

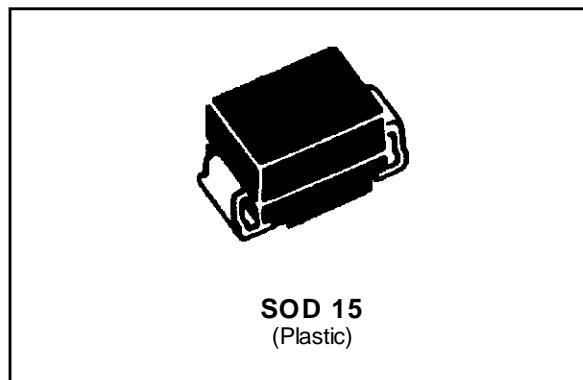
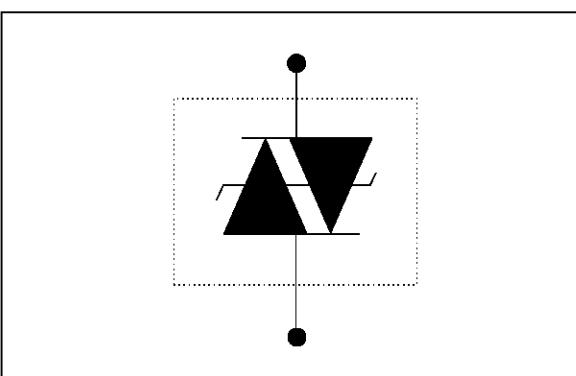
TRISIL

FEATURES

- BIDIRECTIONAL CROWBAR PROTECTION.
- BREAKDOWN VOLTAGE RANGE:
From 62 V To 270 V.
- HOLDING CURRENT = 150 mA min
- PEAK PULSE CURRENT :
 $I_{PP} = 90 \text{ A}, 10/1000 \mu\text{s}$.

DESCRIPTION

The SMTPBxx series has been designed to protect telecommunication equipment against lightning and transient induced by AC power lines.


SCHEMATIC DIAGRAM

IN ACCORDANCE WITH FOLLOWING STANDARDS :

CCITT K17 - K20	{	10/700 μs	1.5 kV
		5/310 μs	38 A
VDE 0433	{	10/700 μs	2 kV
		5/200 μs	50 A
CNET	{	0.5/700 μs	1.5 kV
		0.2/310 μs	38 A

ABSOLUTE RATINGS (limiting values) (-40°C ≤ T_{amb} ≤ + 85°C)

Symbol	Parameter	Value	Unit
P	Power dissipation on infinite heatsink	10	W
I _{PP}	Peak pulse current	90 150	A
I _{TSM}	Non repetitive surge peak on-state current	50	A
di/dt	Critical rate of rise of on-state current	100	A/ μs
dv/dt	Critical rate of rise of off-state voltage	5	KV/ μs
T _{stg} T _j	Storage and operating junction temperature range	- 40 to + 150 + 150	°C °C
T _L	Maximum lead temperature for soldering during 10 s.	+ 260	°C

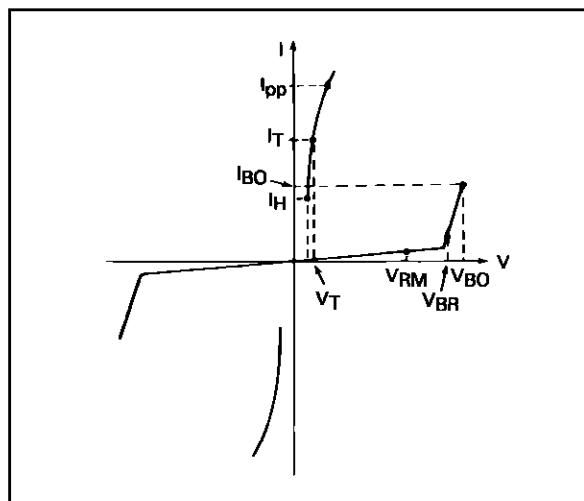
SMTPBxxx

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-l)	Junction to leads. On infinite heatsink.	10	°C/W
R _{th} (j-a)	Junction to ambient. On printed circuit with standard footprint dimensions.	75	°C/W

ELECTRICAL CHARACTERISTICS

Symbol	Parameter
V _{RM}	Stand-off voltage
V _{BR}	Breakdown voltage
V _{BO}	Breakover voltage
I _H	Holding current
V _T	On-state voltage
I _{BO}	Breakover current
I _{PP}	Peak pulse current



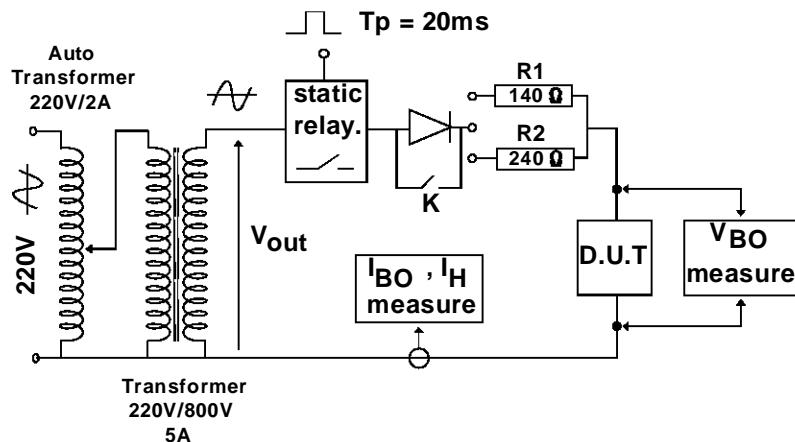
Type	Marking	I _{RM} @ V _{RM}		V _{BR} @ I _R		V _{BO} @ I _{BO}		I _H min note1	V _T max note2	C max note3
		max	min	max	min	max	min			
Laser	μA	V	V	mA	mA	mA	V	pF		
SMTPB62	W07	2	56	62	1	82	800	150	3.5	350
SMTPB68	W11	2	61	68	1	90	800	150	3.5	350
SMTPB100	W17	2	90	100	1	133	800	150	3.5	200
SMTPB120	W21	2	108	120	1	160	800	150	3.5	200
SMTPB130	W23	2	117	130	1	173	800	150	3.5	200
SMTPB180	W29	2	162	180	1	240	800	150	3.5	200
SMTPB200	W31	2	180	200	1	267	800	150	3.5	200
SMTPB220	W35	2	198	220	1	293	800	150	3.5	200
SMTPB240	W39	2	216	240	1	320	800	150	3.5	200
SMTPB270	W43	2	243	270	1	360	800	150	3.5	200

All parameters tested at 25°C, except where indicated.

Note 1 : See the reference test circuit for I_H, I_{BO} and V_{BO} parameters.

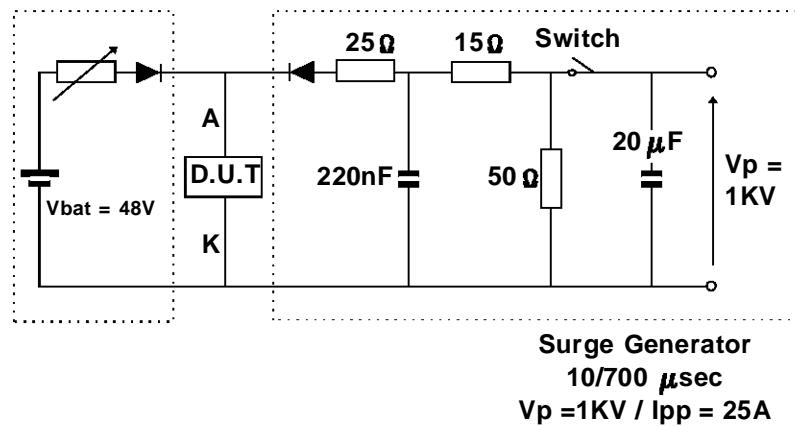
Note 2 : Squarepulse T_p = 1 ms - I_T = 5A.

Note 3 : V_R = 1V, F = 1MHz.

REFERENCE TEST CIRCUIT FOR I_H , I_{BO} and V_{BO} parameters :

TEST PROCEDURE :

- Pulse Test duration ($T_p = 20\text{ms}$):
 - For Bidirectional devices = Switch K is closed
 - For Unidirectional devices = Switch K is open.
- V_{out} Selection
 - Device with $V_{BR} \leq 150$ Volt
 - $V_{out} = 250 \text{ V}_{\text{RMS}}$, $R_1 = 140 \Omega$.
 - Device with $V_{BR} \geq 150$ Volt
 - $V_{out} = 480 \text{ V}_{\text{RMS}}$, $R_2 = 240 \Omega$.

FUNCTIONAL HOLDING CURRENT (I_H) TEST CIRCUIT = GO - NOGO TEST.

This is a GO-NOGO Test which allows to confirm the holding current (I_H) level in a functional test circuit. This test can be performed if the reference test circuit can't be implemented.

TEST PROCEDURE :

- 1) Adjust the current level at the I_H value by short circuiting the AK of the D.U.T.
- 2) Fire the D.U.T with a surge Current : $I_{pp} = 25\text{A}$, $10/700 \mu\text{s}$.
- 3) The D.U.T will come back to the OFF-State withing a duration of 50 ms max.

Figure 1 : Non repetitive surge peak on state current versus number of cycles. (with sinusoidal pluse: F= 50 Hz).

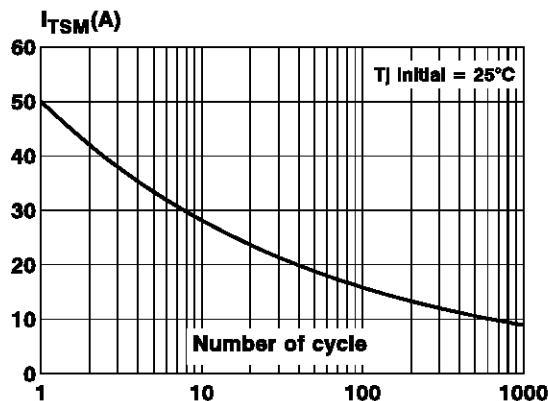


Figure 2 : On - state characteristics (typical values).

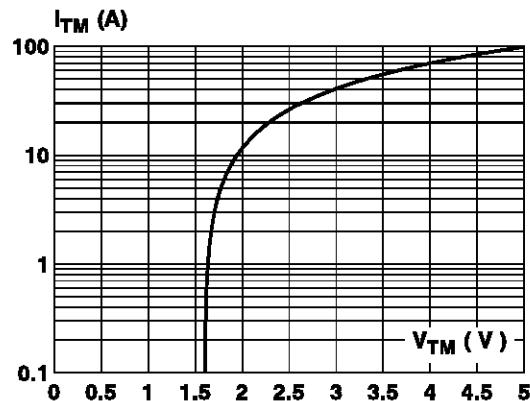
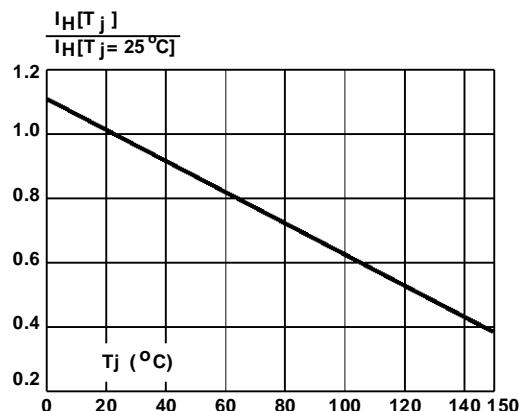
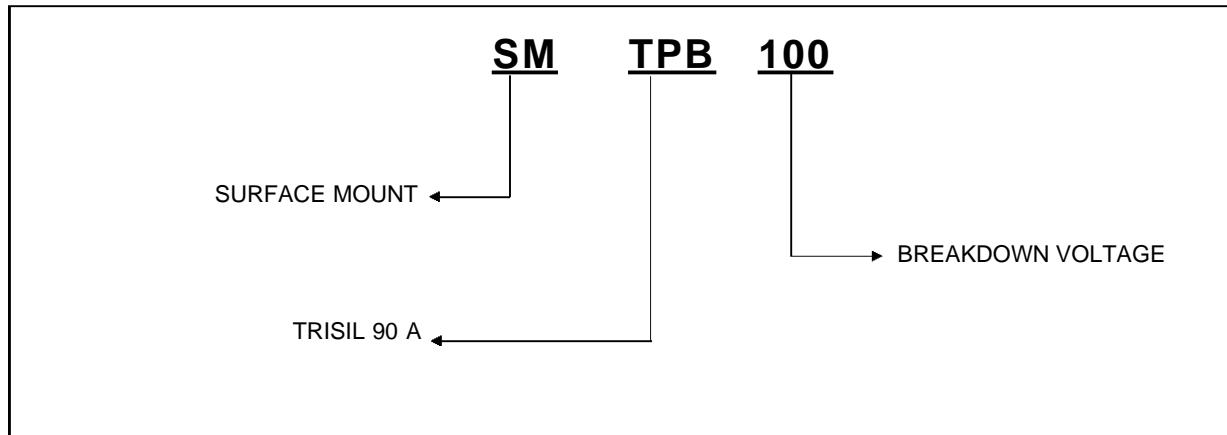


Figure 3 : Relative variation of holding current versus junction temperature.

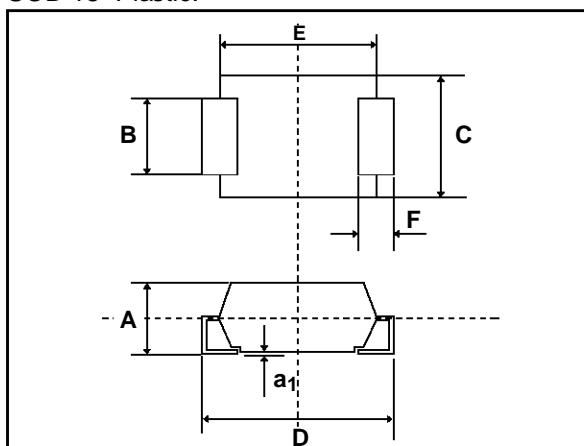


ORDER CODE

MARKING : Logo, date code, type code.

PACKAGE MECHANICAL DATA.

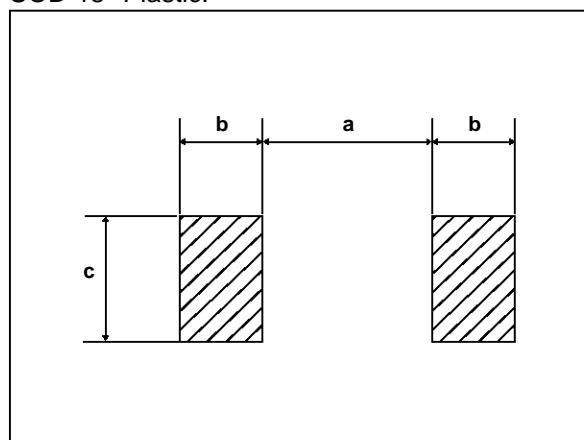
SOD 15 Plastic.



Ref	Millimeters		Inches	
	min	max	min	max
A	2.5	3.1	0.098	0.122
a_1	-	0.2	-	0.008
B	2.9	3.1	0.114	0.122
C	4.8	5.2	0.190	0.200
D	7.6	8.0	0.300	0.315
E	6.3	6.6	0.248	0.259
F	1.3	1.7	0.051	0.067

FOOTPRINT DIMENSIONS.

SOD 15 Plastic.



Ref	Millimeters
a	4.2
b	2
c	3.3

Packaging : Standard packaging is in film.

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