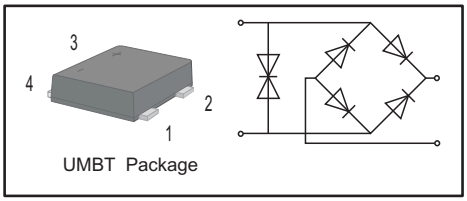
UMBT-STB110BS
SURGE SUPPRESSOR BRIDGE

FEATURES:
- RoHS compliant
- Lower clamping voltage and excellent performance on ringing waves testing.
- Lead Free Finish/RoHS Compliant
- 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 (-)



UMBT Package

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	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) @T_A=25 °C @T_A=125 °C	I_R	5 40	μA
Typical Junction Capacitance (Note1)	C_j	7	pF
Typical Thermal Resistance (Note2)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	45 10 25	°C/W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°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.

Maximum Ratings and Thermal Characteristics(TA = 25°C unless otherwise specified)

Technology Data	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 (8/20μs@2Ω)	I_{peak}	200	A
Operating Junction Temperature 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 8/20μs standard current, (1A)
3. The peak current was tested at 8/20μs waveform

Fig.1 Average Rectified Output Current Derating Curve

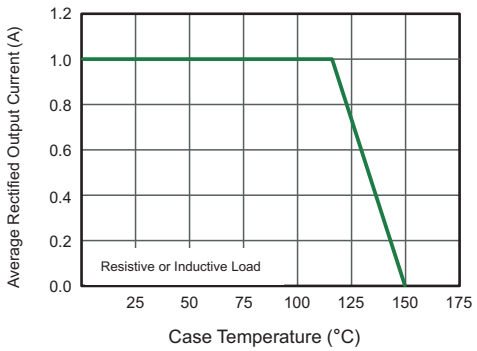


Fig.2 Typical Reverse Characteristics

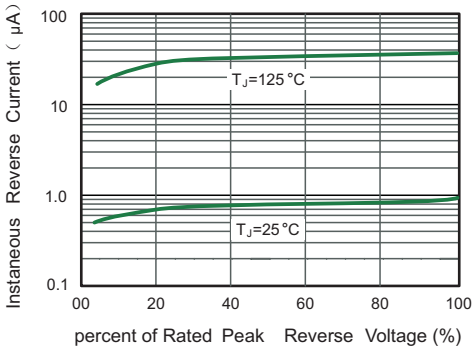


Fig.3 Typical Instaneous Forward Characteristics

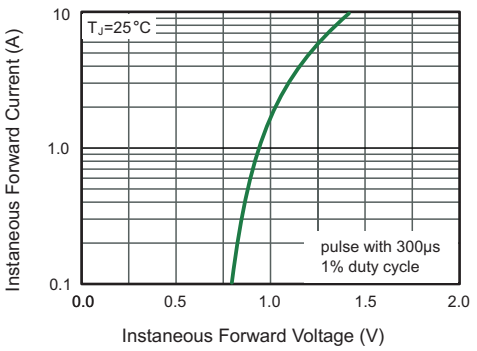


Fig.4 Typical Junction Capacitance

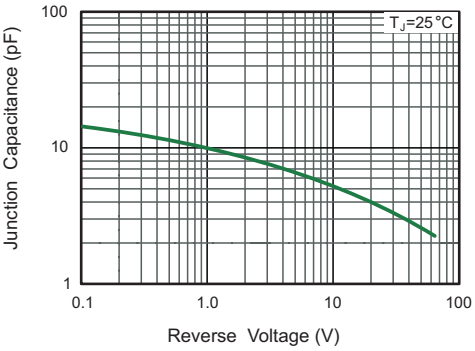


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

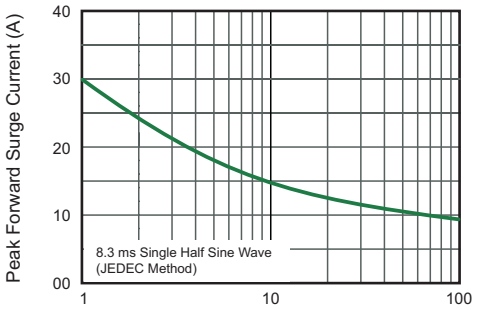


Fig.6 Off-State Current vs. Junction Temperature

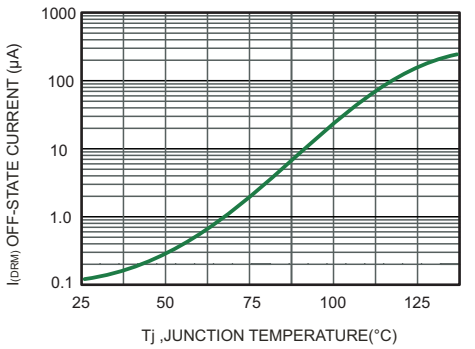


Fig.7 Peak Pulse Power Rating Curve

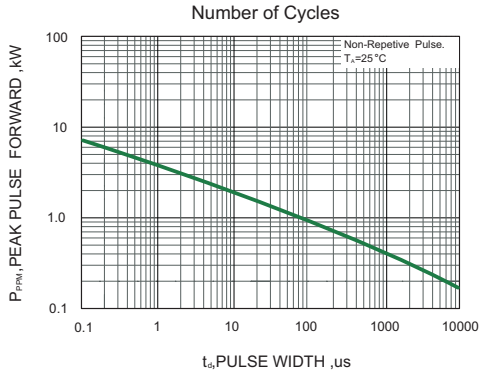


Fig.8 Derating Curve for number of pulses

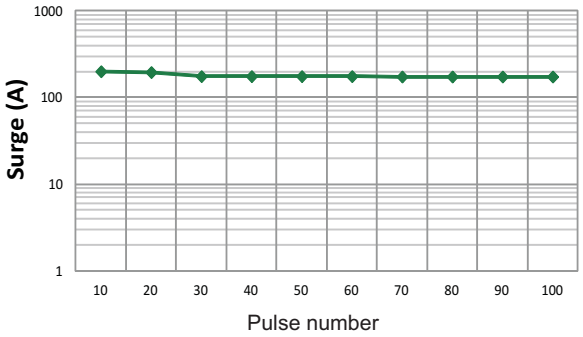


Fig.9 V/I Curve

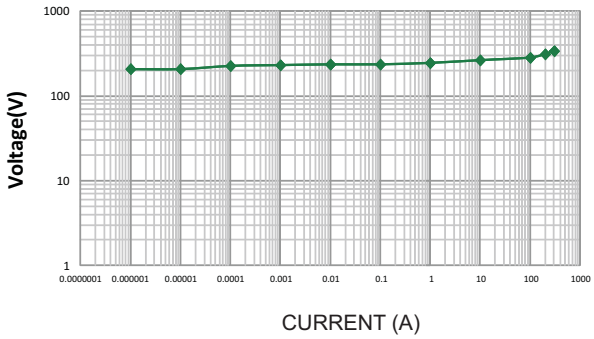
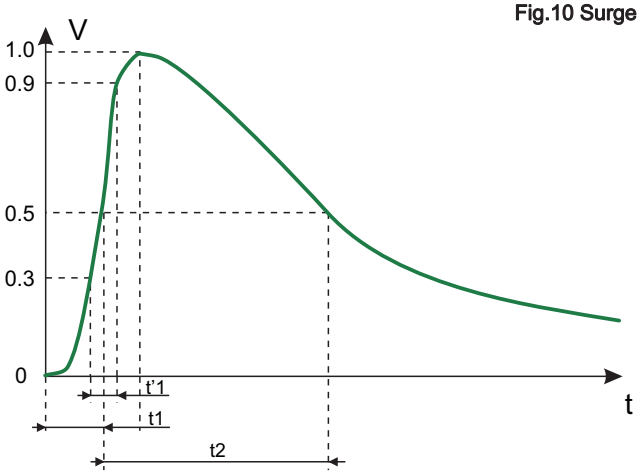


Fig.10 Surge Waveform

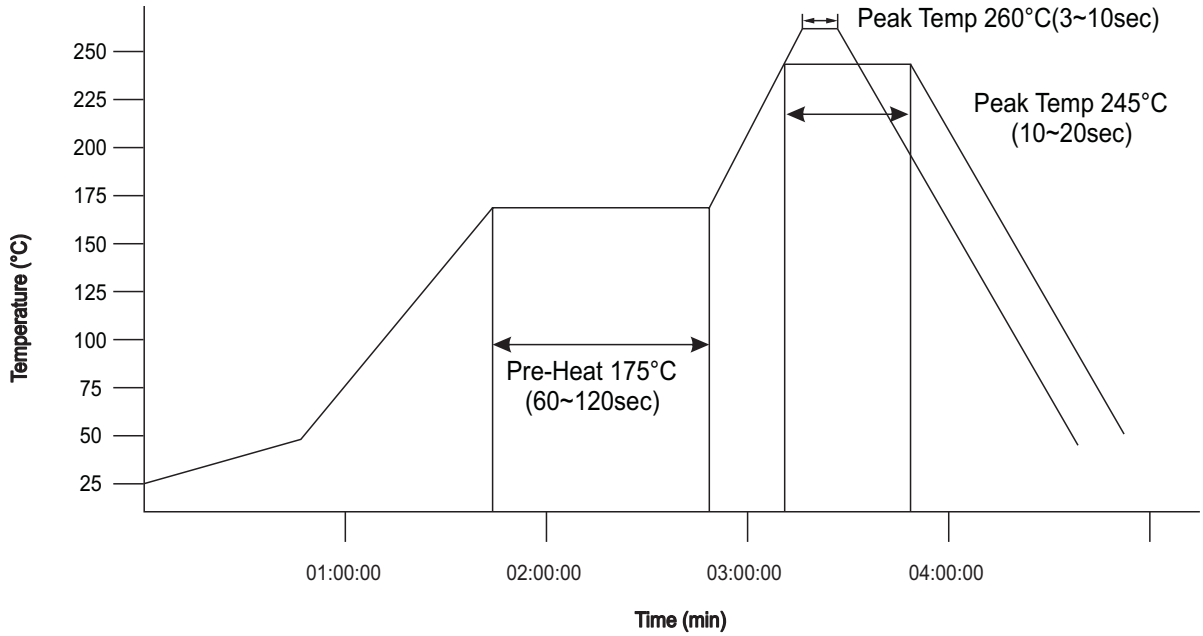


IEC61000-4-5 Standards

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

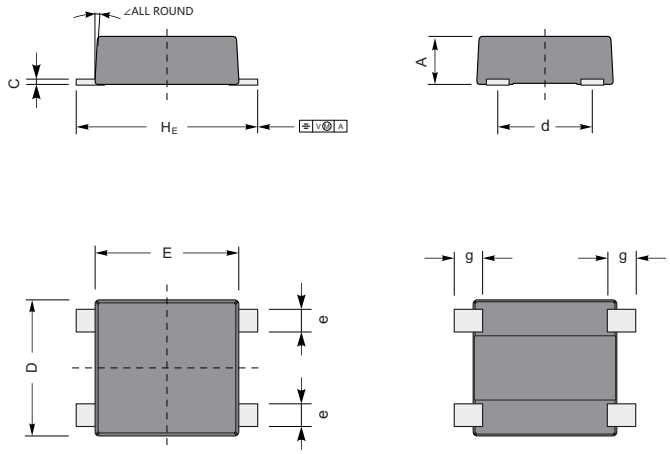


IR reflow Pb free process suggestion profile :

(1) Ramp-up rate (217℃ 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

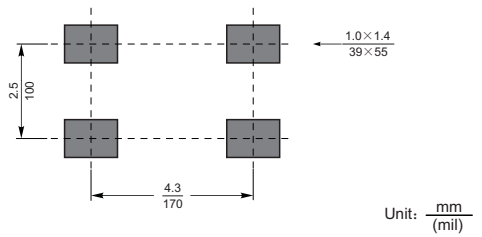
Plastic surface mounted package; 4 leads UMBT



UMBT mechanical data

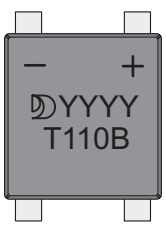
UNIT		A	C	D	E	H_E	g	d	e	∠
mm	max	1.8	0.20	3.8	4.0	5.1	0.82	2.7	0.70	7°
	min	1.6	0.12	3.4	3.6	4.6	0.51	2.3	0.51	
mil	max	71	7.9	150	157	201	32	106	28	
	min	63	4.7	134	142	181	20	91	20	

The recommended mounting pad size



Marking

Type number	Marking code
STB110BS	T110B



MARKING DIAGRAM

1. T110B: Marking content;
2. YYYY: Four digit traceability code;
3. : LOGO of Jingdao;
4. +: Anode symbol;
5. - : Cathode symbol;

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