



SMTPA SERIES

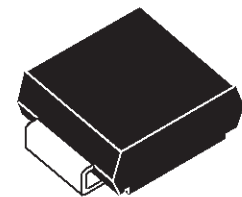
TRISIL™

FEATURES

- BIDIRECTIONAL CROWBAR PROTECTION.
- BREAKDOWN VOLTAGE RANGE:
From 62 V To 270 V.
- HOLDING CURRENT = 150 mA min
- REPETITIVE PEAK PULSE CURRENT :
 $I_{PP} = 50 \text{ A}$, 10/1000 μs .

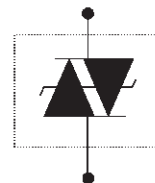
DESCRIPTION

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



SMB
(JEDEC DO-214AA)

SCHEMATIC DIAGRAM



COMPLIES WITH THE FOLLOWING STANDARDS:	Peak Surge Voltage (V)	Voltage Waveform (μs)	Current Waveform (μs)	Admissible I_{pp} (A)	Necessary Resistor (Ω)
(CCITT) ITU-K20	1000	10/700	5/310	25	-
(CCITT) ITU-K17	1500	10/700	5/310	38	-
VDE0433	2000	10/700	5/310	50	-
VDE0878	2000	1.2/50	1/20	50	-
IEC-1000-4-5	level 3 level 4	10/700 1.2/50	5/310 8/20	50 100	- -
FCC Part 68, lightning surge type A	1500 800	10/160 10/560	10/160 10/560	75 55	12.5 6.5
FCC Part 68, lightning surge type B	1000	9/720	5/320	25	-
BELLCORE TR-NWT-001089 First level	2500 1000	2/10 10/1000	2/10 10/1000	150 50	11.5 10
BELLCORE TR-NWT-001089 Second level	5000	2/10	2/10	150	11.5
CNET I31-24	1000	0.5/700	0.8/310	25	-

SMTPA xxx

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

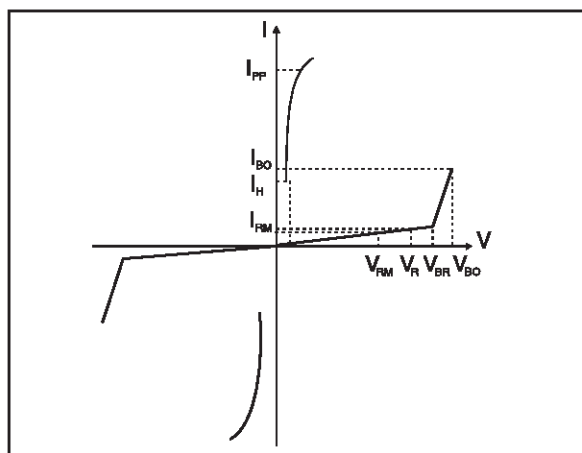
Symbol	Parameter		Value	Unit
P	Power dissipation	T _{lead} = 50 °C	5	W
I _{PP}	Peak pulse current	10/1000 μs 8/20 μs	50 100	A
I _{TSM}	Non repetitive surge peak on-state current	tp = 20 ms	30	A
dV/dt	Critical rate of rise of off-state voltage	V _{RM}	5	KV/μs
T _{stg} T _j	Storage temperature range Maximum junction temperature		- 55 to + 150 150	°C °C
T _L	Maximum lead temperature for soldering during 10 s.		260	°C

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-l)	Junction to leads.	20	°C/W
R _{th} (j-a)	Junction to ambient on printed circuit with standard footprint dimensions.	100	°C/W

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

Symbol	Parameter
V _{RM}	Stand-off voltage
I _{RM}	Leakage current at stand-off voltage
V _R	Continuous Reverse voltage
V _{BR}	Breakdown voltage
V _{BO}	Breakover voltage
I _H	Holding current
I _{BO}	Breakover current
I _{PP}	Peak pulse current
C	Capacitance



Type	Marking	I _{RM} @ V _{RM} max.		I _R @ V _R max. note 1		V _{BO} @ I _{BO} max. note2		I _H min. note3	C max. note4
		μA	V	μA	V	V	mA	mA	pF
SMTPA62	U01	2	56	50	62	82	800	150	150
SMTPA68	U05	2	61	50	68	90	800	150	150
SMTPA100	U13	2	90	50	100	133	800	150	100
SMTPA120	U17	2	108	50	120	160	800	150	100
SMTPA130	U19	2	117	50	130	173	800	150	100
SMTPA180	U25	2	162	50	180	240	800	150	100
SMTPA200	U27	2	180	50	200	267	800	150	100
SMTPA220	U31	2	198	50	220	293	800	150	100
SMTPA240	U35	2	216	50	240	320	800	150	100
SMTPA270	U39	2	243	50	270	360	800	150	100

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

Note 1: I_R measured at V_R guarantee V_{BRmin} ≥ V_R

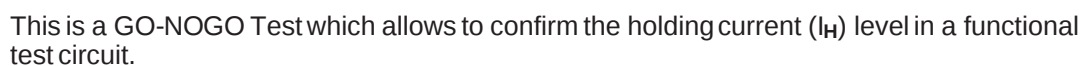
Note 2: Measured at 50 Hz (1 cycle) - See test circuit 1.

Note 3: See test circuit 2.

Note 4: V_R = 1V, F = 1MHz. Refer to fig.3 for C versus V_R.



- TEST CIRCUIT 2 for I_H parameter.**



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 : $I_{pp} = 10A$, $10/1000 \mu s$.
- 3) The D.U.T will come back off-state within 50 ms max.

Fig. 1: Non repetitive surge peak on-state current versus overload duration (T_j initial=25°C).

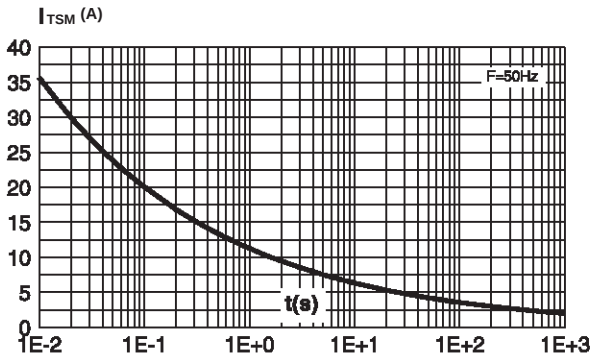


Fig. 3: Relative variation of junction capacitance versus reverse applied voltage (typical values).
Note: For V_{RM} upper than 56V, the curve is extrapolated (dotted line).

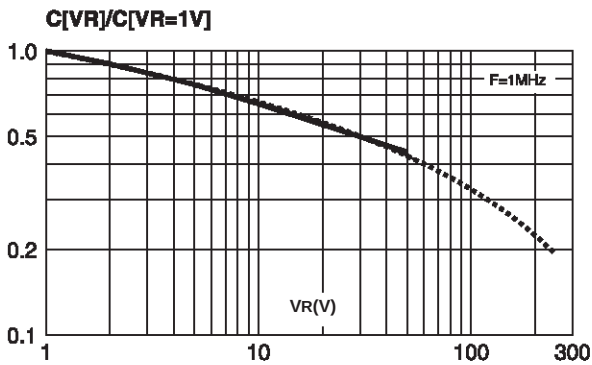


Fig. 5: Transient thermal impedance junction to ambient versus pulse duration (for FR4 PC Board with $T_{lead} = 10$ mm).

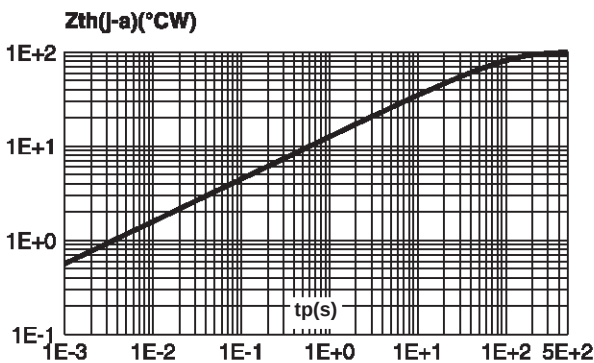


Fig. 2: Relative variation of holding current versus junction temperature.

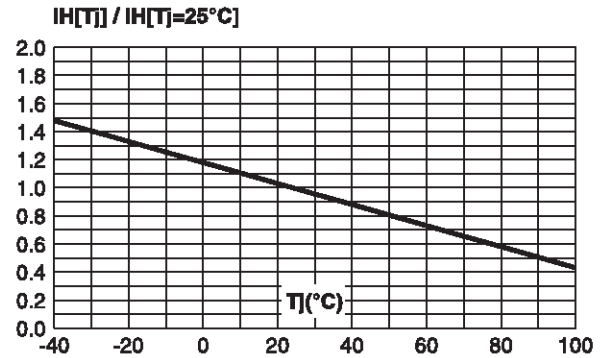
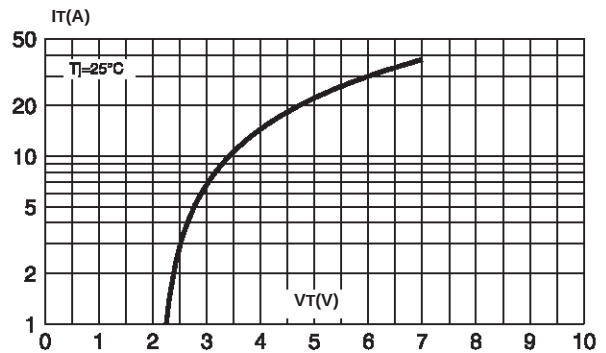
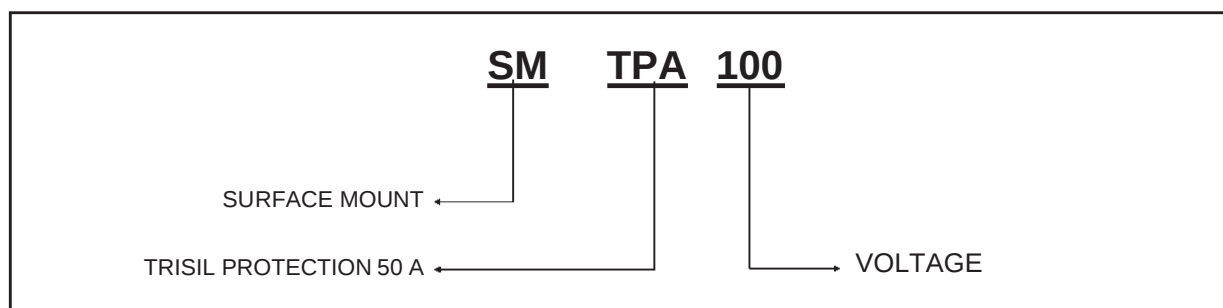


Fig. 4: On-state current versus on-state voltage (typical values).

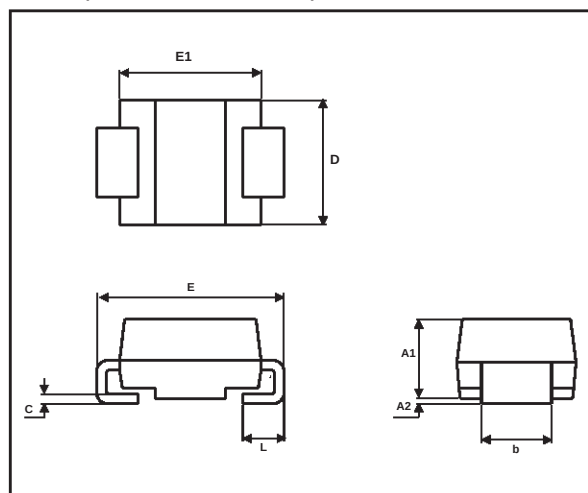




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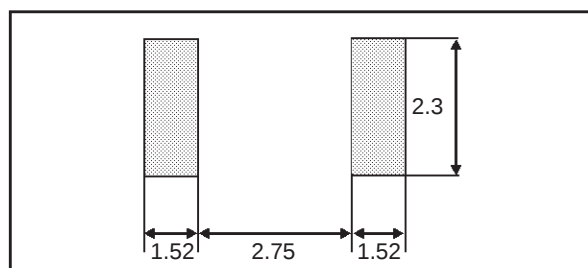
PACKAGE MECHANICAL DATA.

SMB (JEDEC DO-214AA)



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.45	0.075	0.096
A2	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.41	0.006	0.016
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
D	3.30	3.95	0.130	0.156
L	0.75	1.60	0.030	0.063

FOOT PRINT DIMENSION (in millimeters) SMB



Packaging :

Standard packaging is in tape and reel

Weight : 0.12g

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