


## 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
- 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                      |        |        |
| 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          |

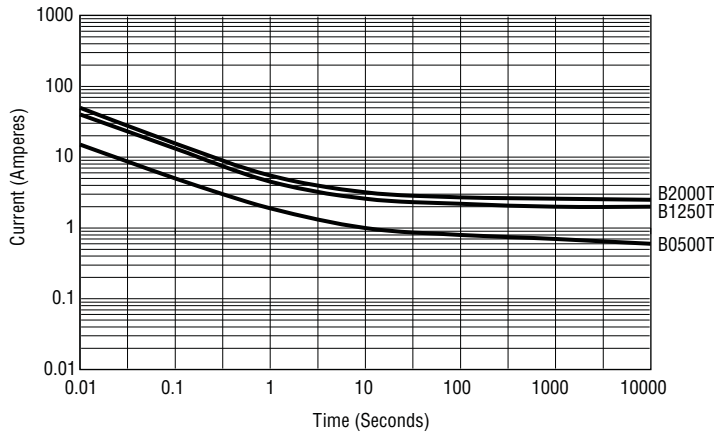
\*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

Specifications are subject to change without notice.

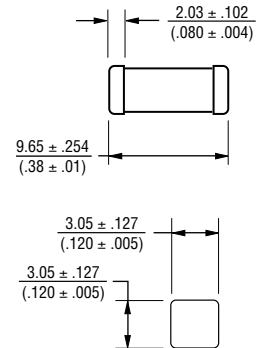
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

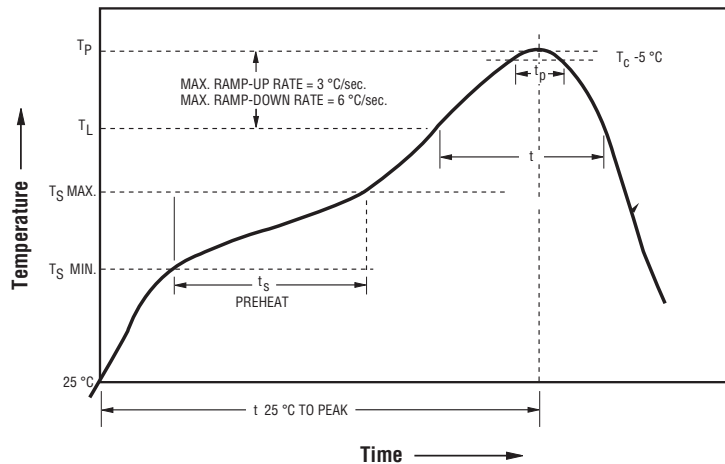
## Time/Current Characteristic Curve



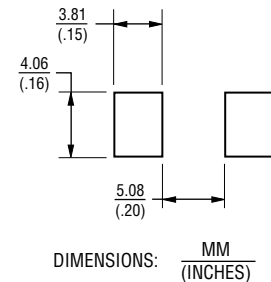
## Product Dimensions



## 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 °C / second max.        |
| Time above Temperature $T_L$ ( $t_L$ )            | 200 °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 °C / second. max.       |

