

**RoHS** **Pb** **303 Series, TR3®, Fast-Acting Fuse**

**Description**

The 303 Series are TR3®, fast-acting type, 125V rated fuses designed in accordance to UL 248-14.

**Features**

- Reduced PCB space requirements
- Direct solderable or plug-in versions
- Internationally approved
- Low internal resistance
- Shock safe casing
- Vibration resistant
- Halogen free
- Lead-free
- Available from 50mA to 5A

**Agency Approvals**

| Agency | Agency File Number | Ampere Range |
|--------|--------------------|--------------|
|        | E67006             | 50mA-5A      |
|        | 051378             | 50mA-5A      |

**Electrical Characteristics**

| % of Ampere Rating | Opening Time        |
|--------------------|---------------------|
| 200                | 60 Seconds, Maximum |

**Applications**

- Battery chargers
- Consumer electronics
- Power supplies
- Industrial controllers

**303 Series**
**Electrical Characteristics**

| Amp Code | Rated Current | Voltage Rating | Breaking Capacity                                      | Voltage Drop<br>$1.0 \times I_N$<br>max. (mV) | Power Dissipation<br>$1.0 \times I_N$<br>max. (mW) | Melting Integral<br>$10 \times I_N$<br>max. (A <sup>2</sup> s) | Approvals |   |
|----------|---------------|----------------|--|---|--|--|-----------|---|
|          |               |                |  |   |  |  |           |   |
| 0050     | 50mA          | 125V           | 50A / 125VAC<br>60-60 Hz/cos φ - 1<br><br>50A / 63 VDC | 800   | 40   | 0.00007  | X         | X |
| 0063     | 63mA          | 125V           |  | 780   | 50   | 0.00013  | X         | X |
| 0080     | 80mA          | 125V           |  | 730   | 60   | 0.0002   | X         | X |
| 0100     | 100mA         | 125V           |  | 700   | 70   | 0.0004   | X         | X |
| 0125     | 125mA         | 125V           |  | 650   | 85   | 0.0022   | X         | X |
| 0160     | 160mA         | 125V           |  | 600   | 100  | 0.0029   | X         | X |
| 0200     | 200mA         | 125V           |  | 550   | 110  | 0.0042   | X         | X |
| 0250     | 250mA         | 125V           |  | 500   | 125  | 0.0082   | X         | X |
| 0315     | 315mA         | 125V           |  | 450   | 145  | 0.015  | X         | X |
| 0400     | 400mA         | 125V           |  | 400   | 160  | 0.025  | X         | X |
| 0500     | 500mA         | 125V           |  | 380   | 190  | 0.042  | X         | X |
| 0630     | 630mA         | 125V           |  | 160   | 100  | 0.015  | X         | X |
| 0800     | 800mA         | 125V           |  | 155   | 125  | 0.025  | X         | X |
| 1100     | 1.00A         | 125V           |  | 150   | 155  | 0.039  | X         | X |
| 1125     | 1.25A         | 125V           |  | 145   | 185  | 0.059  | X         | X |
| 1160     | 1.60A         | 125V           |  | 140   | 225  | 0.11   | X         | X |
| 1200     | 2.00A         | 125V           |  | 130   | 260  | 0.17   | X         | X |
| 1250     | 2.50A         | 125V           |  | 125   | 315  | 0.23   | X         | X |
| 1315     | 3.15A         | 125V           |  | 120   | 380  | 0.45   | X         | X |
| 1400     | 4.00A         | 125V           |  | 110   | 440  | 1.0  | X         | X |
| 1500     | 5.00A         | 125V           | 105  | 525   | 1.5  | X  | X         |   |

Note: 1.00 means the number one with two decimal places. 1,000 means the number one thousand.

### Temperature Derating Curve



### Average Time Current Curves



### Soldering Parameters - Wave Soldering



#### Recommended Process Parameters:

| Wave Parameter  | Lead-Free Recommendation          |
|---|-----------------------------------|
| <b>Preheat:</b><br>(Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum:  | 100° C                            |
| Temperature Maximum:  | 150° C                            |
| Preheat Time:   | 60-180 seconds                    |
| <b>Solder Pot Temperature:</b>                              | 260° C Maximum                    |
| <b>Solder Dwell Time:</b>                                   | 2-5 seconds                       |

#### Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350° C +/- 5°C  
Heating Time: 5 seconds max.

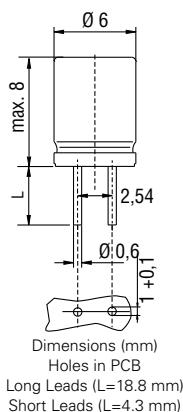
**Note: These devices are not recommended for IR or Convection Reflow process.**

### Product Characteristics

|                                  |  |
|----------------------------------|--|
| <b>Materials</b>                 | Base/Cap: Black Thermoplastic Base<br>Polyamide PA 6.6, UL 94V-0<br>Brass, Nickel-plated Cap<br>Round Pins: Copper alloy, Tin-plated |
| <b>Lead Pull Strength</b>        | 10 N (EN 60068-2-21)   |
| <b>Solderability</b>             | 260°C, ≤ 3s. (Wave)<br>350°C, ≤ 1s. (Soldering Iron)   |
| <b>Soldering Heat Resistance</b> | 260°C, 10s. (IEC 60068-2-20)<br>350°C, 3s. (Soldering Iron)  |

|                              |   |
|------------------------------|---|
| <b>Operating Temperature</b> | -25°C to +70°C (consider de-rating)   |
| <b>Climatic Category</b>     | -25°C/+70°C/21 days<br>(EN 60068-1.3)   |
| <b>Stock Conditions</b>      | +10°C to +60°C RH,<br>≤ 75% yearly average, without dew   |
| <b>Vibration Resistance</b>  | 24 cycles at 15 min. each<br>(EN 60068-6)<br>10 - 60 Hz at 0.75 mm amplitude<br>60 - 2000 Hz at 10 g acceleration |

### Dimensions



### Part Numbering System



### Packaging

| Packaging Option  | Packaging Specification | Quantity | Quantity & Packaging Code | Reel Size |
|-------------------|-------------------------|----------|---------------------------|-----------|
| <b>303 Series</b> |                         |          |                           |           |
| Tape & Ampopack   | N/A                     | 1,500    | 000                       | N/A       |
| Short Leads       | N/A                     | 200      | 013                       | N/A       |
| Short Leads       | N/A                     | 300      | 042                       | N/A       |