



## SinglFuse™ SF-3812TL-T Series Features

- Single blow fuse for overcurrent protection
- EIA 3812 (10030 metric) footprint
- Ceramic tube design for time lag fusing speed and low power applications
- UL 248-14 listed
- Meets IEC 60127-1 and IEC 60127-7 requirements
- Surface mount packaging for automated assembly
- RoHS compliant\* and halogen free\*\*

## SF-3812TL-T Series – Time Lag & Low Power SMD Fuses

### Electrical Characteristics

| Model           | Rated Current (A) | Fusing Time                                 | Resistance (Ω) Typ.*** | Rated Voltage | Interrupting Rating | Typical I <sup>2</sup> t (A <sup>2</sup> s) **** | Certifications |                |
|-----------------|-------------------|---------------------------------------------|------------------------|---------------|---------------------|--------------------------------------------------|----------------|----------------|
|                 |                   |                                             |                        |               |                     |                                                  | UL             | TUV            |
| SF-3812TL050T-2 | 0.5               | Open within 120 sec. at 250 % rated current | 0.5479                 | 250 VAC       | 50 A @ 250 VAC      | 1.963                                            | •              | <i>pending</i> |
| SF-3812TL075T-2 | 0.75              |                                             | 0.26                   |               |                     | 3.375                                            | •              | <i>pending</i> |
| SF-3812TL100T-2 | 1                 |                                             | 0.18                   |               |                     | 11.22                                            | •              | •              |
| SF-3812TL150T-2 | 1.5               |                                             | 0.1027                 |               |                     | 14.85                                            | •              | •              |
| SF-3812TL200T-2 | 2                 |                                             | 0.0504                 |               |                     | 19.84                                            | •              | •              |
| SF-3812TL250T-2 | 2.5               |                                             | 0.037                  |               |                     | 20.5                                             | •              | •              |
| SF-3812TL300T-2 | 3                 |                                             | 0.028                  |               |                     | 54                                               | •              | •              |
| SF-3812TL350T-2 | 3.5               |                                             | 0.0199                 |               |                     | 57.82                                            | •              | •              |
| SF-3812TL400T-2 | 4                 |                                             | 0.0158                 |               |                     | 125.6                                            | •              | •              |
| SF-3812TL500T-2 | 5                 |                                             | 0.012                  |               |                     | 185                                              | •              | •              |

\*\*\* Resistance value measured with  $\leq 10$  % rated current at 25 °C ambient. Tolerance  $\pm 30$  %.

\*\*\*\* Melting I<sup>2</sup>t calculated at 10 times rated current.

### Reliability Testing

| No. | Test                         | Test Condition                                                                                                                                         | Requirement                                                          | Test Reference                                  |
|-----|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------|
| 1   | Solderability                | Temperature setup: 235 $\pm$ 5 °C<br>Time setup: 10 $\pm$ 1 sec.                                                                                       | After test terminal electrode wetting area must be greater than 95 % | IEC 60068-2-58                                  |
| 2   | Resistance to soldering heat | Temperature setup: 235 $\pm$ 5 °C<br>Time setup: 30 $\pm$ 5 sec.                                                                                       | DCR change $\leq \pm 15$ %                                           | IEC 60068-2-58                                  |
| 3   | Thermal shock                | Temperature setup:<br>25 °C ~ -65 °C ~ 25 °C ~ 125 °C<br>Time setup: -65 °C (30 min)<br>~ 25 °C (5 min) ~ 125 °C (30 min)<br>~ 25 °C (5 min), 5 cycles | DCR change $\leq \pm 15$ %<br>No mechanical damage                   | MIL-STD-202G<br>Method 107G<br>Test Condition B |
| 4   | Humidity unload              | Heat (85 $\pm$ 0.5 °C)<br>High Humidity (85 $\pm$ 1 % RH)<br>240 hours                                                                                 | DCR change $\leq \pm 15$ %<br>No mechanical damage                   | MIL-STD-202G<br>Method 103B<br>Test Condition A |
| 5   | Salt spray                   | Salt spray concentration: 5 $\pm$ 1 %<br>Test liquid temperature: 35 $\pm$ 0.5 °C<br>96 hours                                                          | DCR change $\leq \pm 15$ %<br>No mechanical damage                   | MIL-STD-202G<br>Method 101E<br>Test Condition A |
| 6   | Bending                      | The board shall be bent by 1 mm at a rate of 1 mm/sec.                                                                                                 | DCR change $\leq \pm 15$ %                                           | IEC 60127-4                                     |
| 7   | Vibration                    | Frequency setup: 10 ~ 55 ~ 10 Hz<br>Time setup: 1 Minute/cycle<br>(X-Y-Z, 120 cycles, 6 hours)                                                         | DCR change $\leq \pm 15$ %<br>No mechanical damage                   | MIL-STD-202G<br>Method 201A                     |



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

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

\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.

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## SinglFuse™ SF-3812TL-T Series Applications

- Lighting systems
- Power adaptors
- Power supplies
- AC/DC converters
- Telecom equipment system power

### SF-3812TL-T Series – Time Lag & Low Power SMD Fuses

**BOURNS®**

#### Environmental Characteristics

Operating Temperature..... -55 °C to +125 °C  
 Storage Conditions  
     Temperature ..... +15 °C to +30 °C  
     Humidity..... 20 % to 70 %  
     Shelf Life..... 2 years from manufacturing date  
 Moisture Sensitivity Level ..... 1  
 ESD Classification (HBM)..... Class 6

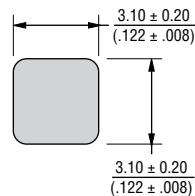
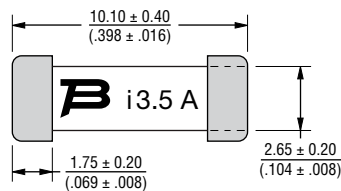
#### Typical Part Marking

Represents total content. Layout may vary.



| Rated Current | Part Marking |
|---------------|--------------|
| 0.50 A        | i 0.5 A      |
| 0.75 A        | i 0.75 A     |
| 1.00 A        | i 1 A        |
| 1.50 A        | i 1.5 A      |
| 2.00 A        | i 2 A        |
| 2.50 A        | i 2.5 A      |
| 3.00 A        | i 3 A        |
| 3.50 A        | i 3.5 A      |
| 4.00 A        | i 4 A        |
| 5.00 A        | i 5 A        |

#### Product Dimensions



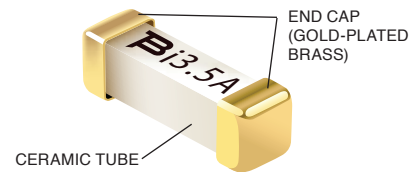
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

#### Agency Recognition

UL File Number ..... E198545

TUV File Number..... R 50421699

#### Construction



#### Packaging Quantity

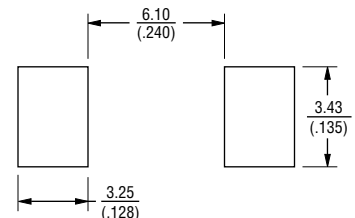
2,500 pieces per 13-inch reel

#### How to Order

**SF - 3812 TL 050 T - 2**

SinglFuse™ \_\_\_\_\_  
 Product Designator \_\_\_\_\_  
 SMD Footprint \_\_\_\_\_  
     3812 = EIA 3812  
     (10030 metric)  
 Fuse Blow Type \_\_\_\_\_  
     TL = Time Lag & Low Power  
 Rated Current \_\_\_\_\_  
     050 - 500 (0.50 A ~ 5.00 A)  
 Structure Type \_\_\_\_\_  
     T = Ceramic Tube  
 Packaging Type \_\_\_\_\_  
     - 2 = Tape & Reel

#### Recommended Pad Layout



DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

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