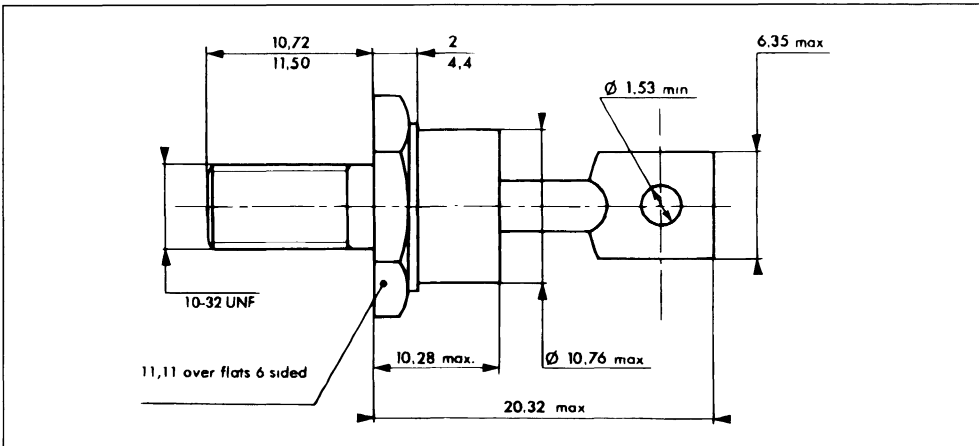
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			100	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			0.075	µC
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			1.5	A

To evaluate the conduction losses use the following equations :

$V_F = 1.15 + 0.015\ I_F$ $\qquad$ $P = 1.5 \times I_{F(AV)} + 0.015\ I_{F}^{2}{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 4 Metal



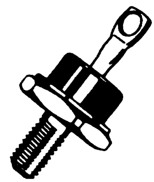
Cooling method by conduction (method C)
Marking Cathode connected to case type number
Anode connected to case type number + suffix R (consult us for these reserve version datasheets)
Weight 5 1g
Recommended torque value 180cm N
Maximum torque value 220cm N

SGS-THOMSON
MICROELECTRONICS

BYX 65-50 → 400

FAST RECOVERY RECTIFIER DIODES

- VERY FAST RECOVERY TIME
- VERY LOW FORWARD RECOVERY TIME
- VERY LOW RECOVERED CHARGE



DO 5
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	250	A
$I_{F(AV)}$	Average Forward Current	$T_C = 100°C$	30	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	300	A
P_{tot}	Power Dissipation	$T_C = 100°C$	50	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 150	°C

Symbol	Parameter	BYX 65–					Unit
		50	100	200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	1	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
I_R	$T_j = 100°C$ $V_R = V_{RRM}$			10	mA
V_F	$T_j = 25°C$ $I_F = 30A$			1.5	V

RECOVERY CHARACTERISTICS

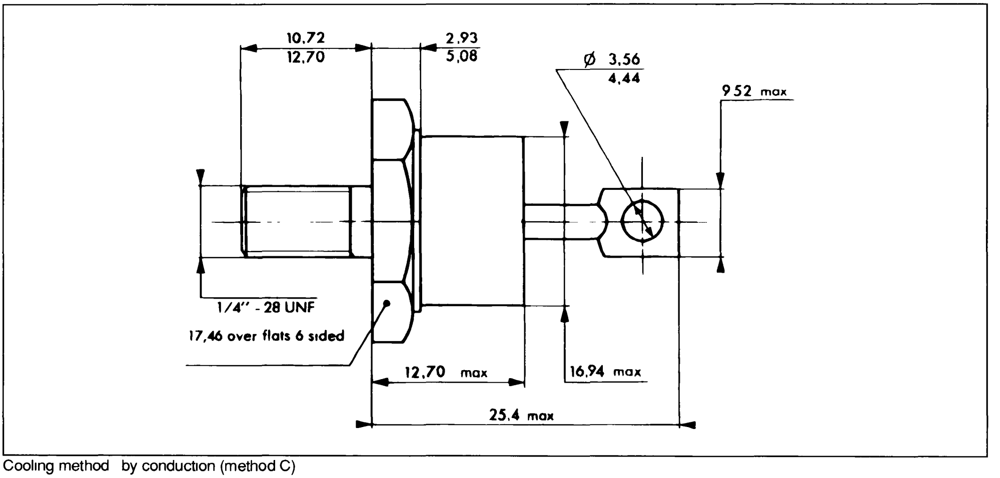
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			100	ns
Q_{rr}	$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			0.075	µC
I_{RM}	$T_j = 25°C$ $I_F = 1A$ $dI_F/dt = -15A/\mu s$ $V_R = 30V$			1 5	A

To evaluate the conduction losses use the following equations :

$V_F = 1.15 + 0.008\ I_F$ $\qquad$ $P = 1.15 \times I_{F(AV)} + 0.008\ I_F^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



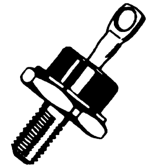
Cooling method by conduction (method C)
Marking Cathode connected to case type number
Anode connected to case type number + suffix R (consult us for these reverse version datasheets)
Weight 18 84g
Recommended torque value 250cm N
Maximum torque value 310cm N

SGS-THOMSON MICROELECTRONICS

ESM243-50 → 400

FAST RECOVERY RECTIFIER DIODES

- VERY FAST RECOVERY TIME
- HIGH SURGE CURRENT CAPABILITY
- VERY LOW FORWARD RECOVERY TIME
- VERY LOW RECOVERED CHARGE



DO 5
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F(AV)}$	Average Forward Current	$T_C = 90°C$	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	800	A
P_{tot}	Power Dissipation	$T_C = 90°C$	110	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 165	°C

Symbol	Parameter	ESM 243-					Unit
		50	100	200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	0.7	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
I_R	T_j = 100°C $V_R = V_{RRM}$			10	mA
V_F	T_j = 25°C I_F = 60A			1.5	V

RECOVERY CHARACTERISTICS

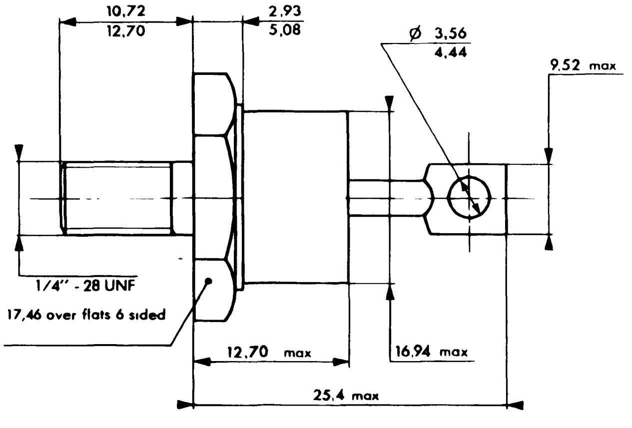
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			100	ns
Q_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			0.075	µC
I_{RM}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			1.5	A

To evaluate the conduction losses use the following equations :

$V_F = 1.15 + 0.004\ I_F$ $P = 1.15 \times I_{F(AV)} + 0.004\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal

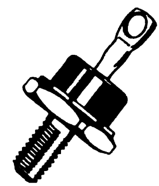


Cooling method . by conduction (method C)
Marking Cathode connected to case type number
Anode connected to case . type number + suffix R (consult us for these reverse version datasheets)
Weight 18 84g
Recommended torque value 250cm N
Maximum torque value 310cm N

ESM 244-50 → 600

FAST RECOVERY RECTIFIER DIODES

- FAST RECOVERY TIME
- LOW FORWARD RECOVERY TIME
- HIGH SURGE CURRENT CAPABILITY
- AVAILABLE UP TO 600V



DO 5
(Metal)

APPLICATIONS

- DC AND AC MOTOR CONTROL
- SWITCHMODE POWER SUPPLY
- HIGH FREQUENCY CHOPPERS
- HIGH FREQUENCY RECTIFIERS

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	500	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 90°C$	60	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	800	A
P_{tot}	Power Dissipation	$T_C = 90°C$	110	W
T_{stg} T_j	Storage and Junction Temperature Range		– 65 to 165	°C

Symbol	Parameter	ESM 244-							Unit
		50	100	200	300	400	500	600	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-c)}$	Junction-case	0.7	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 100°C	$V_R = V_{RRM}$			6	mA
V_F	T_j = 25°C	I_F = 60A			1.5	V

RECOVERY CHARACTERISTICS

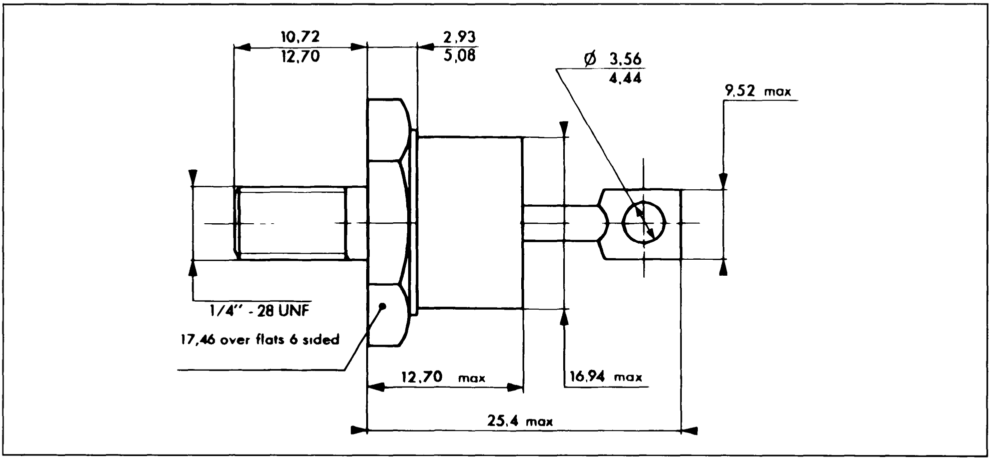
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			200	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			0.3	µC
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			3	A

To evaluate the conduction losses use the following equations :

$V_F = 1.15 + 0.004\ I_F$ $\quad\quad$ $P = 1.15 \times I_{F(AV)} + 0.004\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 5 Metal



Cooling method by conduction (method C)
Marking Cathode connected to case type number
Anode connected to case type number + suffix R (consult us for these reverse version datasheets)
Weight 18 84g
Recommended torque value 250cm N
Maximum torque value 310cm N

SGS-THOMSON
MICROELECTRONICS

ESM 765-100 A → 800 A

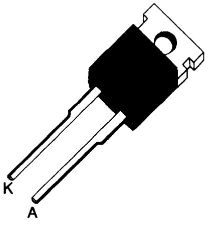
FAST RECOVERY RECTIFIER DIODES

- HIGH VOLTAGE CAPABILITY
- FAST AND SOFT RECOVERY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF THE trr AND I_{RM} AT 100°C UNDER USERS CONDITIONS

APPLICATIONS

- MOTOR CONTROLS AND CONVERTERS
- SWITCHMODE POWER SUPPLIES

Cathode connected to case



DO 220 AB
(Plastic)

DESCRIPTION

Fast recovery rectifiers suited for applications in combination with superswitch transistors

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	120	A
$I_{F\,(RMS)}$	RMS Forward Current		16	A
$I_{F\,(AV)}$	Average Forward Current	$T_C = 100°C$ $\delta = 0.5$	10	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	120	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	ESM 765–					Unit
		100 A	200 A	400 A	600 A	800 A	
V_{RRM}	Repetitive Peak Reverse Voltage	100	200	400	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	100	200	400	600	800	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j\text{-}c)}$	Junction-case	3.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	μA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 10A			1.4	V
	T_j = 100°C				1.35	

RECOVERY CHARACTERISTICS

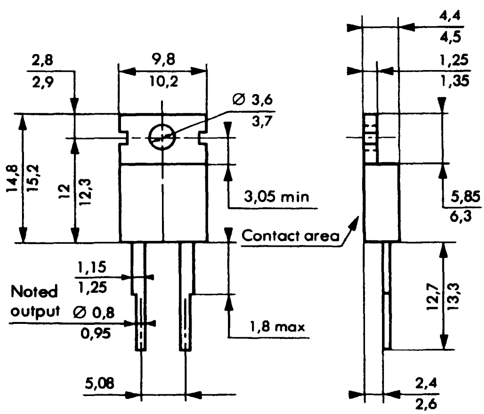
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A dI_F/dt = – 15A/μs V_R = 30V			300	ns
Q_{rr}	T_j = 25°C I_F = 10A dI_F/dt = – 50A/μs V_R = 200V		2.3		μC

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.015\ I_F$ $\quad\quad$ $P = 1.2 \times I_{F(AV)} + 0.015\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Cooling method by conduction (method C)
Marking type number
Weight 2 4g
Recommended torque value · 80cm N
Maximum torque value · 100cm N

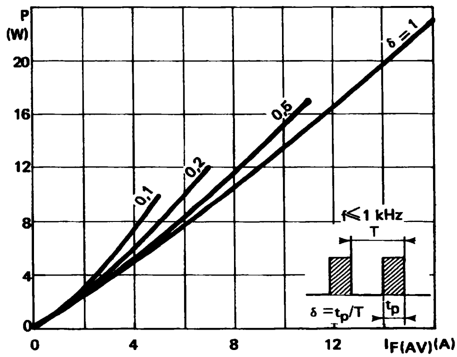


FIGURE 1: Low frequency power losses versus average current

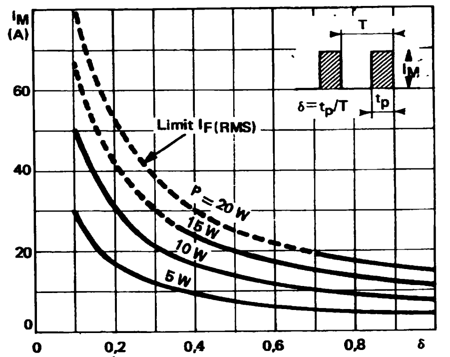


FIGURE 2: Peak current versus form factor

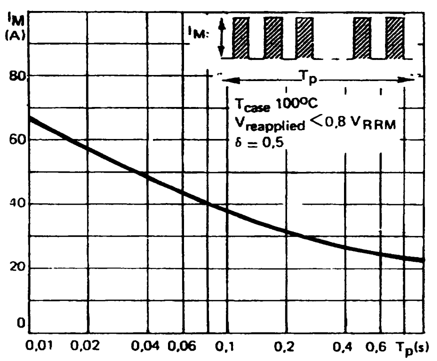


FIGURE 3: Non repetitive peak surge current versus overload duration

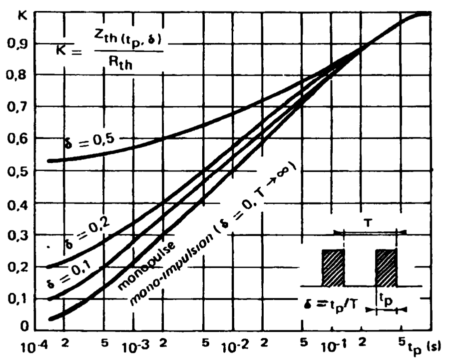


FIGURE 4: Thermal impedance versus pulse width

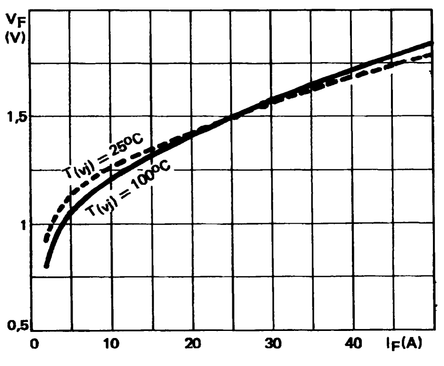


FIGURE 5: Forward voltage drop versus forward current

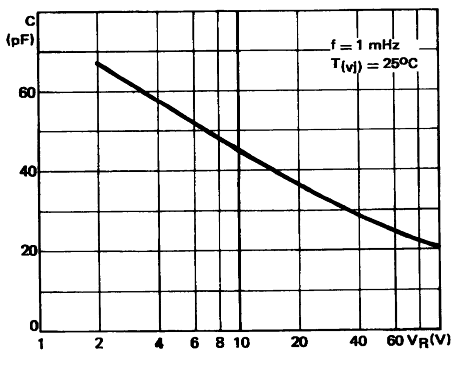


FIGURE 6: Capacitance versus applied reverse voltage

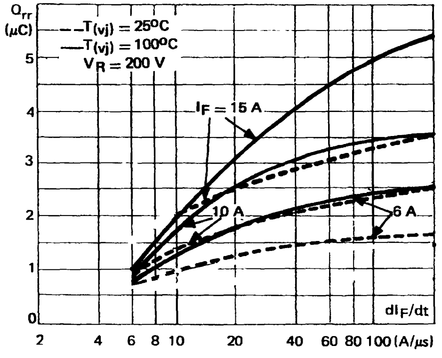


FIGURE 7: Recovery charge versus dI_F/dt

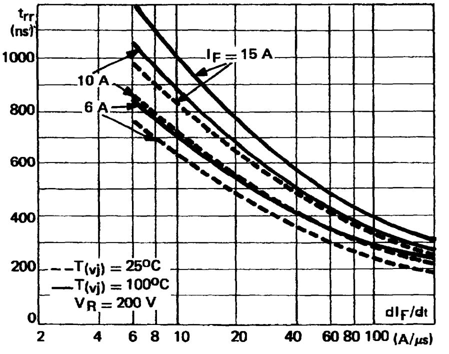


FIGURE 8:Recovery time versus dI_F/dt

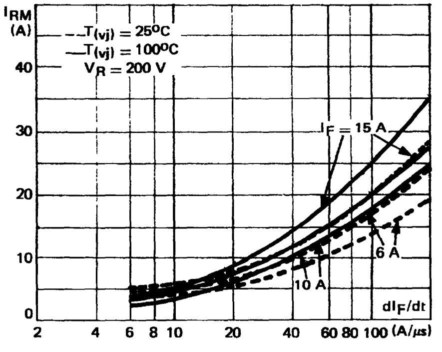
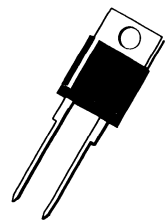


FIGURE 9: Peak reverse current versus dI_F/dt

FAST RECOVERY RECTIFIER DIODES

- HIGH VOLTAGE CAPABILITY
- FAST AND SOFT RECOVERY
- THE SPECIFICATIONS AND CURVES ENABLE THE DETERMINATION OF t_{rr} AND I_{RM} AT 100°C UNDER USERS CONDITIONS
- INSULATED

Insulating voltage 2500 V_{RMS}



DO 220 AB
(Plastic)

APPLICATIONS

- MOTOR CONTROLS AND CONVERTERS
- SWITCHMODE POWER SUPPLIES

DESCRIPTION

Fast recovery rectifiers suited for applications in combination with superswitch transistors.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	120	A
$I_{F\ (RMS)}$	RMS Forward Current		16	A
$I_{F\ (AV)}$	Average Forward Current	$T_C = 100°C$ $\delta = 0.5$	10	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	120	A
P_{tot}	Power Dissipation	$T_C = 100°C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	ESM 765PI–		Unit
		600	800	
V_{RRM}	Repetitive Peak Reverse Voltage	600	800	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	600	800	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-c)}$	Junction-case	3.5	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				1	mA
V_F	T_j = 25°C	I_F = 10A			1.4	V
	T_j = 100°C				1.35	

RECOVERY CHARACTERISTICS

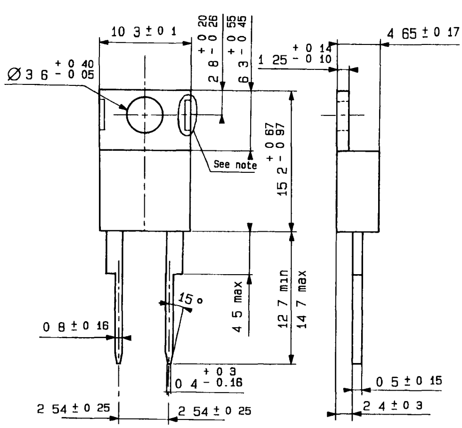
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_F = 1A di_F/dt = – 15A/µs V_R = 30V			300	ns
Q_{rr}	T_j = 25°C I_F = 10A di_F/dt = – 50A/µs V_R = 200V		2.3		µC

To evaluate the conduction losses use the following equations :

$V_F = 1.2 + 0.015\ I_F$ $\qquad P = 1.2 \times I_{F(AV)} + 0.015\ I_{F\,(RMS)}^2$

PACKAGE MECHANICAL DATA

DO 220 AB Plastic



Note SGS-THOMSON reserves the right to have two notches on the heatsink

Cooling method · by conduction (method C)
Marking · type number
Weight . 2g
Recommended torque value 80cm. N
Maximum torque value · 100cm. N

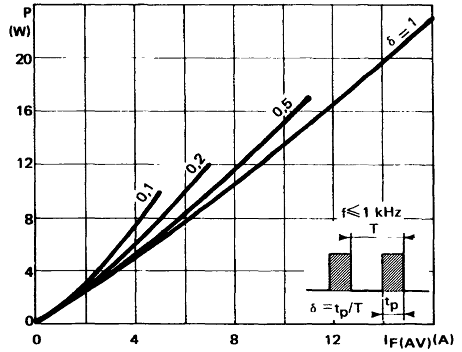


FIGURE 1: Low frequency power losses versus average current

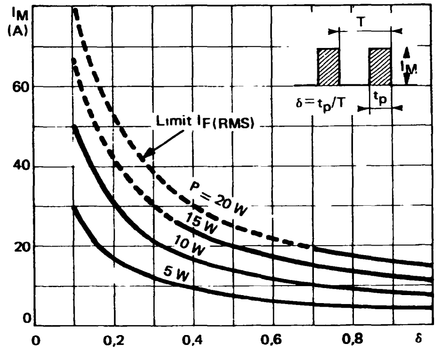


FIGURE 2: Peak current versus form factor

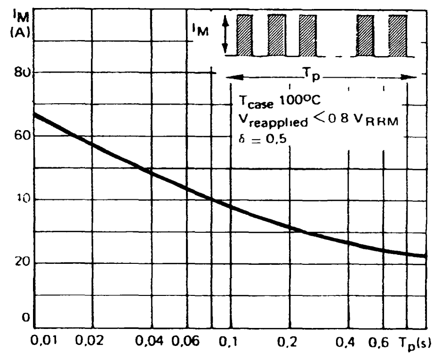


FIGURE 3: Non repetitive peak surge current versus overload duration

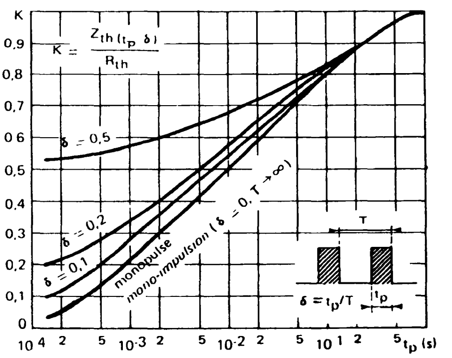


FIGURE 4: Thermal impedance versus pulse width

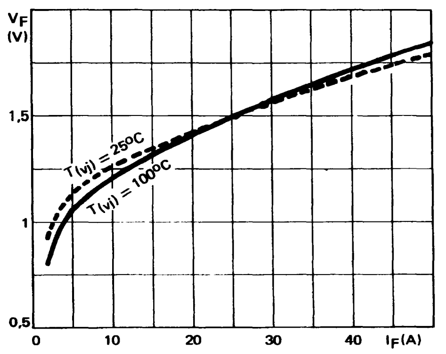


FIGURE 5: Forward voltage drop versus forward current

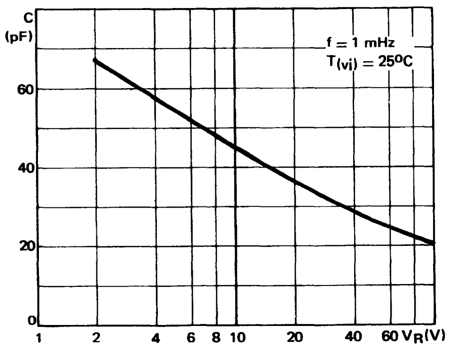


FIGURE 6: Capacitance versus applied reverse voltage

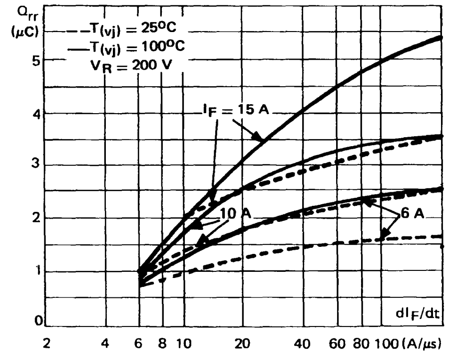


FIGURE 7: Recovery charge versus dI$_F$/dt

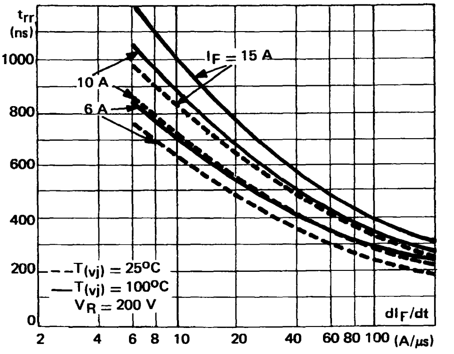


FIGURE 8: Recovery time versus dI$_F$/dt

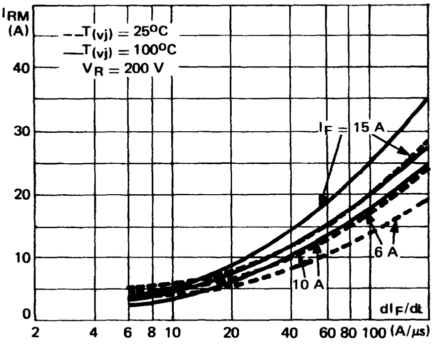


FIGURE 9: Peak reverse current versus dI$_F$/dt

SGS-THOMSON MICROELECTRONICS

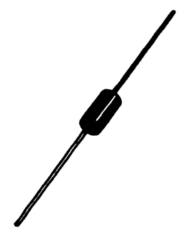
PFR 305/PFR 310

FAST RECOVERY RECTIFIER DIODES

- LOW FORWARD VOLTAGE DROP
- HIGH SURGE CURRENT CAPABILITY

APPLICATIONS

- AC-DC POWER SUPPLIES AND CONVERTERS
- CHOPPERS
- FREE WHEELING DIODES, etc.



DO 27 A
(Plastic)

DESCRIPTION

Their high efficiency and high reliability combined with small size and low cost make these fast recovery diodes very attractive components for many demanding applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	70	A
$I_{F\,(AV)}$	Average Forward Current*	$T_a = 90°C$ $\delta = 0.5$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	135	A
P_{tot}	Power Dissipation*	$T_a = 90°C$	3	W
T_{stg} T_j	Storage and Junction Temperature Range		– 55 to 150	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	PFR 305	PFR 310	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-a)}$	Junction-ambient*	20	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				200	
V_F	T_j = 25°C	I_F = 3A			1	V

RECOVERY CHARACTERISTICS

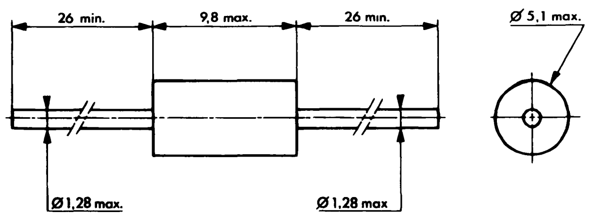
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C I_{rr} = 0.25A	I_F = 0.5A	I_R = 1A			50	ns

To evaluate the conduction losses use the Following equations :

$V_F = 0.75 + 0.035\ I_F$ $\quad P = 0.75 \times I_{F(AV)} + 0.035\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

DO 27A Plastic



Cooling method . by convection (method A)
Marking · type number, white band indicate cathode
Weight . 1g

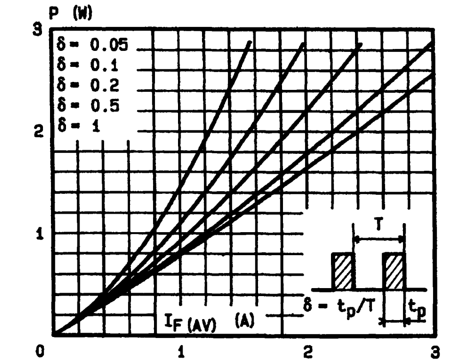


Fig.1 - Maximum average power dissipation versus average forward current.

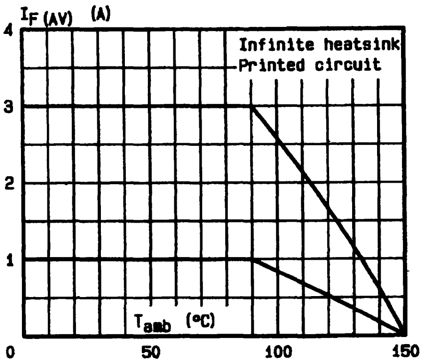


Fig.2 - Average forward current versus ambient temperature.

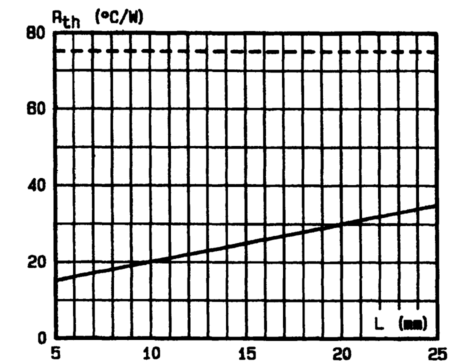
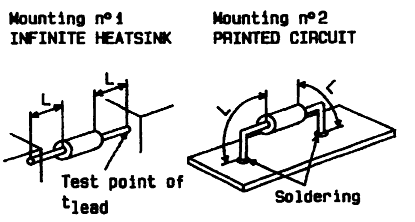


Fig.3 - Thermal resistance versus lead length.



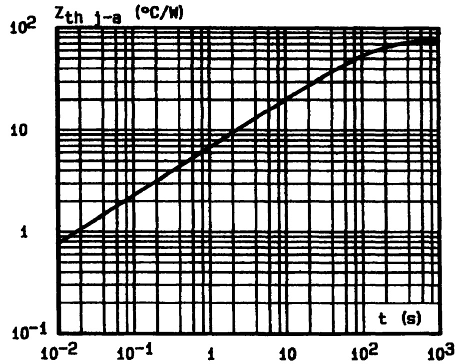


Fig.4 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

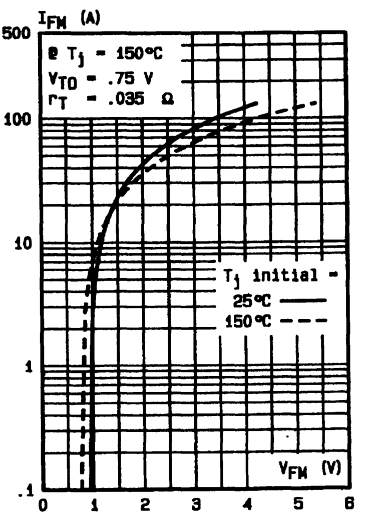


Fig.5 - Peak forward current versus peak forward voltage drop (maximum values).

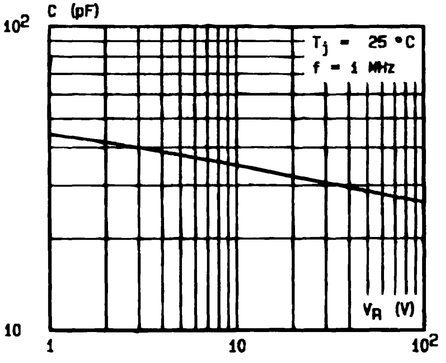


Fig.6 - Capacitance versus reverse applied voltage

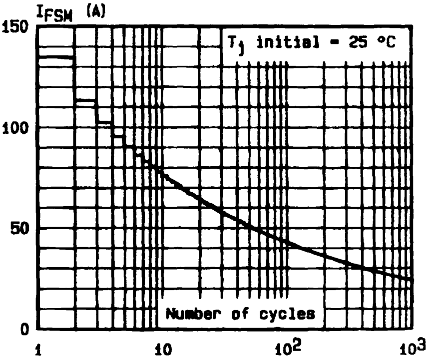


Fig.7 - Non repetitive surge peak current versus number of cycles

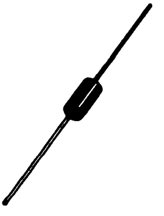
PFR 850 → 856

FAST RECOVERY RECTIFIER DIODES

- LOW FORWARD VOLTAGE DROP
- HIGH SURGE CURRENT CAPABILITY

APPLICATIONS

- AC-DC POWER SUPPLIES AND CONVERTERS
- FREE WHEELING DIODES, etc.



DO 27 A
(Plastic)

DESCRIPTION

Their high efficiency and high reliability combined with small size and low cost make these fast recovery rectifier diodes very attractive components for many demanding applications.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \le 20\mu s$	100	A
$I_{F(AV)}$	Average Forward Current*	$T_a = 90°C$	3	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	150	A
P_{tot}	Power Dissipation*	$T_a = 90°C$	3.5	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 175	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	PFR					Unit
		850	851	852	854	856	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	200	400	600	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	75	150	250	450	650	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-a)}$	Junction-ambient*	25	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

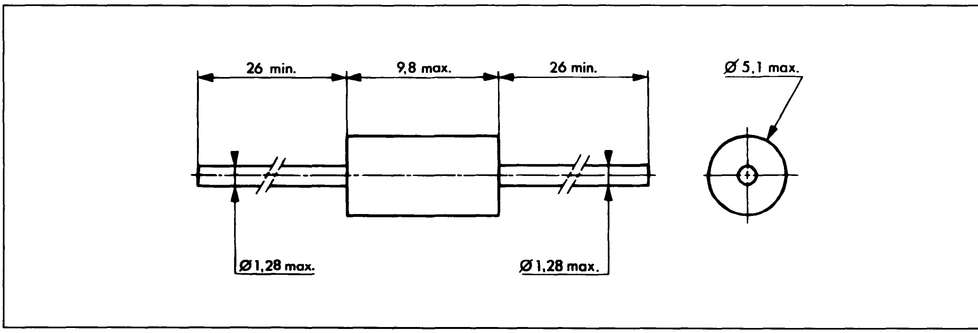
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	μA
	T_j = 100°C				500	
V_F	T_j = 25°C	I_F = 3A			1.25	V

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C	I_F = 1A	PFR 850 → 854			150	ns
	V_R = 30V	d_{IF}/dt = – 25A/μs	PFR 856			200	
I_{RM}	T_j = 25°C V_R = 30V	I_F = 1A d_{IF}/dt = – 25A/μs				2	A

PACKAGE MECHANICAL DATA

DO 27 A (Plastic)



Cooling method by convection (method A)
Marking · type number, white band indicate cathode
Weight · 1g

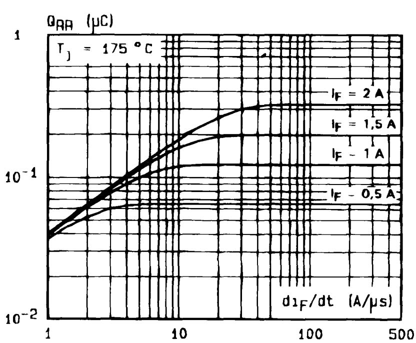
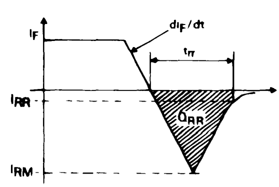


Fig.1 Recovered charge versus d_{IF}/dt (typical values)



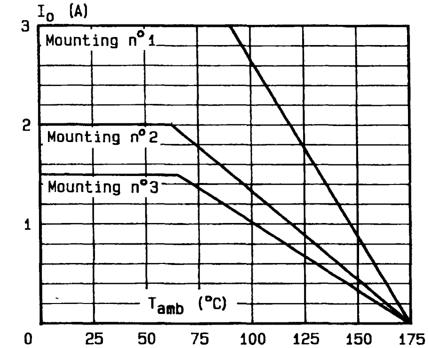


Fig.2 - Mean forward current I_O versus ambient temperature (maximum values).

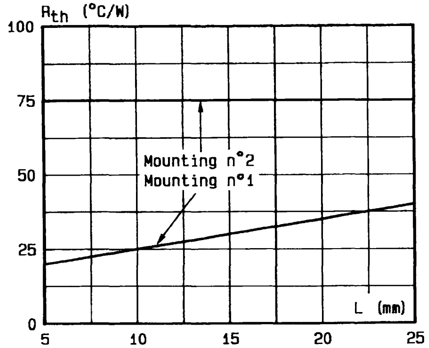
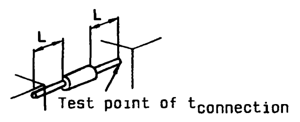
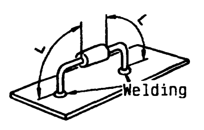


Fig.3 - Thermal resistance versus lead length (maximum values).

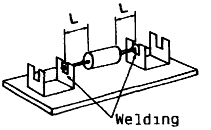
Mounting n°1 : INFINITE HEATSINK



Mounting n°2 : PRINTED CIRCUIT



Mounting n°3 :
L = 10 mm
R_{th} = 55 °C/W



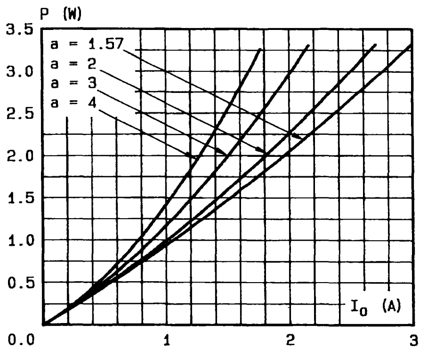


Fig.4 - Mean power dissipation versus mean forward current I for different rectifying types, in the case of :
- a resistive load (a = 1.57)
- a capacitive load (a > 1.57)

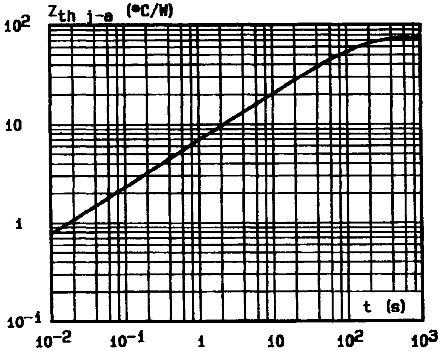


Fig.5 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm)

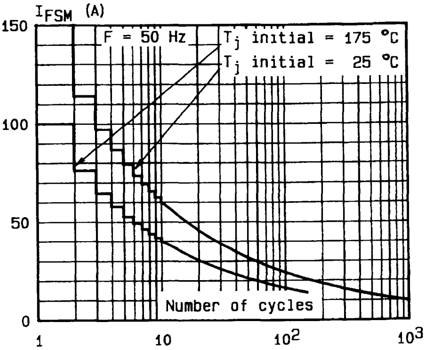
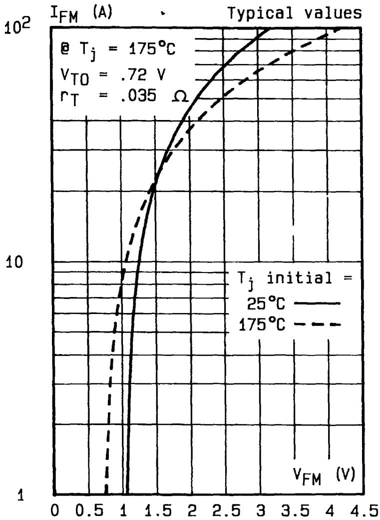


Fig.6 - Non repetitive surge peak forward current versus number of cycles.



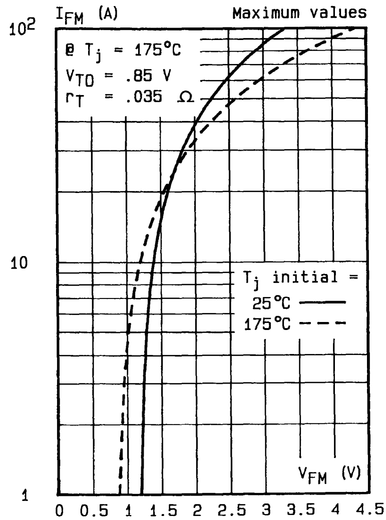


Fig.3a/3b - Peak forward current versus peak forward voltage drop.

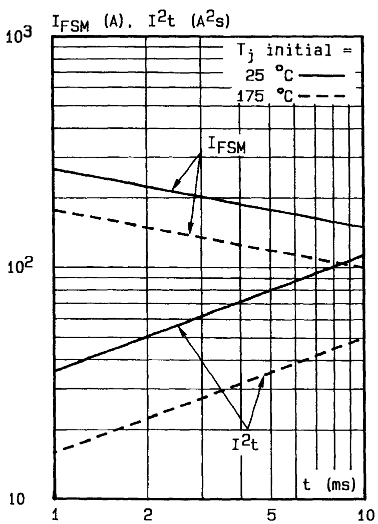


Fig.8 - Non repetitive surge peak forward current for a sinusoidal pulse with width : t ⩽ 10 ms, and corresponding value of I^2t.

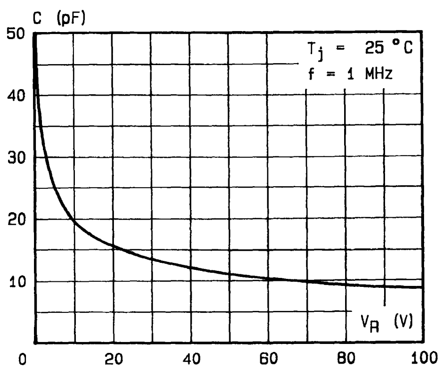
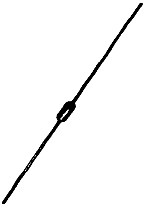


Fig.9 - Capacity C versus reverse applied voltage V_R (typical values).

FAST RECOVERY RECTIFIER DIODES

- VERY FAST FORWARD AND REVERSE RECOVERY DIODES



F 126
(Plastic)

SUITED FOR
- SWITCHING POWER TRANSISTORS DRIVER CIRCUITS (SERIES DIODES IN ANTISATURATION CLAMP SPEED UP DIODE IN DISCRETE DARLINGTON...)
- THYRISTORS GATE DRIVER CIRCUITS
- HIGH FREQUENCY RECTIFICATION

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 20\mu s$	20	A
$I_{F\ (AV)}$	Average Forward Current	$T_a = 25°C$ $\delta = 0.5$	1	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	20	A
P_{tot}	Power Dissipation*	$T_a = 25°C$	1.7	W
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 125	°C
T_L	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	°C

Symbol	Parameter	PLQ 08	PLQ 1	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	80	100	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	80	100	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-a)}$	Junction-ambient*	60	°C/W

* On infinite heatsink with 10mm lead length

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

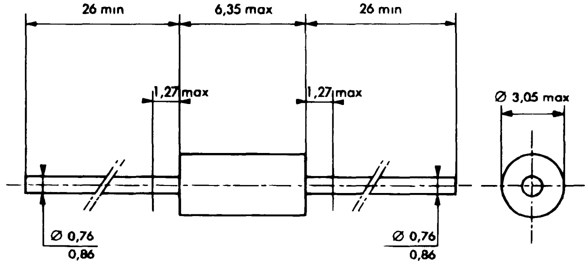
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			10	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 1A			1.1	V

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A See figure 12	di_F/dt = – 50A/µs			50	ns
t_{fr}	T_j = 25°C Measured at 1.1 x V_F	I_F = 1A	t_r = 20ns			50	ns

PACKAGE MECHANICAL DATA

F 126 (Plastic)



Cooling method . by convection (method A)
Marking type number
Weight 0 4g

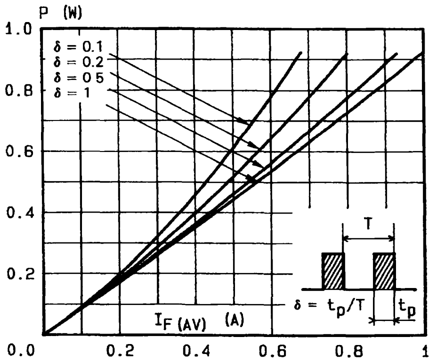


FIGURE 1 : Power losses versus average current.

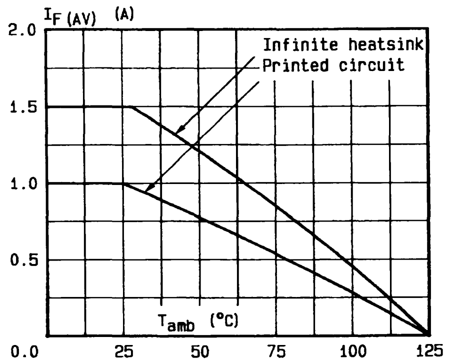


FIGURE 2 : Allowable DC current versus ambient temperature.

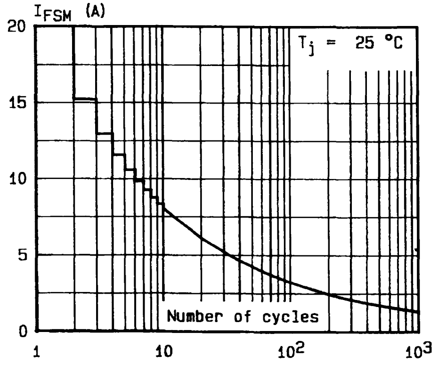


FIGURE 3 : Non repetitive surge peak current versus number of cycles.

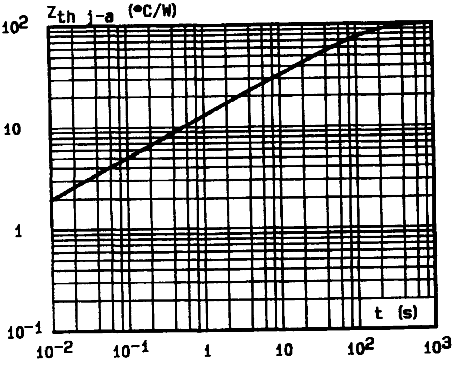


Fig.4 - Transient thermal impedance junction-ambient Printed circuit versus pulse duration (L = 10 mm).

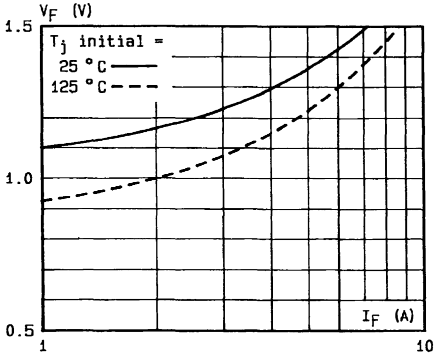


FIGURE 5 : Voltage drop versus forward current.

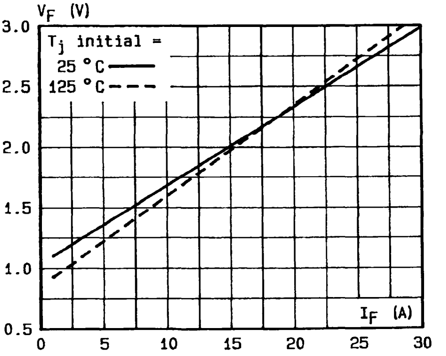


FIGURE 6 : Voltage drop versus forward current.

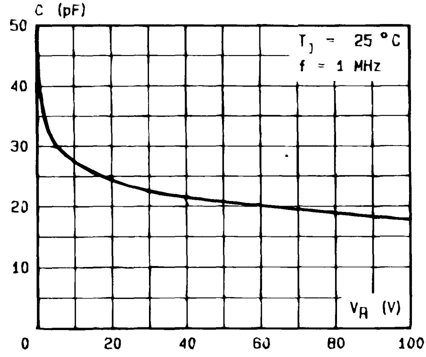


FIGURE 7 : Capacitance versus reverse voltage applied.

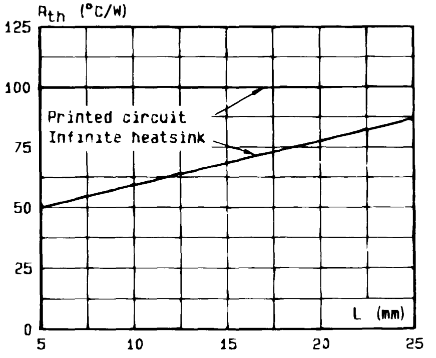


FIGURE 8 : Thermal resistance junction-ambient versus lead length.

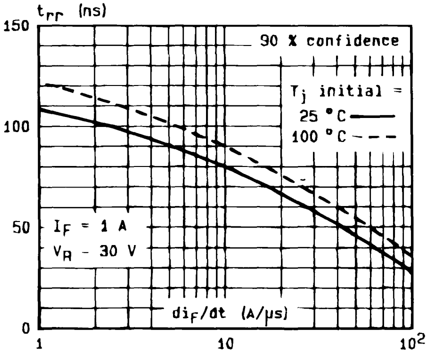


FIGURE 9 : Recovery time versus di_F/dt.

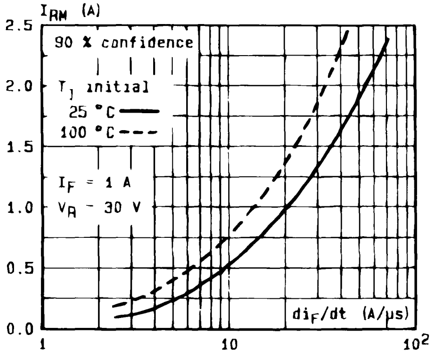


FIGURE 10 : Peak reverse current versus di_F/dt.

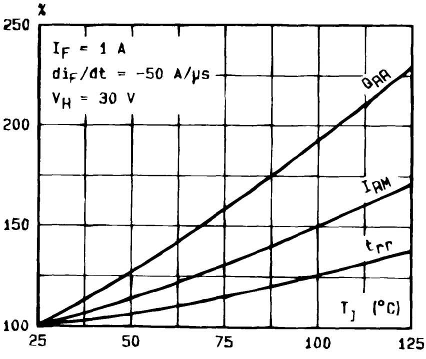


FIGURE 11 : Dynamic parameters versus junction temperature.

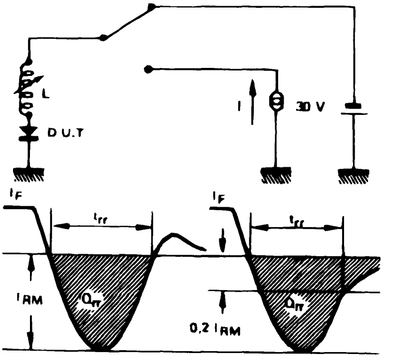


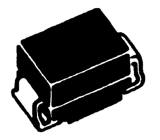
FIGURE 12 : Measurement of t_{rr} (fig.9) and I_{RM} (fig.10).

SMBYT 01

FAST RECOVERY RECTIFIER DIODES

TENTATIVE DATA

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING
- LOW THERMAL RESISTANCE



SOD 6
(plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F(AV)}$	Average Forward Current	T_L = 110°C δ = 0.5	1	A
I_{FSM}	Non Repetitive Surge Peak Forward Current	t_p = 10ms Sinusoïdal	30	A
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	SMBYT01-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	25	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 1A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 15A/µs			55	ns
	T_j = 25°C I_{rr} = 0.25A	I_F = 0.5A	I_R = 1A			25	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

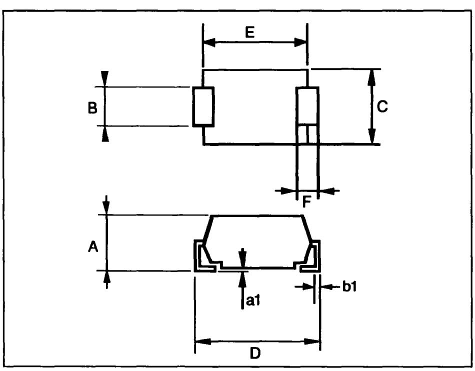
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{IRM}	T_j = 100°C	I_F = 1A	di_F/dt = – 50A/µs		35	50	ns
I_{RM}	V_{CC} = 200V	L_P < 0.05µH			1.5	2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.25\ I_F$ $\qquad$ $P = 1.1 \times I_{F(AV)} + 0.25\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

SOD 6 plastic

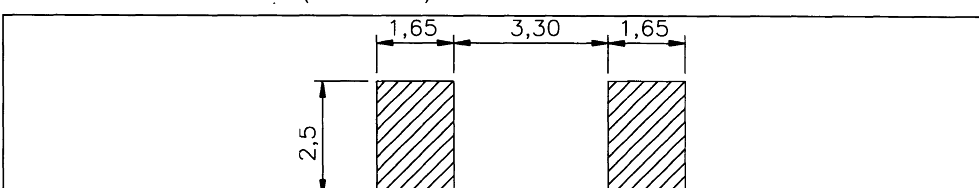


Ref.	Millimetres		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.10	2.30	0.082	0.090
b1	0.29	0.32	0.011	0.012
C	3.80	4.20	0.149	0.165
D	6.00	6.40	0.236	0.252
E	4.70	5.00	0.185	0.196
F	0.90	1.30	0.035	0.051

Voltage (V)	200	300	400
Marking	B2	B3	B4

Laser marking
Logo indicates cathode

FOOT PRINT DIMENSIONS (Millimeters)



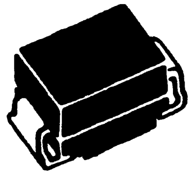
SGS-THOMSON MICROELECTRONICS

SMBYT03

FAST RECOVERY RECTIFIER DIODES

TENTATIVE DATA

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHINg
- LOW THERMAL RESISTANCE



SOD 15
(plastic)

SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS
- RECTIFIER IN S.M.P.S.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F\ (AV)}$	Average Forward Current	T_L = 55°C δ = 0.5	3	A
I_{FSM}	Non Repetitive Surge Peak Forward Current	t_p = 10ms Sinusoidal	60	A
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	SMBYT03-			Unit
		200	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	20	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 3A			1.5	V
	T_j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	dI_F/dt = – 15A/µs			55	ns
	T_j = 25°C I_{rr} = 0.25A	I_F = 0.5A	I_R = 1A			25	

TURN-OFF SWITCHING CHARACTERISTICS (without series inductance)

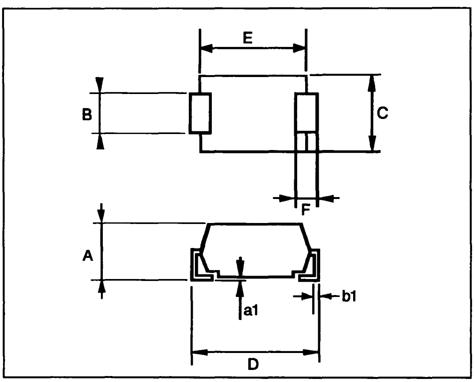
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{IRM}	T_j = 100°C V_{CC} = 200V	I_F = 3A L_P < 0.05µH	dI_F/dt = – 50A/µs		35	50	ns
I_{RM}					1.5	2	A

To evaluate the conduction losses use the following equations :

$V_F = 1.1 + 0.08\ I_F$ $P = 1.1 \times I_{F(AV)} + 0.08\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

SOD 15 plastic

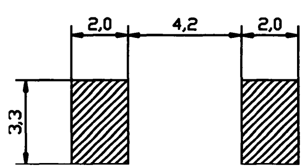


Ref.	Millimetres		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.90	3.10	0.114	0.122
b1	0.29	0.32	0.011	0.012
C	4.80	5.20	0.189	0.204
D	7.60	8.00	0.299	0.315
E	6.30	6.60	2.248	0.259
F	1.30	1.70	0.051	0.066

Voltage (V)	200	300	400
Marking	C2	C3	C4

Laser marking
Logo indicates cathode

FOOT PRINT DIMENSIONS (Millimeters)

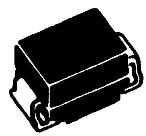


HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

TENTATIVE DATA

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- LOW THERMAL RESISTANCE

SUITABLE APPLICATIONS
- SWITCHMODE BASE DRIVE AND TRANSISTOR CIRCUITS



SOD 6
(plastic)

DESCRIPTION

Low voltage drop fast rectifiers.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F\,(AV)}$	Average Forward Current	$T_L = 100°C$ $\delta = 0.5$	2	A
I_{FSM}	Non Repetitive Surge Peak Forward Current	$t_p = 10ms$ Sinusoidal	50	A
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	SMBYW02-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\,(j-l)}$	Junction-leads	25	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 6A			1.25	V
	T_j = 100°C	I_F = 2A			0.85	

RECOVERY CHARACTERISTICS

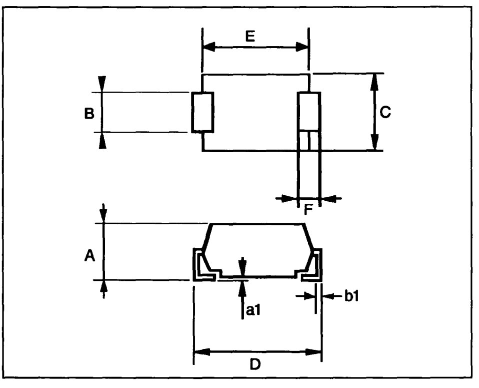
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 2A	di_F/dt = – 20A/µs		15		nC
t_{fr}	T_j = 25°C Measured at 1.1xV_F	I_F = 1A	t_r = 10ns		30		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 10ns		5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.7 + 0.075\ I_F$ $\qquad$ $P = 0.7 \times I_{F(AV)} + 0.075\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

SOD 6 plastic

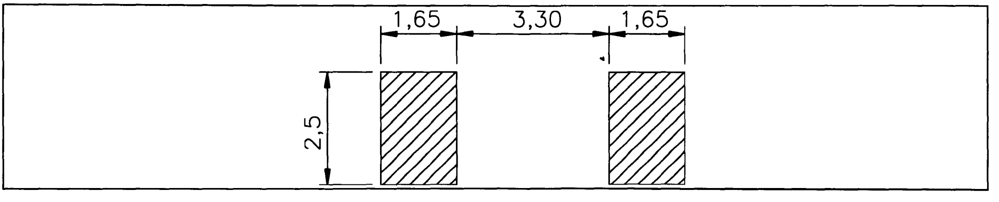


Ref.	Millimetres		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.10	2.30	0.082	0.090
b1	0.29	0.32	0.011	0.012
C	3.80	4.20	0.149	0.165
D	6.00	6.40	0.236	0.252
E	4.70	5.00	0.185	0.196
F	0.90	1.30	0.035	0.051

Voltage (V)	50	100	150	200
Marking	A05	A10	A15	A20

Laser marking
Logo indicates cathode

FOOT PRINT DIMENSIONS (Millimeters)



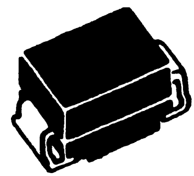
SGS-THOMSON MICROELECTRONICS

SMBYW04

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

TENTATIVE DATA

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES
- LOW THERMAL RESISTANCE



SOD 15
(plastic)

SUITABLE APPLICATIONS
- SWITCHMODE BASE DRIVE AND TRANSISTOR CIRCUITS

DESCRIPTION
Low voltage drop fast rectifiers.

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(RMS)}$	RMS Forward Current		10	A
$I_{F\ (AV)}$	Average Forward Current	$T_L = 70°C$ $\delta = 0.5$	4	A
I_{FSM}	Non Repetitive Surge Peak Forward Current	$t_p = 10ms$ Sinusoidal	70	A
T_{stg} T_j	Storage and Junction Temperature Range		– 40 to 150	°C

Symbol	Parameter	SMBYW04-				Unit
		50	100	150	200	
V_{RRM}	Repetitive Peak Reverse Voltage	50	100	150	200	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction-leads	20	°C/W

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I_R	T_j = 25°C	$V_R = V_{RRM}$			20	µA
	T_j = 100°C				0.5	mA
V_F	T_j = 25°C	I_F = 12A			1.25	V
	T_j = 100°C	I_F = 4A			0.85	

RECOVERY CHARACTERISTICS

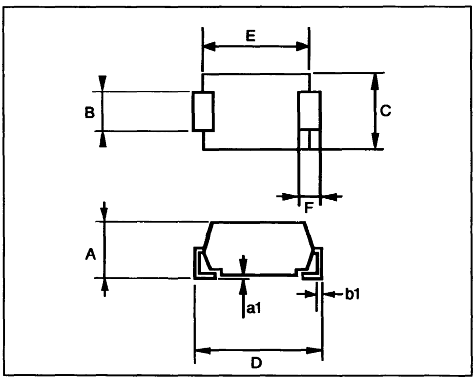
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t_{rr}	T_j = 25°C V_R = 30V	I_F = 1A	di_F/dt = – 50A/µs			35	ns
Q_{rr}	T_j = 25°C V_R = 30V	I_F = 4A	di_F/dt = – 20A/µs		20		nC
t_{fr}	T_j = 25°C Measured at 1.1xV_F	I_F = 1A	t_r = 10ns		20		ns
V_{FP}	T_j = 25°C	I_F = 1A	t_r = 10ns		5		V

To evaluate the conduction losses use the following equations :

$V_F = 0.7 + 0.037\ I_F$ $\qquad$ $P = 0.7 \times I_{F(AV)} + 0.037\ I_F{}^2{}_{(RMS)}$

PACKAGE MECHANICAL DATA

SOD 15 plastic

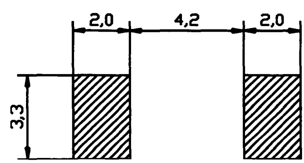


Ref.	Millimetres		Inches	
	Min.	Max.	Min.	Max.
A	2.50	3.10	0.098	0.122
a1	0.05	0.20	0.002	0.008
B	2.90	3.10	0.114	0.122
b1	0.29	0.32	0.011	0.012
C	4.80	5.20	0.189	0.204
D	7.60	8.00	0.299	0.315
E	6.30	6.60	2.248	0.259
F	1.30	1.70	0.051	0.066

Voltage (V)	50	100	150	200
Marking	D05	D10	D15	D20

Laser marking
Logo indicates cathode

FOOT PRINT DIMENSIONS (Millimeters)



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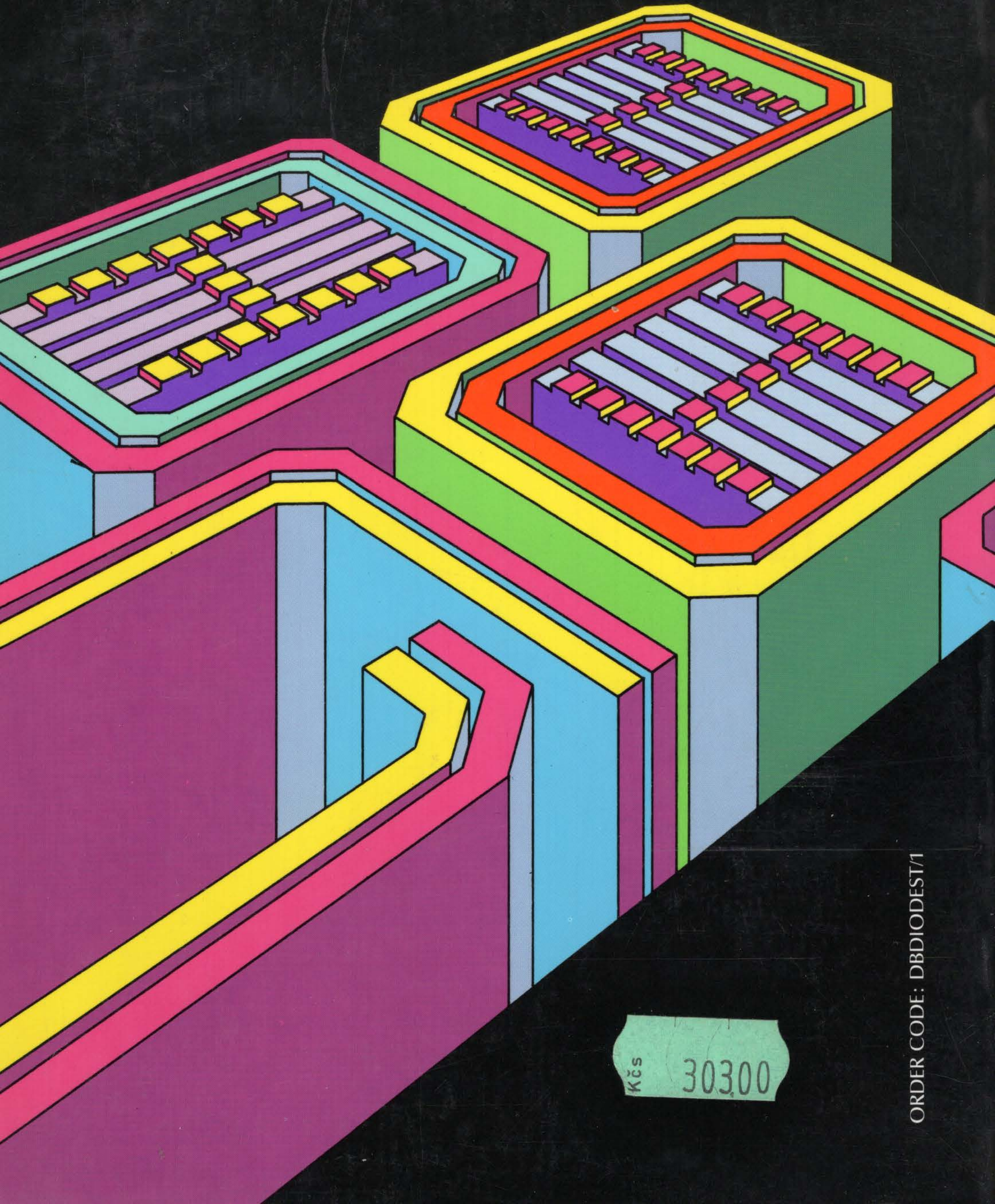

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