



**FEATURES**

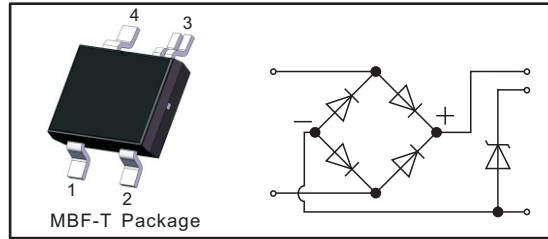
- Lead Free Finish/RoHS Compliant
- Green Molding Compound (No Halogen and Antimony)
- Lower clamping voltage and excellent performance on ringing waves testing.
- Glass Passivated Chip Junction
- High Surge Current Capability
- Designed for Surface Mount Application

**PINNING**

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

**MECHANICAL DATA**

- Case: MBF-T
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 75mg / 0.0026oz



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	TB110F	TB110FA	TB120F	TB120FA	TB240F	TB240FA	Units
Average Rectified Output Current at T <sub>C</sub> = 125 °C	I <sub>O</sub>	1.0						A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	20						A
Maximum Forward Voltage at 1.0 A	V <sub>F</sub>	1.1						V
Maximum DC Reverse Current at Rated DC Blocking Voltage (@VR=1000V)	I <sub>R</sub>	5 100						μA
Typical Junction Capacitance ( f=1MHz,4V DC )	C <sub>j</sub>	8						pF
Typical Thermal Resistance ( Note1 )	R <sub>θJA</sub>	130						°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-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	TB110F	TB120F	TB240F	TB110FA	TB120FA	TB240FA	Unit
Maximum allowable continuous AC voltage at 50-60Hz	V <sub>RMS</sub>	135	155	310	135	155	310	V
Breakdown voltage @ 1mA	V <sub>BR</sub>	209~231	237~263	492~543	209~231	237~263	492~543	V
Maximum allowable continuous DC voltage	V <sub>DC</sub>	190	220	440	190	220	440	V
Maximum peak current(8/20us@12Ω)(Note2)	I <sub>peak</sub>	35			40			A
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-55 ~ +150						°C

Note: 2.The internal resistance of lightning surge generator is 2 Ω, and the series resistance of test circuit is 10 Ω.



Fig.1 Average Rectified Output Current Derating Curve

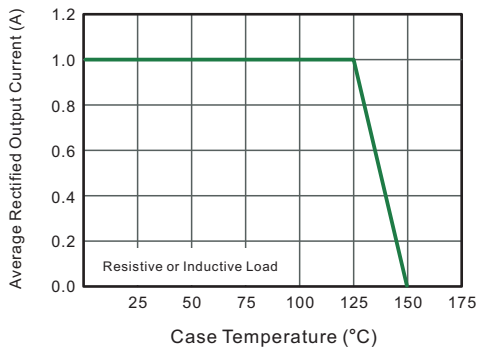


Fig.2 Typical Reverse Characteristics

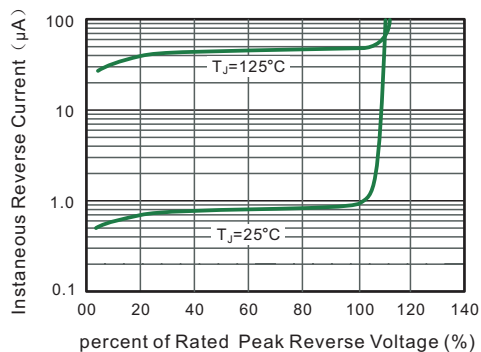


Fig.3 Typical Instantaneous Forward Characteristics

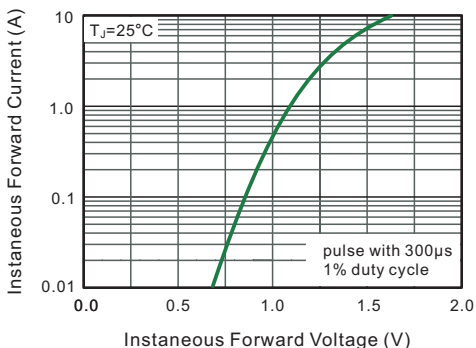


Fig.4 Typical Junction Capacitance

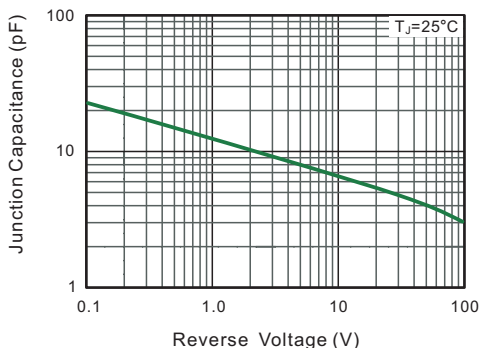


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

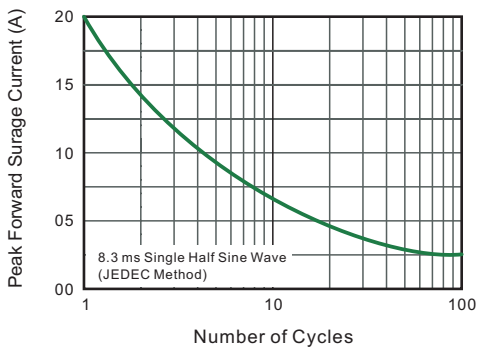
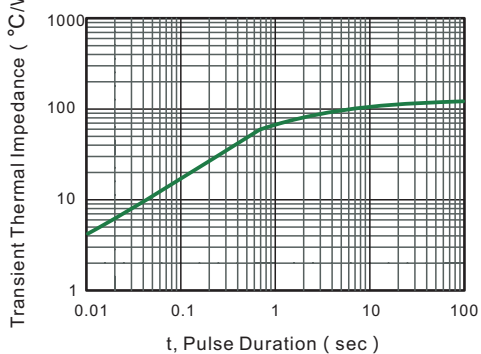
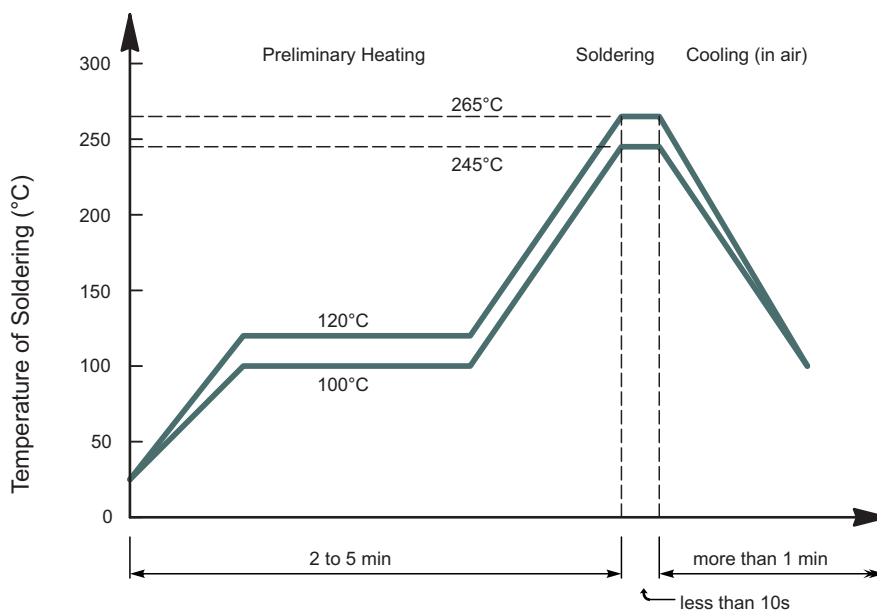


Fig.6- Typical Transient Thermal Impedance

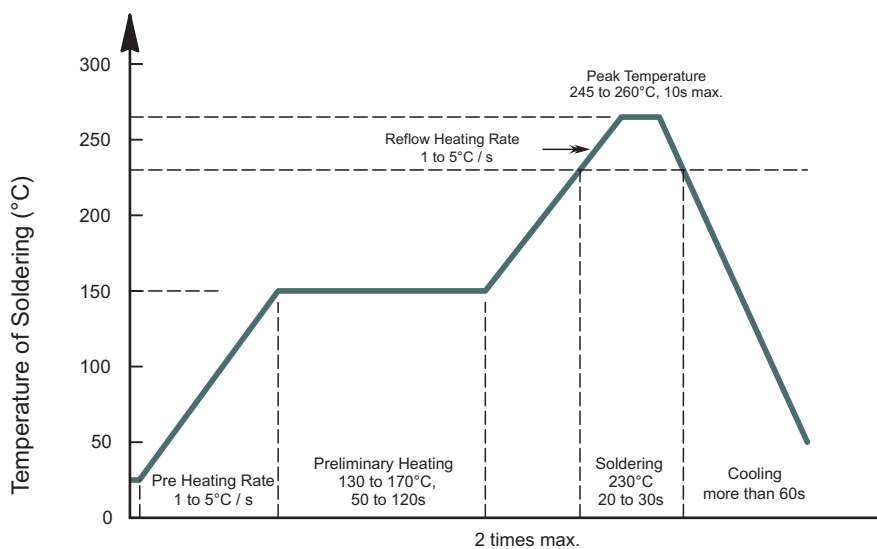




• Recommended condition of flow soldering



• Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)

• Condition of hand soldering

Temperature: 370°C

Time: 3s max.

Times: one time

• Remark:

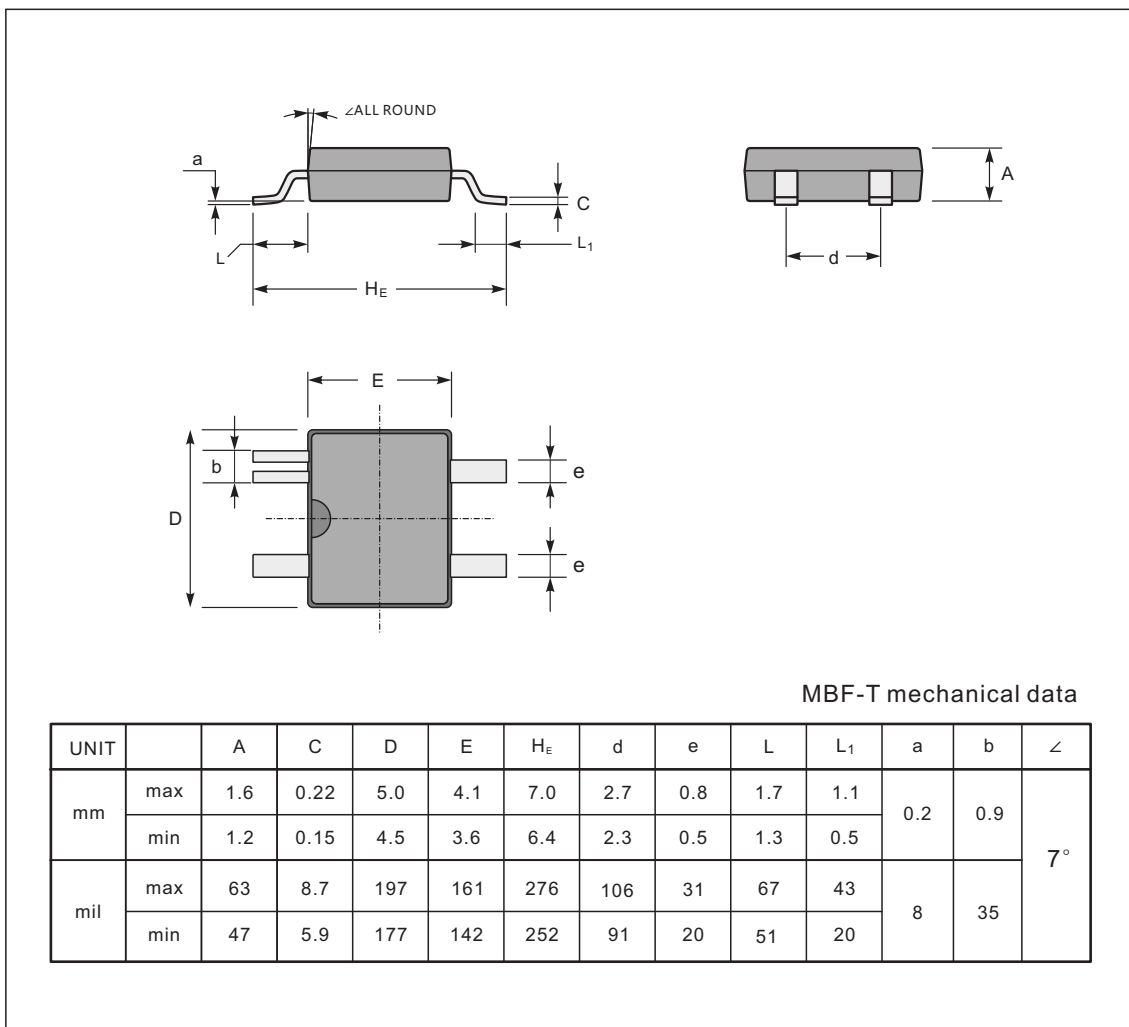
Lead free solder paste (96.5Sn/3.0Ag/0.5Cu)



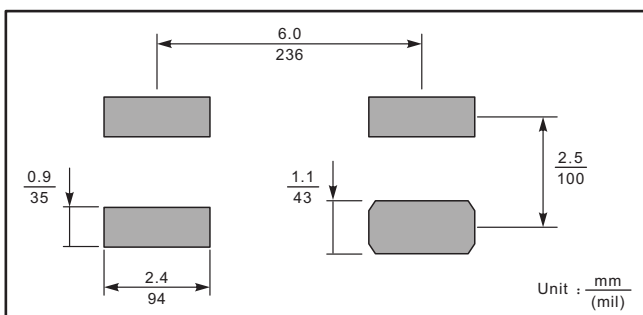
### PACKAGE OUTLINE

Plastic surface mounted package; 5 leads

MBF-T

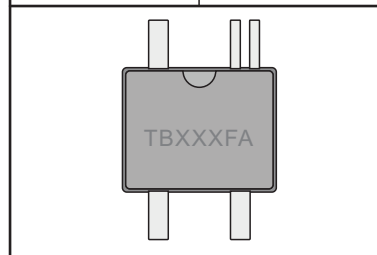


### The recommended mounting pad size



### Marking

Type number	Marking code
TB110F	TB110F
TB120F	TB120F
TB240F	TB240F
TB110FA	TB110FA
TB120FA	TB120FA
TB240FA	TB240FA



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