



Surface Mount Surge Suppressors Bridge

FEATURES:

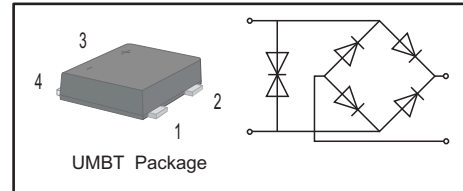
- Lower clamping voltage and excellent performance on ringing waves testing.
- Green Molding Compound (No Halogen and Antimony)
- Glass Passivated Chip Junction
- High Surge Current Capability
- Designed for Surface Mount Application

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 (-)



Maximum Ratings and Electrical characteristics

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	STB110BS	Units
Average Rectified Output Current @ Fig.1	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 1.0 A	V_F	1.1	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (@VR=1000V)	I_R	5 40	μ A
Typical Junction Capacitance (Note1)	C_j	7	pF
Typical Thermal Resistance (Note2)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	45 15 25	$^{\circ}$ C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	$^{\circ}$ C

Note: 1. Measured at 1MHz and applied reverse voltage of 4 V D.C.

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

Parameter of TVS	Symbol	STB110BS	Unit
Maximum allowable continuous AC voltage at 50-60Hz	V_{RMS}	125	V
Breakdown Voltage at 1mA	V_{BR}	190~240	V
Maximum allowable continuous DC voltage	V_{DC}	170	V
Maximum allowable clamping voltage	V_C	300	V
Maximum peak current (8/20 μ s@2 Ω)	I_{peak}	200	A
Operating Junction Temperature and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	$^{\circ}$ C

NOTES:

1. The breakdown voltage was measured at 1mA
2. The clamping voltage was measured at 8/20 μ s standard current, (1A)
3. The peak current was tested at 8/20 μ s waveform



Fig.1 Average Rectified Output Current Derating Curve

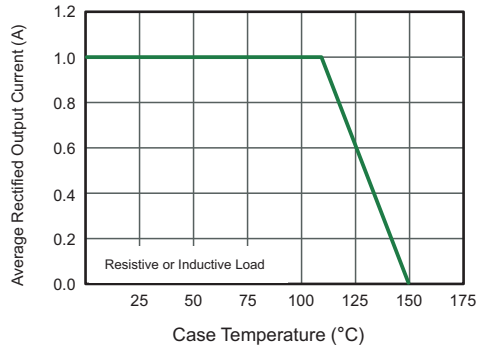


Fig.2 Typical Reverse Characteristics

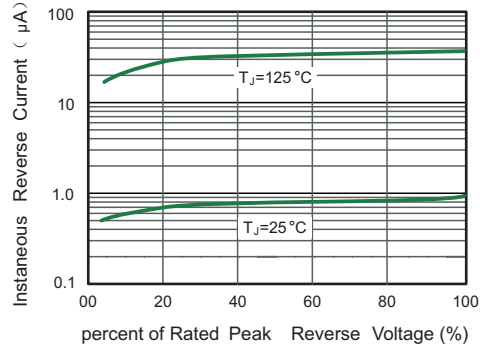


Fig.3 Typical Instantaneous Forward Characteristics

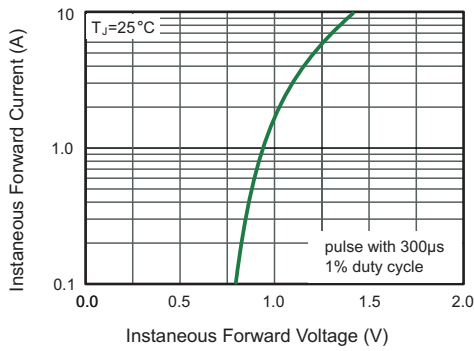


Fig.4 Typical Junction Capacitance

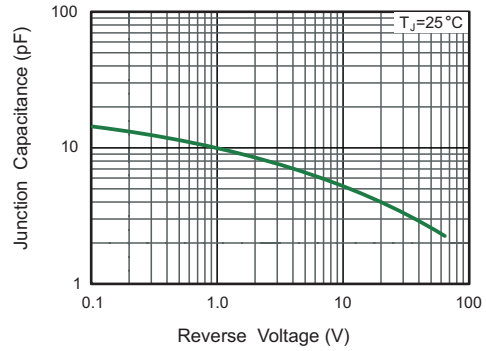


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

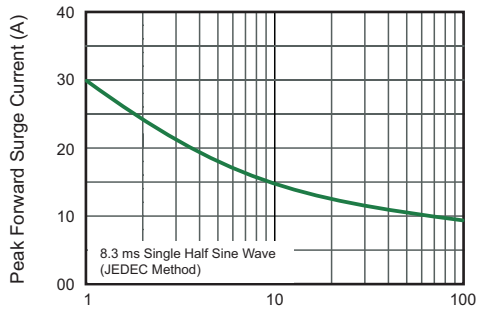


Fig.6 Off-State Current vs. Junction Temperature

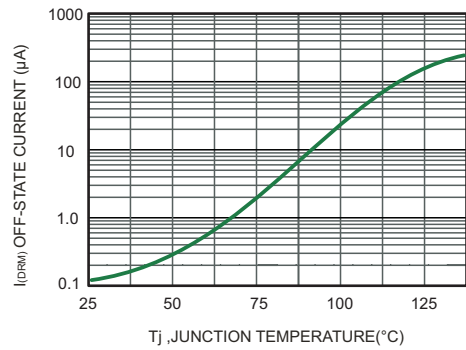


Fig.7 Peak Pulse Power Rating Curve

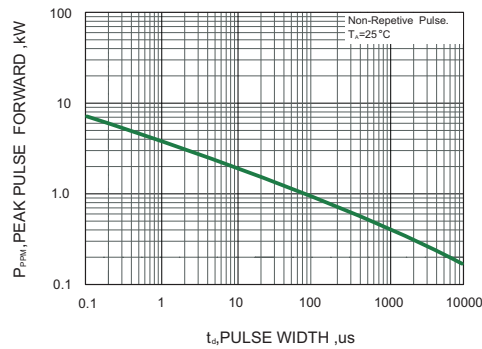




Fig.8 Derating Curve for number of pulses

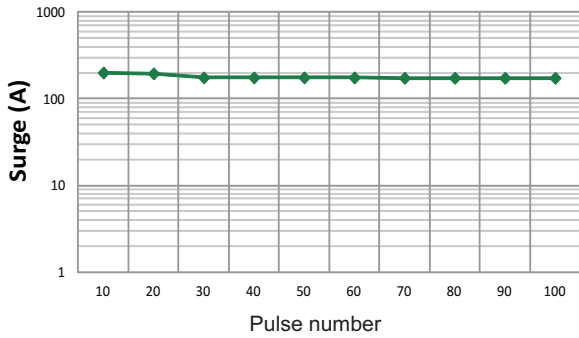


Fig.9 V/I Curve

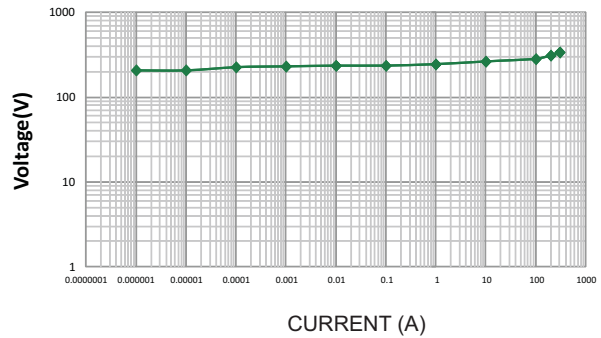
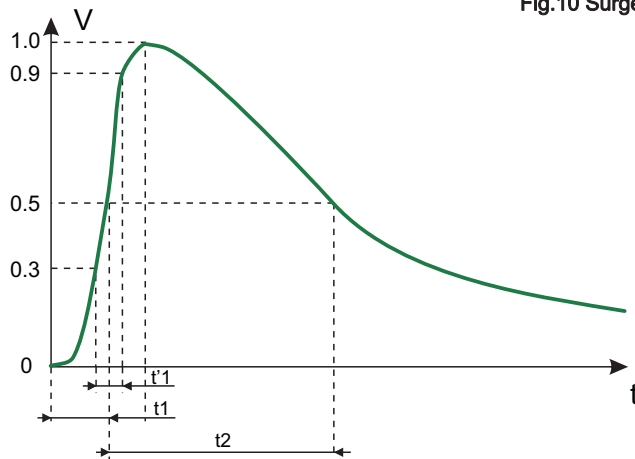


Fig.10 Surge Waveform

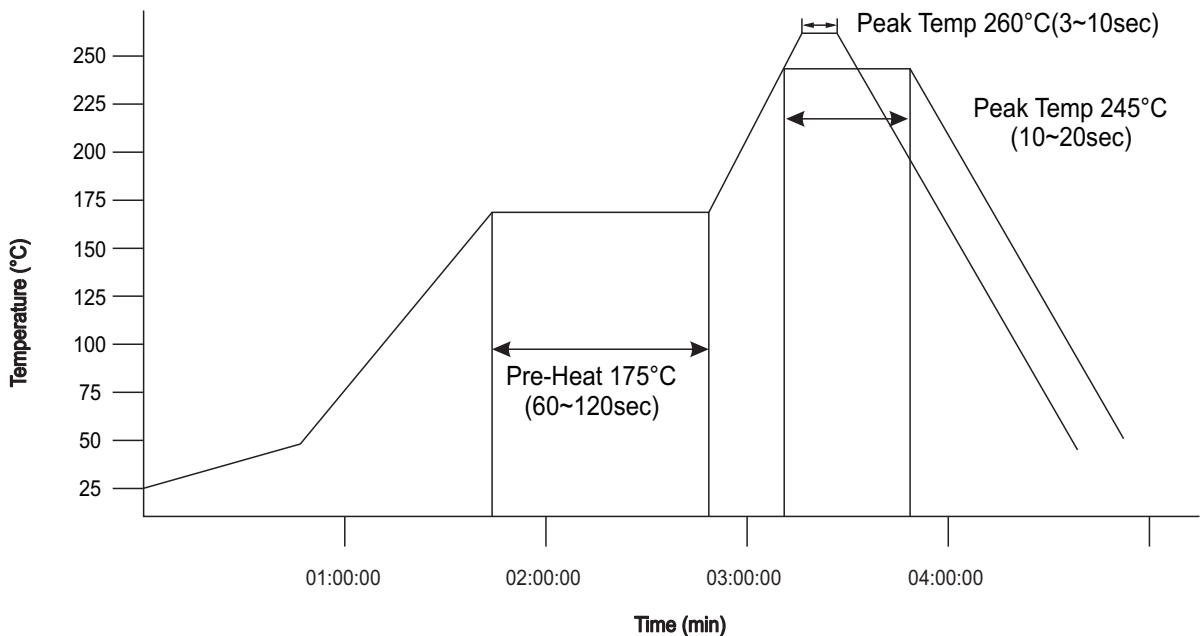


IEC61000-4-5 Standards

SEVERITY LEVEL	T1(=1.67t ₁)	T2
1	10us	1000us
2	8us	20us

8/20us waveform current

Fig.11 The IR reflow and temperature of soldering for Pb free process



IR reflow Pb free process suggestion profile :

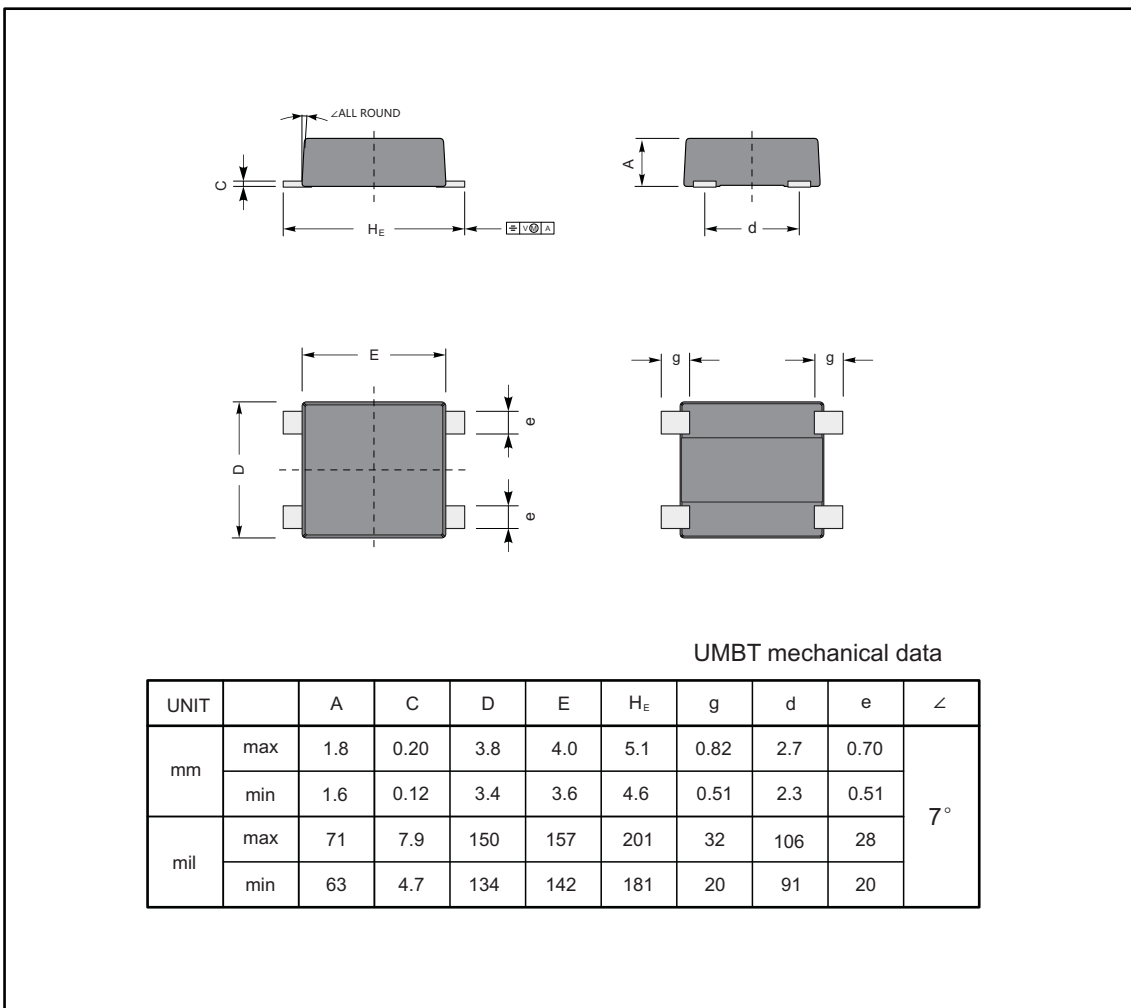
- (1) Ramp-up rate (217°C to peak) +3°C/second max.
- (2) Temp. maintain at 175±25 180seconds max.
- (3) Temp. maintain above 217°C 60~150 seconds
- (4) The peak temperature must be at least 260°C, the time above the 255°C must be within 20s



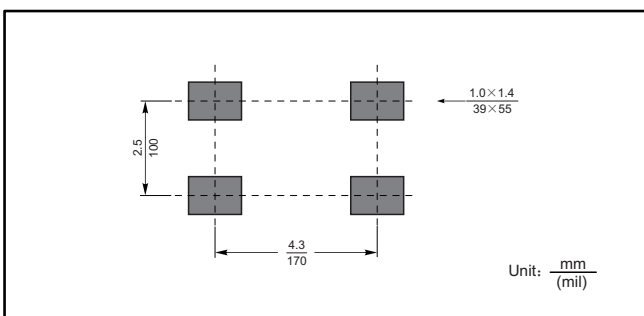
PACKAGE OUTLINE

Plastic surface mounted package; 4 leads

UMBT



The recommended mounting pad size



Marking

Type number	Marking code
STB110BS	T110B



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