Surface Mount Surge Suppressors Bridge

FEATURES

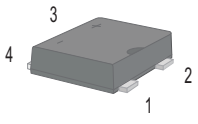
- Green Molding Compound (No Halogen and Antimony)
- Lower clamping voltage
- Glass Passivated Chip Junction
- High Surge Current Capability
- Designed for Surface Mount Application

MECHANICAL DATA

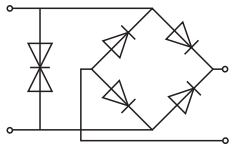
- Case: UMBT
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 60mg / 0.0021oz

PINNING

PIN	DESCRIPTION
1	Input Pin (~)
2	Input Pin (~)
3	Output Anode (+)
4	Output Cathode (-)



UMBT Package



Maximum Ratings and Thermal Characteristics(TA = 25°C unless otherwise specified)
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

Parameter of Bridge Rectifier	Symbols	TB110B	TB120B	TB240B	Units
Average Rectified Output Current	I_O	1.0			A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	30			A
Maximum Forward Voltage at 1.0A	V_F	1.1			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (@VR=1000V) @T_A=25 °C @T_A=125 °C	I_R	5 40			μA
Typical Junction Capacitance (f=1MHz,4V DC)	C_j	7			pF
Typical Thermal Resistance (Note1)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	45 15 25			°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150			°C

Note: 1. Mounted on glass epoxy PC board with 4×1.5"×1.5" (3.81×3.81 cm) copper pad.

Parameter of TVS	Symbol	TB110B	TB120B	TB240B	Unit
Maximum allowable continuous AC voltage at 50-60Hz	V_{RMS}	125	155	310	V
Breakdown voltage	V_{BR}	190~210	237~263	492~543	V
Maximum allowable continuous DC voltage	V_{DC}	170	220	440	V
Maximum allowable clamping voltage	V_C	300	350	700	V
Maximum peak current	I_{peak}	200			A
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150			°C

NOTES:
1.The breakdown voltage was measured at 1mA
2. The clamping voltage was measured at 8/20 μs standard current
3. The peak pulse current was tested at 8/20 μs waveform

Fig.1 Average Rectified Output Current Derating Curve

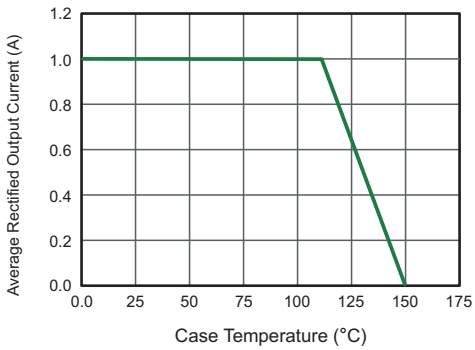


Fig.2 Typical Reverse Characteristics

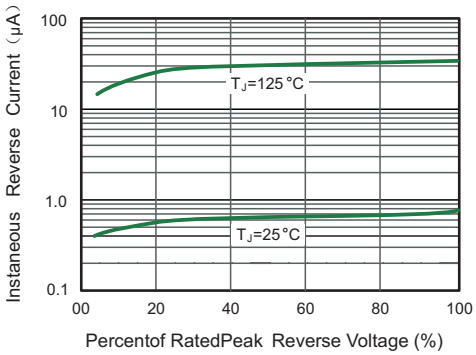


Fig.3 Typical Forward Characteristic

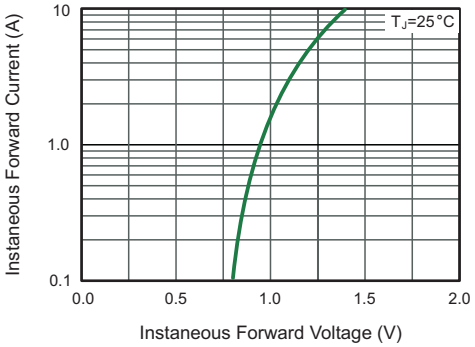


Fig.4 Typical Junction Capacitance

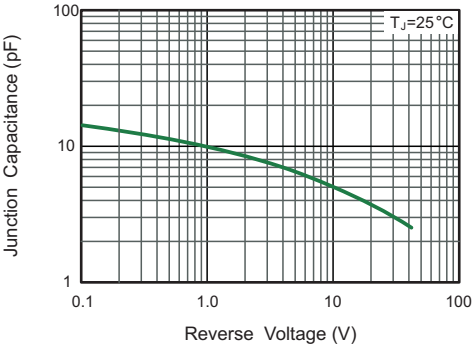


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

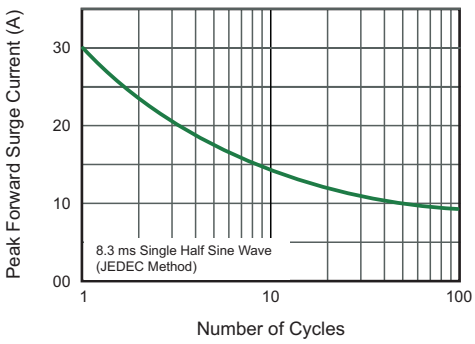


Fig.6 Peak Pulse Power Rating Curve

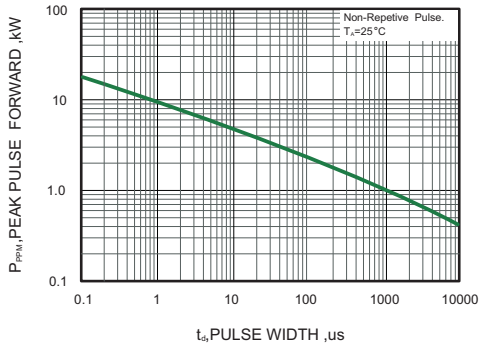


Fig.7 Forward Current Derating Curve

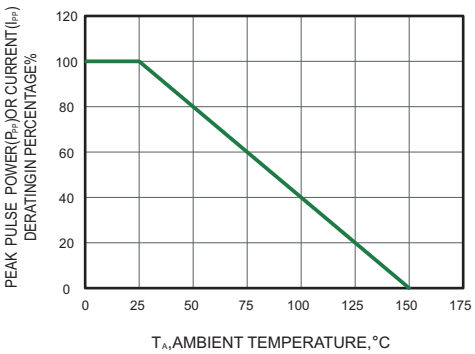


Fig.8 Pulse Waveform

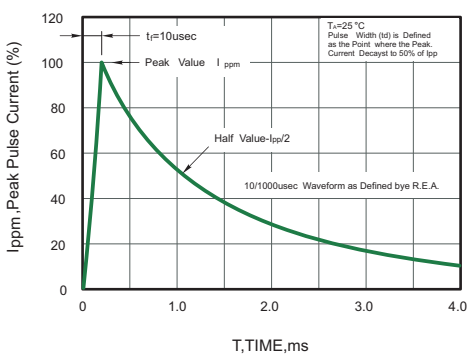


Fig.9 Derating Curve for number of pulses

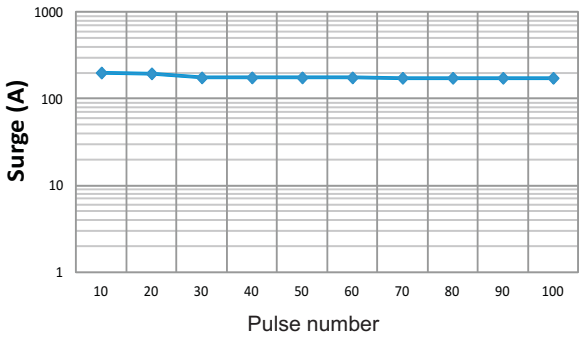


Fig.10 V/I Curve

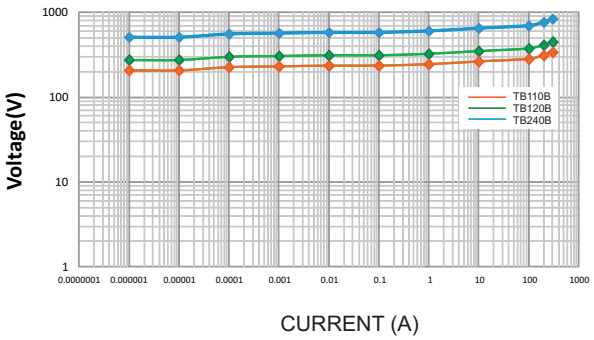
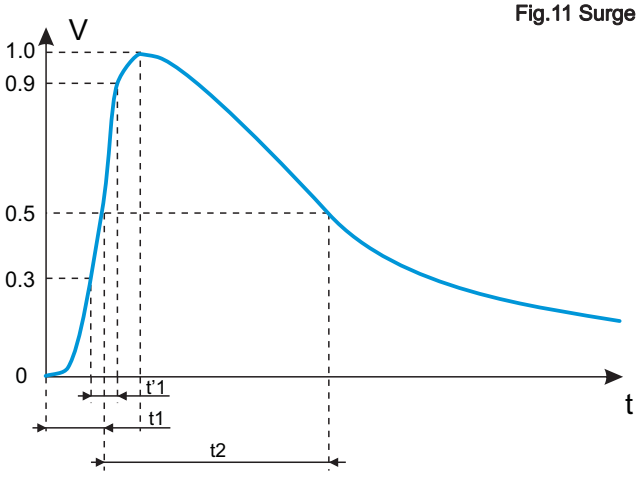


Fig.11 Surge Waveform

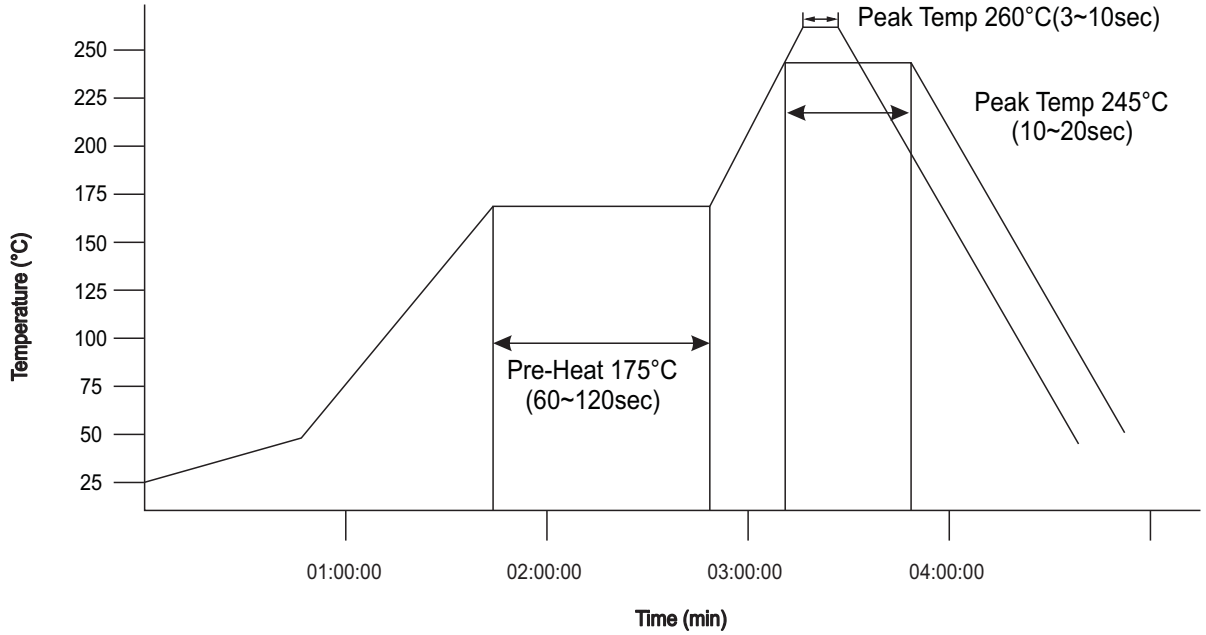


IEC61000-4-5 Standards

SEVERITY LEVEL	T1(=1.67t'1)	T2
1	10us	1000us
2	8us	20us

8/20us waveform current

Fig.12 The IR reflow and temperature of soldering for Pb free process

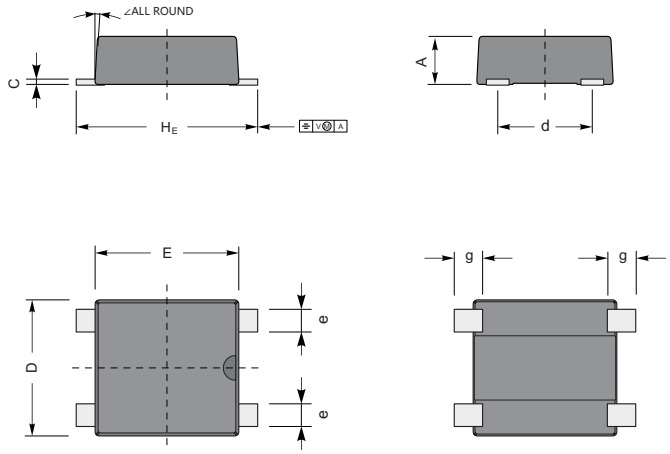


IR reflow Pb free process suggestion profile :

(1) Ramp-up rate (217℃ to peak) +3℃/second max.
(2) Temp. maintain at 175±25 180seconds max.
(3) Temp. maintain above 217℃ 60~150 seconds
(4) The peak temperature must be at least 260℃, the time above the 255℃ must be within 20s

PACKAGE OUTLINE

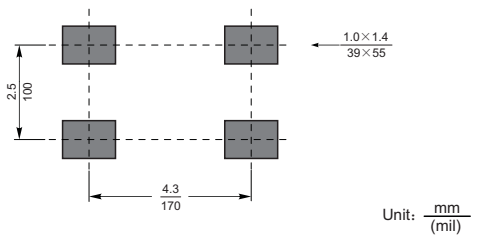
Plastic surface mounted package; 4 leads UMBT



UMBT mechanical data

UNIT		A	C	D	E	H_E	g	d	e	∠
mm	max	1.8	0.20	3.8	4.0	5.1	0.82	2.7	0.70	7°
	min	1.6	0.12	3.4	3.6	4.6	0.51	2.3	0.51	
mil	max	71	7.9	150	157	201	32	106	28	
	min	63	4.7	134	142	181	20	91	20	

The recommended mounting pad size



Marking

Type number	Marking code
TB110B	T110B
TB120B	T120B
TB240B	T240B

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