

SinglFuse™ SF-0603FP Series Features

- Fast acting precision thin film chip fuse for overcurrent protection
- 1608 (EIA 0603) miniature footprint
- Surface mount packaging for automated assembly
- UL listed (UL 248-14)
- RoHS compliant* and halogen free**

SF-0603FP Series - Fast Acting Precision Surface Mount Fuses

Electrical Characteristics

| Model | Rated Current (Amps) | Fusing Time | Resistance Tolerance $\pm 25\%$ (m Ω) *** | Rated Voltage | Breaking Capacity | Typical I ² t (A ² s) **** |
|--------------|----------------------|---|---|---------------|-------------------|--|
| SF-0603FP050 | 0.50 | Open within 5 sec. at 200 % rated current | 260 | DC 50 V | DC 50 V 50 A | 0.088 |
| SF-0603FP063 | 0.63 | | 218 | DC 32 V | DC 32 V 50 A | 0.0125 |
| SF-0603FP080 | 0.80 | | 132 | | | 0.0206 |
| SF-0603FP100 | 1.00 | | 84.5 | | | 0.0211 |
| SF-0603FP125 | 1.25 | | 63 | | | 0.0472 |
| SF-0603FP150 | 1.50 | | 50.5 | | | 0.0623 |
| SF-0603FP160 | 1.60 | | 46 | | | 0.0817 |
| SF-0603FP200 | 2.00 | | 32 | | | 0.1176 |
| SF-0603FP250 | 2.50 | | 25.5 | | | 0.1807 |
| SF-0603FP300 | 3.00 | | 20 | | | 0.3177 |
| SF-0603FP315 | 3.15 | | 19 | | | 0.3615 |
| SF-0603FP400 | 4.00 | | 13 | | | 0.5348 |
| SF-0603FP500 | 5.00 | | 10 | | | 0.7726 |

*** Resistance value measured with less than 10 % of rated current. Tolerance $\pm 25\%$.

****Typical I²t value measured at 10x rated current.

Reliability Testing

| Parameter | Requirement | Test Method |
|---------------------------------|--|--|
| Carrying Capacity | No fusing | Rated current, 4 hours |
| Fusing Time | Within 5 seconds | 200 % of its rated current |
| Interrupting Ability | No mechanical damages | After the fuse is interrupted, rated voltage applied for 30 seconds again |
| Bending Test | No mechanical damages | Distance between holding points: 90 mm, Bending: 3 mm, 1time, 30 seconds |
| Resistance to Solder Heat | $\pm 20\%$ | 260 °C ± 5 °C, 10 seconds ± 1 second |
| Solderability | 95 % coverage minimum | 235 °C ± 5 °C, 2 ± 0.5 second 245 °C ± 5 °C, 2 ± 0.5 second (lead free) |
| Temperature Rise | <75 °C | 100 % of its rated current, measure of surface temperature |
| Resistance to Dry Heat | $\pm 20\%$ | 105 °C ± 5 °C, 1000 hours |
| Resistance to Solvent | No evident damage on protective coating and marking | 23 °C ± 5 °C of isopropyl alcohol, 90 seconds |
| Residual Resistance | 10k ohms or more | Measure DC resistance after fusing |
| Thermal Shock | $\Delta R < 10\%$ | -20 °C / +25 °C / +125 °C / +25 °C, 10 cycles |
| UL File Number | E198545 http://www.ul.com/ Follow link to Online Certificates Directory, then enter UL File No. E198545, or click here | |

Environmental Characteristics

| | |
|----------------------------------|---------------------------------|
| Operating Temperature | -20 °C to +105 °C |
| Storage Conditions | |
| Temperature | +5 °C to +35 °C |
| Humidity | 40 % to 75 % |
| Shelf Life | 2 years from manufacturing date |
| Moisture Sensitivity Level | 1 |
| ESD Classification (HBM) | Class 6 |

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* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** 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.

"SinglFuse" is a trademark of Bourns, Inc.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

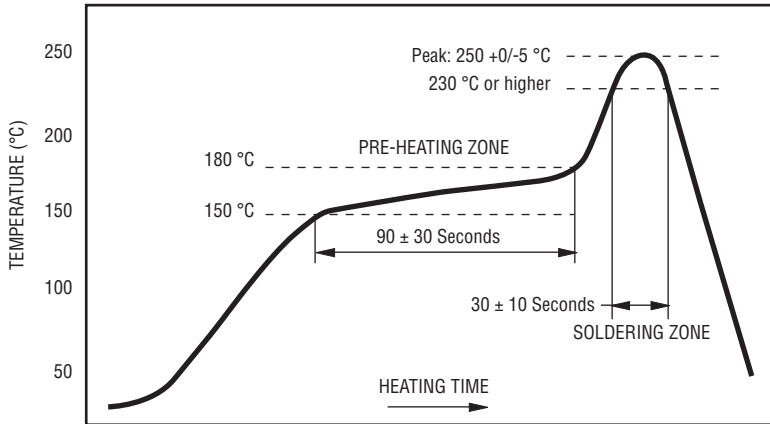
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SingFuse™ SF-0603FP Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- DVDs
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set top boxes
- Industrial controllers

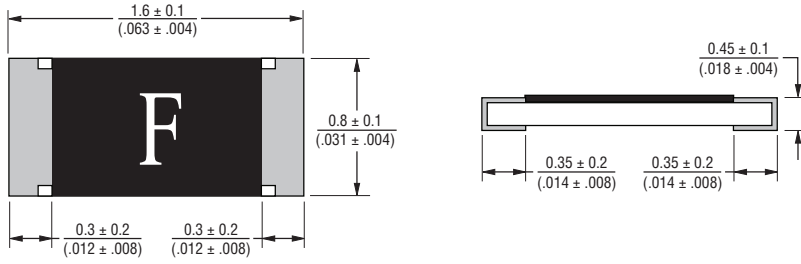
SF-0603FP Series - Fast Acting Precision Surface Mount Fuses **BOURNS®**

Solder Reflow Recommendations



PEAK: 250 +0/-5 °C, 5 seconds
 PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds
 SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

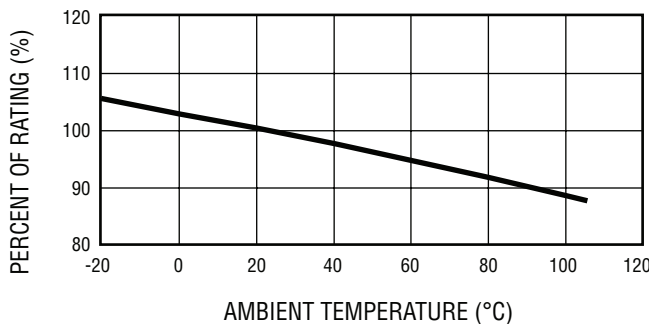
Product Dimensions



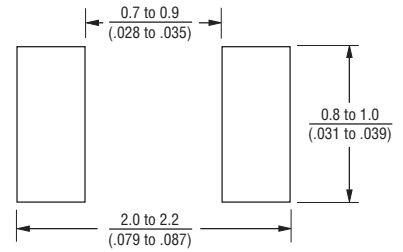
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

PACKAGING: 5,000 pcs./reel

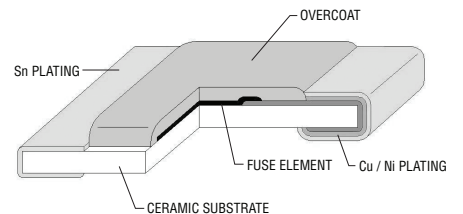
Thermal Derating Curve



Recommended Pad Layout



Construction & Material Content



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