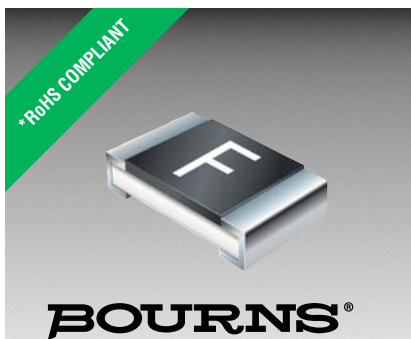




## SinglFuse™ SF-0603F Series Features

- Single blow fuse for overcurrent protection
- 1608 (EIA 0603) miniature footprint
- Fast-acting fuse
- UL listed
- RoHS compliant\* and halogen free\*\*
- Thin film chip fuse
- Surface mount packaging for automated assembly

## SF-0603F Series - Fast Acting Surface Mount Fuses

### Electrical Characteristics

| Model       | Rated Current (Amps) | Fusing Time                               | Resistance (mΩ) Typ.*** | Rated Voltage | Breaking Capacity | Typical I <sup>2</sup> t (A <sup>2</sup> s) |
|-------------|----------------------|-------------------------------------------|-------------------------|---------------|-------------------|---------------------------------------------|
| SF-0603F050 | 0.50                 | Open within 1 min. at 200 % rated current | 250                     | DC 50 V       | DC 50 V<br>50 A   | 0.005                                       |
| SF-0603F063 | 0.63                 |                                           | 173                     | DC 32 V       | DC 32 V<br>50 A   | 0.007                                       |
| SF-0603F080 | 0.80                 |                                           | 115                     |               |                   | 0.014                                       |
| SF-0603F100 | 1.00                 |                                           | 88                      |               |                   | 0.016                                       |
| SF-0603F125 | 1.25                 |                                           | 63                      |               |                   | 0.027                                       |
| SF-0603F150 | 1.50                 |                                           | 45                      |               |                   | 0.037                                       |
| SF-0603F160 | 1.60                 |                                           | 42                      |               |                   | 0.041                                       |
| SF-0603F200 | 2.00                 |                                           | 33                      |               |                   | 0.044                                       |
| SF-0603F250 | 2.50                 |                                           | 24                      | DC 24 V       | DC 24 V<br>50 A   | 0.055                                       |
| SF-0603F300 | 3.00                 |                                           | 21                      |               |                   | 0.082                                       |
| SF-0603F315 | 3.15                 |                                           | 19                      |               |                   | 0.089                                       |
| SF-0603F400 | 4.00                 |                                           | 15                      | DC 32 V       | DC 32 V<br>50 A   | 0.239                                       |
| SF-0603F500 | 5.00                 |                                           | 12                      |               |                   | 0.433                                       |

\*\*\*Resistance value was measured with less than 10 % of rated current.

### Reliability Testing

| Parameter                       | Requirement                           | Test Method                                                               |
|---------------------------------|---------------------------------------|---------------------------------------------------------------------------|
| Carrying Capacity .....         | No fusing .....                       | Rated current, 4 hours                                                    |
| Fusing Time .....               | Within 1 minute .....                 | 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, 1 time, 30 seconds |
| Resistance to Solder Heat ..... | ±20 % .....                           | 260 °C ±5 °C, 10 seconds ±1 second                                        |
| Solderability .....             | 95 % coverage minimum .....           | 235 °C ±5 °C, 2 ±0.5 second                                               |
| Temperature Rise .....          | <75 ° .....                           | 245 °C ±5 °C, 2 ±0.5 second (lead free)                                   |
| Resistance to Dry Heat .....    | ±20 % .....                           | 100 % of its rated current, measure of surface temperature                |
| Resistance to Solvent .....     | No evident damage on protective ..... | 105 °C ±5 °C, 1000 hours                                                  |
| Residual Resistance .....       | 10k W or more .....                   | 23 °C ±5 °C of isopropyl alcohol, 90 seconds coating and marking          |
| Thermal Shock .....             | DR < 10 % .....                       | Measure DC resistance after fusing                                        |
|                                 |                                       | -20 °C / +25 °C / +125 °C / +25 °C, 10 cycles                             |

### Typical Part Marking

Represents total content. Layout may vary.



RATING CURRENT (A)  
 F = 0.50 S = 2.00  
 I = 0.63 T = 2.50  
 K = 0.80 3 = 3.00  
 L = 1.00 U = 3.15  
 M = 1.25 W = 4.00  
 P = 1.50 Y = 5.00  
 N = 1.60

### How to Order

SF - 0603 F 050 - 2

SinglFuse™  
 Product Designator

SMD Footprint  
 1608 (EIA 0603) size

Fuse Blow Type  
 F = Fast acting  
 S = Slow blow

Rated Current  
 050-500 (500 mA - 5.00 A)

Packaging Type  
 - 2 = Tape & Reel (5,000 pcs./reel)

**BOURNS®**

#### Asia-Pacific:

Tel: +886-2 2562-4117  
 Fax: +886-2 2562-4116

#### Europe:

Tel: +41-41 768 5555  
 Fax: +41-41 768 5510

#### The Americas:

Tel: +1-951 781-5500  
 Fax: +1-951 781-5700

[www.bourns.com](http://www.bourns.com)

\* RoHS Directive 2002/95/EC Jan 27 2003 including Annex.

\*\* Bourns is using the definition that appears to be the prevalent definition used as the industry standard at this time. The Bourns definition of "halogen-free" is: Bromine (Br) content: ≤ 900 ppm; Chlorine (Cl) content: ≤ 900 ppm; Total Br + Cl content: ≤ 1500 ppm.

"SinglFuse" is a trademark of Bourns, Inc.

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.

## SinglFuse™ SF-0603F 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-0603F Series - Fast Acting Surface Mount Fuses

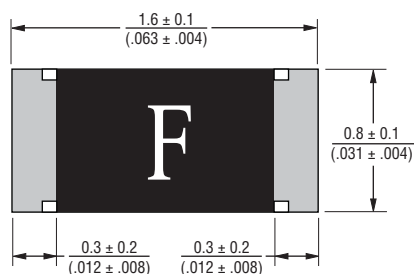
**BOURNS®**

### Solder Reflow Recommendations



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

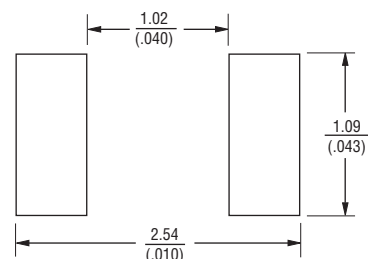
### Product Dimensions



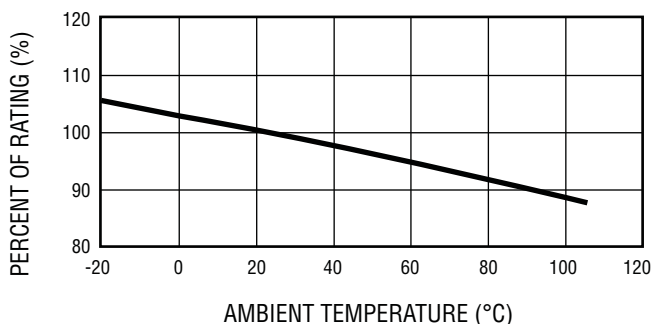
PACKAGING: 5,000 pcs./reel

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

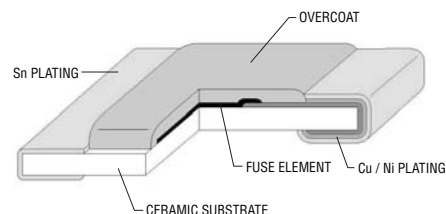
### Recommended Pad Layout



### Thermal Derating Curve



### Construction & Material Content



Operating Temperature.....-40 °C to +105 °C

Storage Conditions

Temperature .....+5 °C to +35 °C

Humidity.....40 % to 75 %

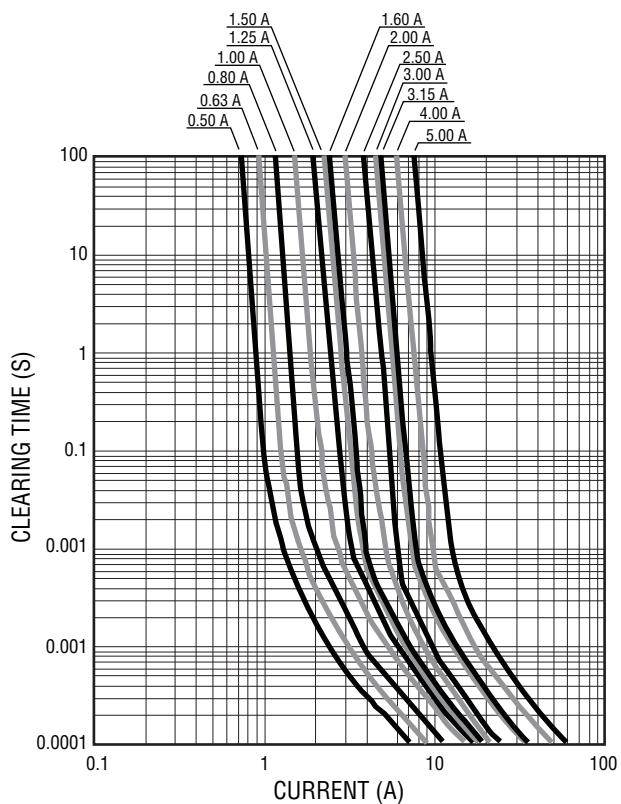
Shelf Life.....2 years from manufacturing date

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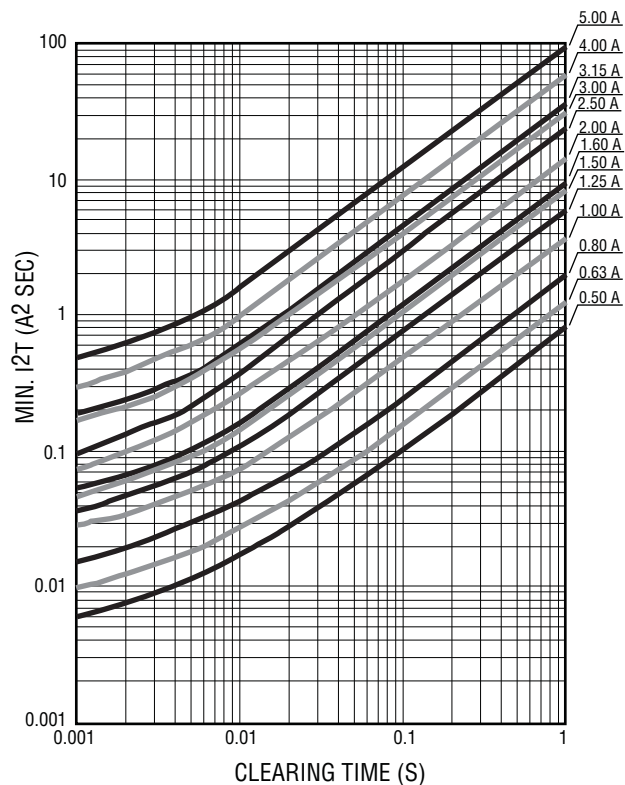
# SF-0603F Series - Fast Acting Surface Mount Fuses

**BOURNS®**

**Average Time Current Curves**



**Minimum I<sup>2</sup>T V Clear Time Curves**



REV. D 03/13

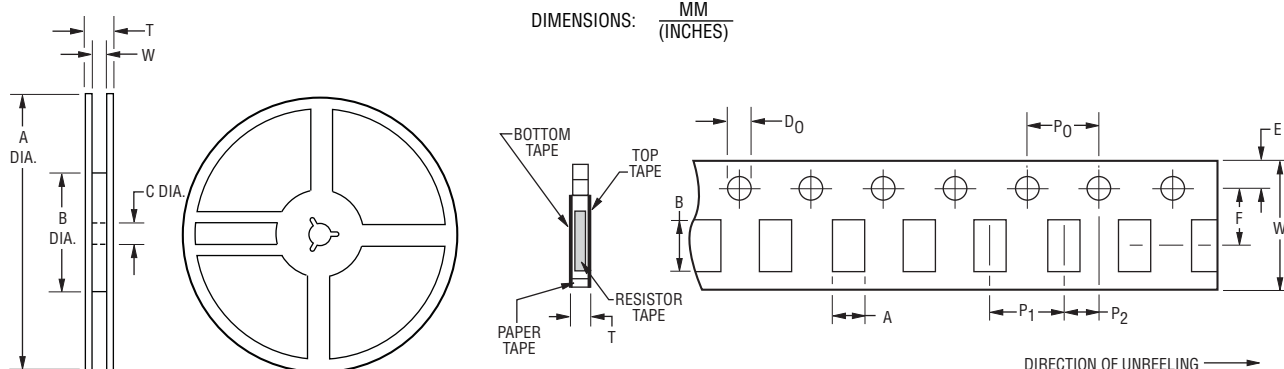
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# SF-0603F Series Tape and Reel Specifications

**BOURNS®**

| Tape Dimensions        | SF-0603F Series<br>per EIA 481-2        |
|------------------------|-----------------------------------------|
| W                      | $\frac{8.0 \pm 0.2}{(.315 \pm .008)}$   |
| P <sub>0</sub>         | $\frac{4.0 \pm 0.1}{(.157 \pm .004)}$   |
| P <sub>1</sub>         | $\frac{4.0 \pm 0.1}{(.157 \pm .004)}$   |
| P <sub>2</sub>         | $\frac{2.0 \pm 0.05}{(.079 \pm .002)}$  |
| A                      | $\frac{1.1 \pm 0.1}{(.043 \pm .004)}$   |
| B                      | $\frac{1.9 \pm 0.1}{(.075 \pm .004)}$   |
| F                      | $\frac{3.5 \pm 0.05}{(.138 \pm .002)}$  |
| E                      | $\frac{1.75 \pm 0.1}{(.069 \pm .004)}$  |
| D <sub>0</sub>         | $\frac{1.5 + 0.1/-0}{(.059 + .004/-0)}$ |
| T                      | $\frac{0.64 \pm 0.1}{(.025 \pm .004)}$  |
| <b>Reel Dimensions</b> |                                         |
| A                      | $\frac{180 +0/-3.0}{(7.087 +0/- .118)}$ |
| B Min.                 | $\frac{60.0}{(2.362)}$                  |
| C                      | $\frac{13.0 \pm 1.0}{(.512 \pm .039)}$  |
| W                      | $\frac{9.0 \pm 1.0}{(.354 \pm .039)}$   |
| T                      | $\frac{11.4 \pm 2.0}{(.449 \pm .079)}$  |



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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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