

Features

- For use in telecommunication circuit applications requiring low current protection with high surge tolerance
- Overcurrent protection to Telcordia GR-1089-CORE Issue 4 (B1250T only) & UL 1950/60950
- Bourns® TISP® products are recommended for the overvoltage section of the circuit



These models are currently available but not recommended for new designs.

- Agency recognition: File: E198545
- RoHS compliant*

Telefuse™ SMD Power Cross Protection Fuse

Electrical Characteristics

| Model Number | Ampere Rating (A) | Voltage Rating (VRMS) | Typical Cold Resistance (Ohms) | Volt-drop @ 100 % In (Volts) Max. | Melting I2T < 10 msec (A2 sec.) | Melting I2T @ 10 In (A2 sec.) | Maximum Power Dissipation (W) |
|--------------|-------------------|-----------------------|--------------------------------|-----------------------------------|---------------------------------|-------------------------------|-------------------------------|
| B0500T | 0.500 | 600 | 0.350 | 0.23 | 2 | 2.3 | 0.20 |
| B1250T | 1.25 | 600 | 0.075 | 0.18 | 14 | 17 | 0.40 |
| B2000T | 2.0 | 600 | 0.056 | 0.16 | 33 | 37 | 0.52 |

Temperature Range

.....-55 °C to +125 °C

Environmental Characteristics

Thermal Shock MIL-STD-202, Method 107, Test Condition B (-65 °C to +125 °C)
 Shock..... MIL-STD-202, Method 213, Test Condition I (100 Gs peak for 6 milliseconds)
 Vibration MIL-STD-202, Method 201 (10-55 Hz, 0.06 inch total excursion)
 Salt Spray ... MIL-STD-202, Method 101, Test Condition B (48 hrs.)
 Insulation Resistance MIL-STD-202, Method 302, Test Condition A (after opening) 10,000 ohms minimum
 Solderability MIL-STD-202, Method 208
 Resistance to Solder Heat MIL-STD-202, Method 210, Test Condition J (235 °C, 30 sec.)
Physical Characteristics
 Body Material Ceramic with tin plated brass caps
 Solder RoHS 6 Compliant lead free
 RoHS reflow compatible; reference 240 °C, 30 sec. max.
 Soldering Process Window
 IR Reflow 240 °C for 30 seconds max. (Not recommended for Wave solder direct immersion)
 Packaging.....2,000 pcs. per 13 " reel

Lightning Surge Withstand Capabilities

| Max. Rise/Min. Decay (µs) | Repetitions | | Minimum Peak Voltage (V) | Minimum Withstand Peak Current (A) | | |
|---------------------------|-------------|---------------|--------------------------|------------------------------------|--------|--------|
| | Total | Each Polarity | | B0500T | B1250T | B2000T |
| 10/1000 | 50 | 25 | 1000 | 25 | 100 | 120 |
| 10/360 | 50 | 25 | 1000 | 30 | 125 | 150 |
| 2/10 | 20 | 10 | 2500 | 120 | 500 | 600 |
| 10/360 | 10 | 5 | 1000 | 30 | 125 | 150 |
| 2/10 | 2 | 1 | 5000 | 120 | 500 | 600 |
| 8/20 | 2 | 1 | 5000 | 75 | 300 | 350 |

Test Methods per GR-1089/TIA-968-A (FCC Pt. 68)

AC Power Fault Tests

| GR-1089 1st Level Test | Voltage (VRMS) | Short Circuit Current (A) | Applications | Duration | Fuse Characteristics | | |
|------------------------|----------------|---------------------------|--------------|----------|--------------------------------|--------------------------------|--------|
| | | | | | B0500T | B1250T | B2000T |
| 1 | 50 | 0.33 | 1 | 15 min. | Parts pass all 1st Level tests | | |
| 2 | 100 | 0.17 | 1 | 15 min. | | | |
| 3 | 200, 400, 600 | 1 | 60 | 1 sec. | | | |
| 4 | 1000 | 1 | 60 | 1 sec. | | | |
| 6 | 600 | 0.5 | 1 | 30 sec. | | | |
| 7 | 440 | 2.2 | 5 | 2 sec. | | | |
| 8 | 600 | 3 | 5 | 1.1 sec. | Will open | Parts pass all 1st Level tests | |
| 9 | 1000 | 5 | 5 | 0.4 sec. | Will open | | |

AC Current Limiting Protector Tests/Fusing Coordination Tests

| Voltage (Vac) | Current (A) | Duration | Maximum Time for Fuse to Open (Seconds) | | |
|---------------|-------------|---------------|---|--------|---------------|
| | | | B0500T | B1250T | B2000T |
| 600 | 2.2 | Up to 15 Min. | 1.0 | 900 | Will not open |
| 600 | 2.6 | | 0.8 | 50 | 2000 |
| 600 | 3.0 | | 0.5 | 10 | 100 |
| 600 | 3.75 | | 0.3 | 5 | 10 |
| 600 | 5 | | 0.2 | 2 | 3 |
| 600 | 7 | | 0.08 | 1 | 2 |
| 600 | 10 | | 0.04 | 0.5 | 0.7 |
| 600 | 12.5 | | 0.01 | 0.2 | 0.3 |
| 600 | 20 | | 0.005 | 0.07 | 0.1 |
| 600 | 25 | | 0.004 | 0.04 | 0.07 |
| 600 | 30 | | 0.003 | 0.02 | 0.05 |

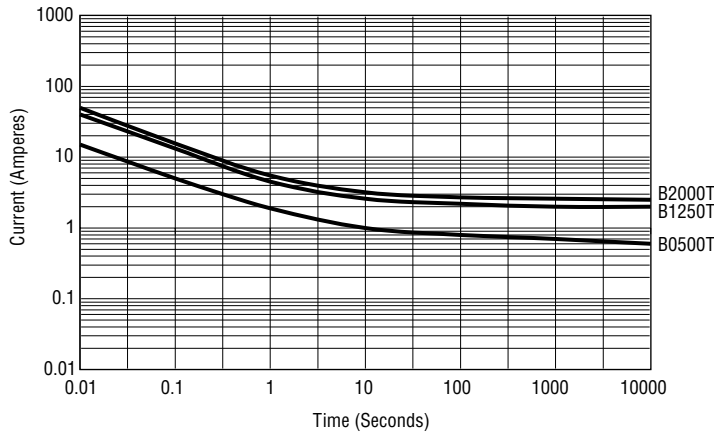
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

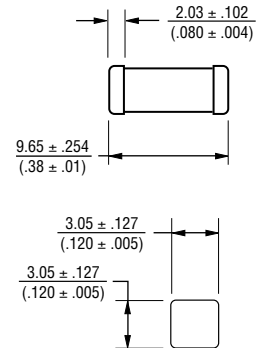
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

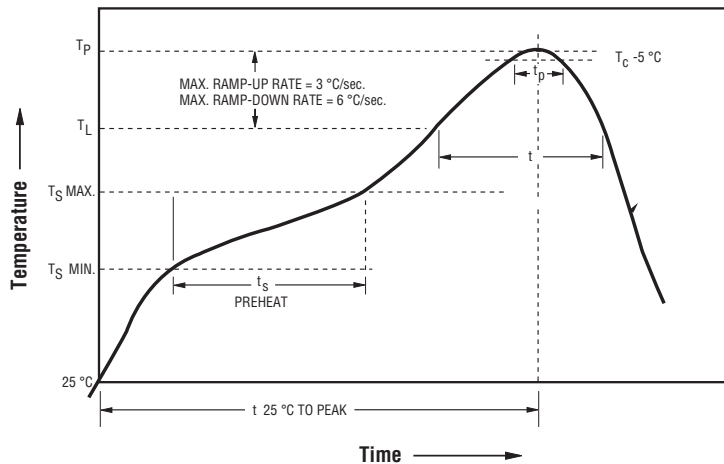
Time/Current Characteristic Curve



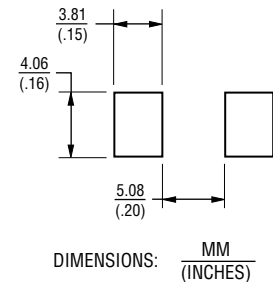
Product Dimensions



Solder Profile



Recommended Pad Layout



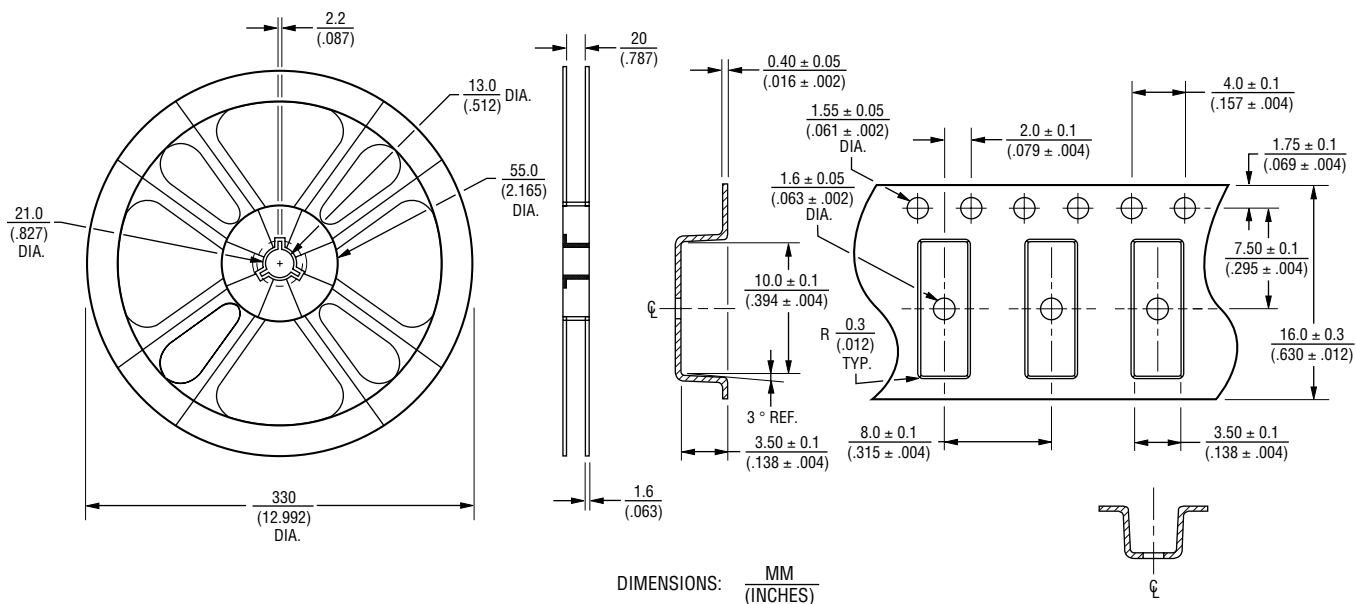
IR Reflow Profile

| Reflow Parameter | Value |
|---|---|
| Minimum Preheat Temperature ($T_{S \text{ MIN}}$) | 130°C |
| Maximum Preheat Temperature ($T_{S \text{ MAX}}$) | 170°C |
| Preheat Time | 60-180 seconds |
| $T_{S \text{ MAX}}$ to T_L Ramp-Up Rate | $3^\circ\text{C} / \text{second max.}$ |
| Time above Temperature T_L (t_L) | 200 $^\circ\text{C}$ for 60-120 seconds |
| Peak Temperature (T_P) | 240°C max. |
| Time within 5°C of Peak T_P | 20-30 seconds |
| Ramp-Down Rate | $6^\circ\text{C} / \text{second. max.}$ |

Telefuse™ SMD Power Cross Protection Fuse

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Packaging Specifications



REV. 11/16

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