



SinglFuse™ SF-0603HIxxxF Series Features

- Single blow fuse for overcurrent protection
- 1608 (EIA 0603) miniature footprint
- High inrush current withstand fuse
- UL 248-14 listed
- RoHS compliant* and halogen free**
- Thin film chip design
- Surface mount packaging for automated assembly

SF-0603HIxxxF Series - High Inrush Current Withstand Surface Mount Fuses

Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I ² t (A ² s) ****
SF-0603HI050F-2	0.50	Open within 60 sec. at 200 % rated current	0.1550	DC 65 V	AC/DC 35 V 50 A DC 65 V 13 A	0.019
SF-0603HI075F-2	0.75		0.0830			0.036
SF-0603HI100F-2	1.00		0.0500			0.052
SF-0603HI150F-2	1.50		0.0290			0.110
SF-0603HI200F-2	2.00		0.0200	DC 35 V	AC/DC 35 V 35 A AC/DC 24 V 50 A	0.310
SF-0603HI250F-2	2.50		0.0165			0.400
SF-0603HI300F-2	3.00		0.0140			0.600
SF-0603HI350F-2	3.50		0.0120			0.800
SF-0603HI400F-2	4.00		0.0095			1.200

*** Resistance value measured with ≤10 % rated current at 25 °C ambient.

**** Melting I²t calculated at 0.001 second pre-arcing time.

Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Bending	≤1 A: DCR change ≤ ±10 % >1 A: DCR change ≤ ±20 %	2 mm	Refer to STP document
2	Solderability	Minimum 95 % coverage	One dip at 255 °C for 5 seconds	MIL-STD-202 Method 208
3	Thermal shock	DCR change ≤ ±10 % No mechanical damage	100 cycles between -55 °C and +125 °C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change ≤ ±10 % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change ≤ ±10 % No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change ≤ ±10 % No mechanical damage	0.4 inch D.A. or 30 G between 5-3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change ≤ ±10 % No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
8	Life	No electrical "opens" during testing Voltage drop change shall be less than ±10 % of initial value	75 % rated current for 2000 hours at ambient temperature between +20 °C and +30 °C	Refer to STP document

Agency Recognition

UL File Number E198545

<http://www.ul.com/> Follow link to Online Certificates Directory, then enter UL File No. E198545, or [click here](#)

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* 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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SingIFuse™ SF-0603HIxxxF Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- MP3 players
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set-top boxes
- Industrial controllers
- Battery Management Systems (BMS)
- LED lighting
- Power tools

SF-0603HIxxxF Series - High Inrush Current Withstand Surface Mount Fuses **BOURNS®**

Environmental Characteristics

Operating Temperature.....-55 °C to +90 °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

Typical Part Marking

Represents total content. Layout may vary.



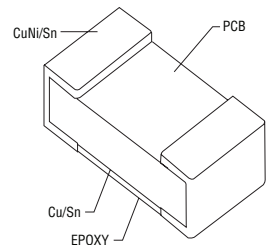
RATED CURRENT (A)
 C = 0.50 J = 2.50
 D = 0.75 L = 3.00
 E = 1.00 N = 3.50
 T = 1.50 P = 4.00
 F = 2.00

How to Order

SF - 0603 HI 015 F - 2

SingIFuse™
 Product Designator
 SMD Footprint
 0603 = 1608 (EIA 0603) size
 Fuse Blow Type
 HI = High Inrush Current Withstand
 Rated Current
 050 ~ 400 (500 mA ~ 4.0 A)
 Structure Type
 F = Thin film
 Packaging Type
 - 2 = Tape & Reel

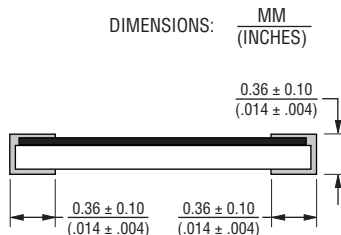
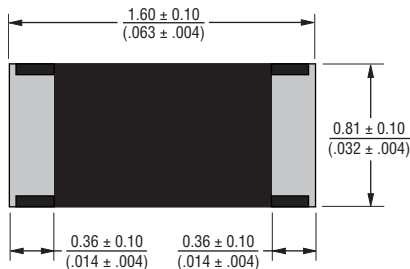
Construction



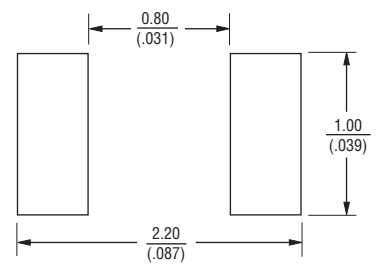
Packaging Quantity

8,000 pieces per 7-inch reel

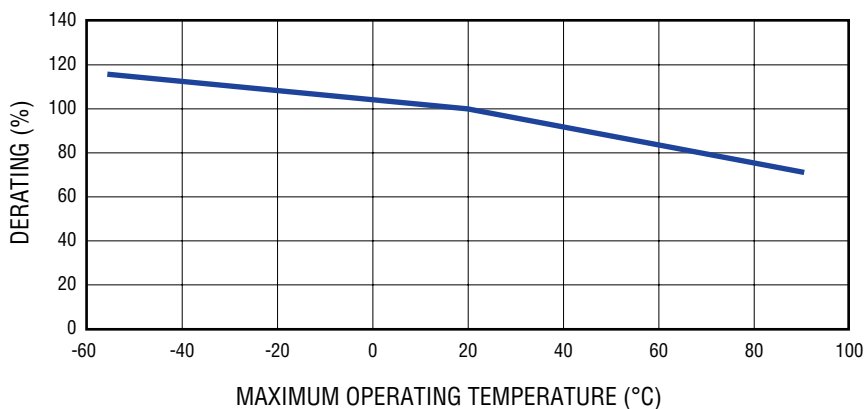
Product Dimensions



Recommended Pad Layout

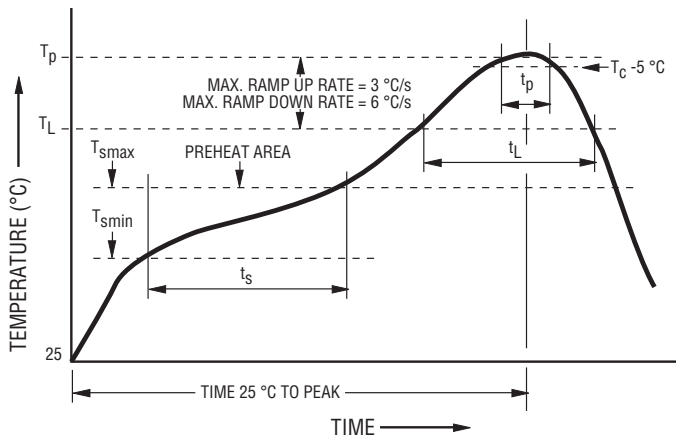


Current Rating Thermal Derating Curve



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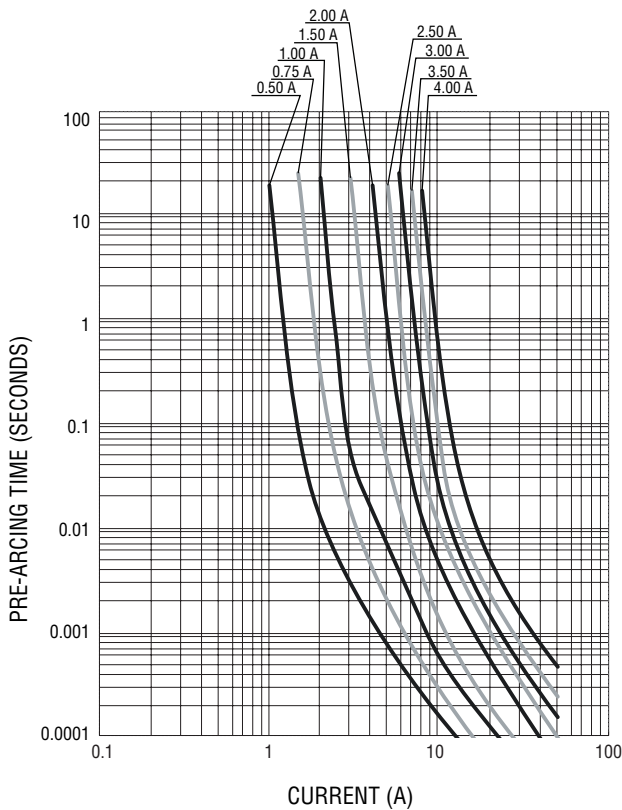
Solder Reflow Recommendations



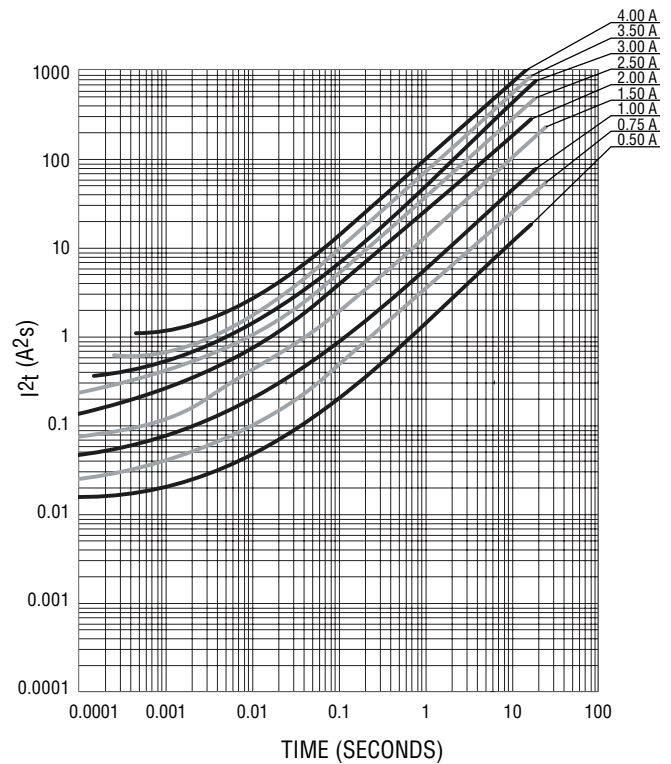
Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. (T_{smin}) Temperature Max. (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	150 °C 200 °C 60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L) Time (t_L) maintained above T_L	217 °C 60~150 seconds
Peak Package Body Temperature (T_p)	260 °C
Time (t_p)* within 5 °C of the specified classification temperature (T_c)	30 seconds*
Ramp Down Rate (T_p to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



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SF-0603HlxxxF Series Tape and Reel Packaging Specifications

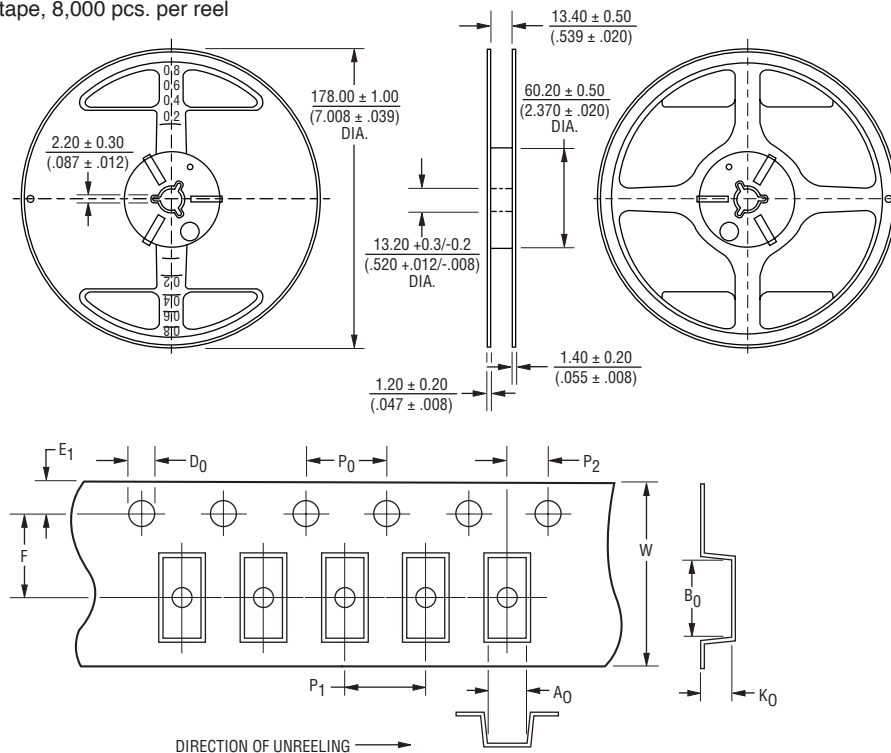


SF-0603HlxxxF Series per EIA 481-2

Tape Dimensions

W	$\frac{8.10 \pm 0.20}{(.319 \pm .008)}$
P ₀	$\frac{4.0 \pm 0.10}{(.157 \pm .004)}$
P ₁	$\frac{4.0 \pm 0.10}{(.157 \pm .004)}$
P ₂	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
A ₀	$\frac{1.00 \pm 0.10}{(.039 \pm .004)}$
B ₀	$\frac{1.80 \pm 0.10}{(.071 \pm .004)}$
F	$\frac{3.50 \pm 0.05}{(.138 \pm .002)}$
E ₁	$\frac{1.75 \pm 0.10}{(.069 \pm .004)}$
D ₀	$\frac{1.55 \pm 0.05}{(.061 \pm .002)}$

PACKAGING: Paper tape, 8,000 pcs. per reel



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

REV. A 06/18

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