

SinglFuse™ SF-0603HIxxxM 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**
- Multilayer SMD design
- Surface mount packaging for automated assembly

SF-0603HIxxxM 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-0603HI100M-2	1.00	Open within 60 sec. at 200 % rated current	0.210	DC 32 V	DC 32 V 50 A	0.08
SF-0603HI150M-2	1.50		0.101			0.11
SF-0603HI200M-2	2.00		0.057			0.24
SF-0603HI250M-2	2.50		0.042			0.56
SF-0603HI300M-2	3.00		0.030			0.72
SF-0603HI350M-2	3.50		0.022			1.10
SF-0603HI400M-2	4.00		0.018			2.08
SF-0603HI450M-2	4.50		0.014			2.63
SF-0603HI500M-2	5.00		0.013			3.25
SF-0603HI600M-2	6.00		0.010			4.00
SF-0603HI700M-2	7.00		0.008		5.00	
SF-0603HI800M-2	8.00		0.006		7.00	

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

**** Melting I²t calculated at 1000 % of current rating.

Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Solderability	Minimum 95 % coverage	One dip at 245 °C for 5 seconds	MIL-STD-202 Method 208
2	Soldering heat resistance	DCR change ≤ 10 % No mechanical damage	One dip at 260 °C for 60 seconds	MIL-STD-202 Method 210
3	Moisture resistance	DCR change ≤ ±15 % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
4	Salt spray	DCR change ≤ ±10 % No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
5	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
6	Mechanical shock	DCR change ≤ ±10 % No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
7	Thermal Shock	DCR change ≤ ±10 % No mechanical damage	100 cycles between -65 °C and +125 °C	MIL-STD-202 Method 107
8	Life	No electrical “opens” during testing Voltage drop change shall be less than ±20 % of initial value	80 % rated current (75 % for < 1 A fuses) for 2000 hours at ambient temperature between +20 °C and +30 °C	Refer to STP document

Agency Recognition

UL File Number E198545

* 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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WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

SingIFuse™ SF-0603HlxxxM Series Applications

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

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

Environmental Characteristics

Operating Temperature.....-55 °C to +125 °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)

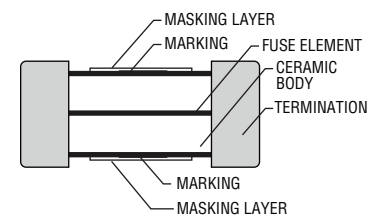
E = 1.00	M = 4.00
G = 1.50	T = 4.50
I = 2.00	N = 5.00
J = 2.50	O = 6.00
K = 3.00	P = 7.00
L = 3.50	R = 8.00

How to Order

SF - 0603 HI 100 M - 2

SingIFuse™
 Product Designator
 SMD Footprint
 0603 = 1608 (EIA 0603) size
 Fuse Blow Type
 HI = High Inrush Current Withstand
 Rated Current
 100 ~ 800 (1.0 A ~ 8.0 A)
 Structure Type
 M = Multilayer
 Packaging Type
 - 2 = Tape & Reel

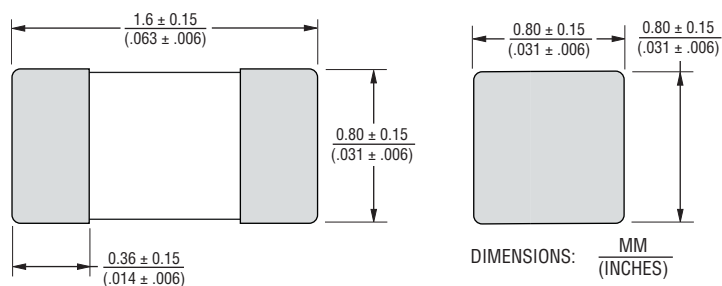
Construction



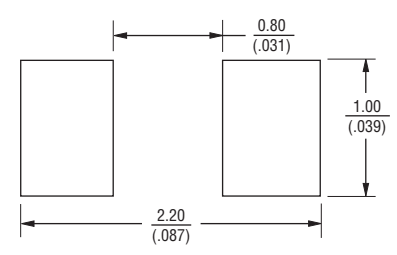
Packaging Quantity

4,000 pieces per 7-inch reel

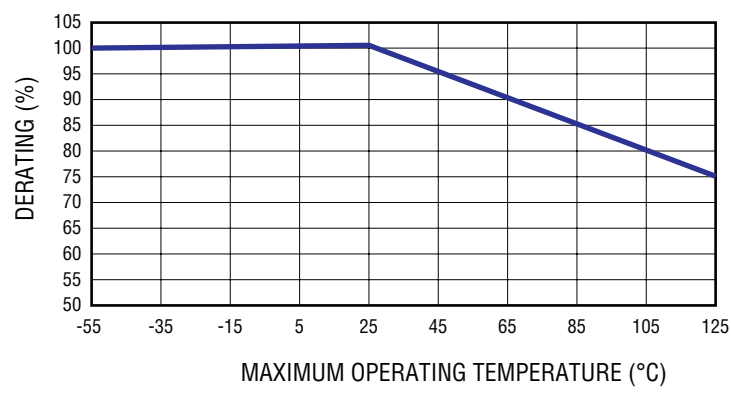
Product Dimensions



Recommended Pad Layout

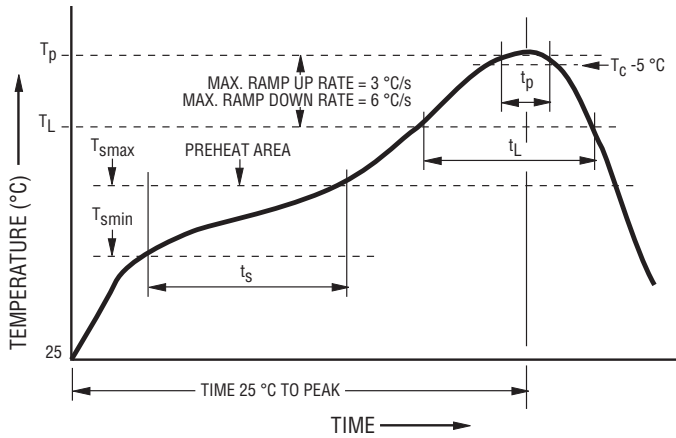


Current Rating Thermal Derating Curve



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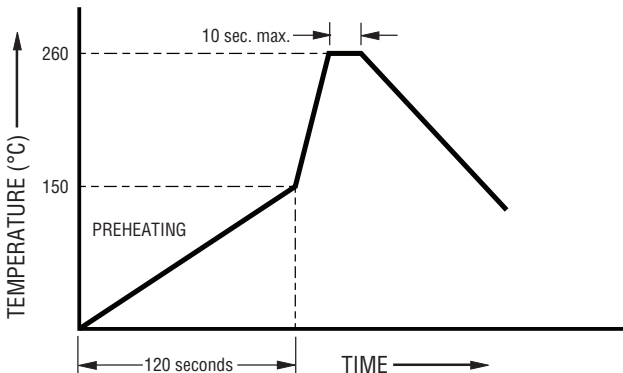
Solder Reflow Recommendations



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.

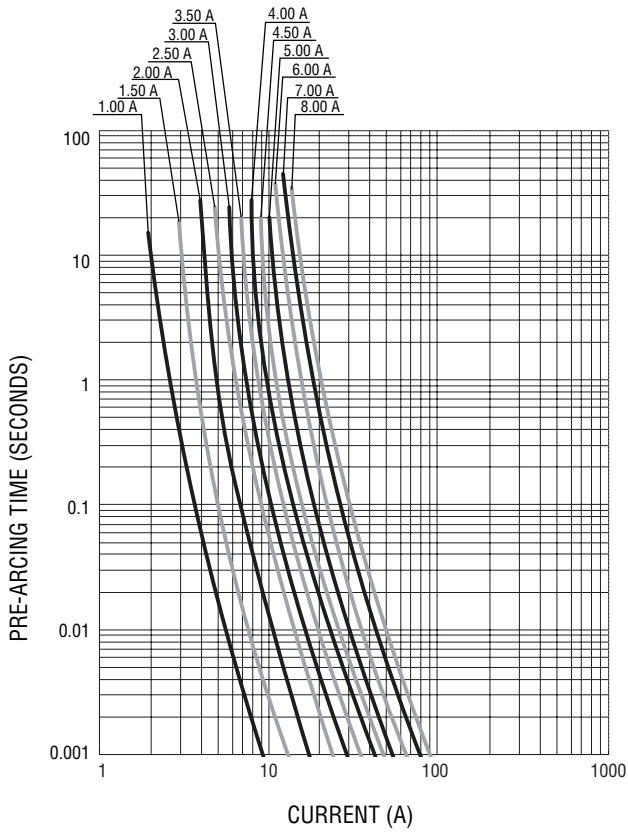
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering

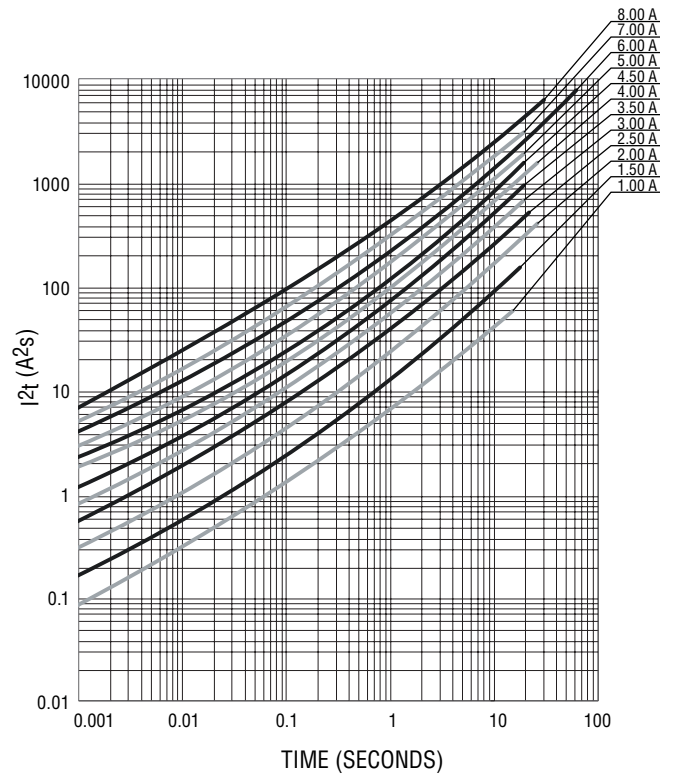


Wave soldering is suitable for 0603 size models.

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



SF-0603HlxxxM Series Tape and Reel Packaging Specifications

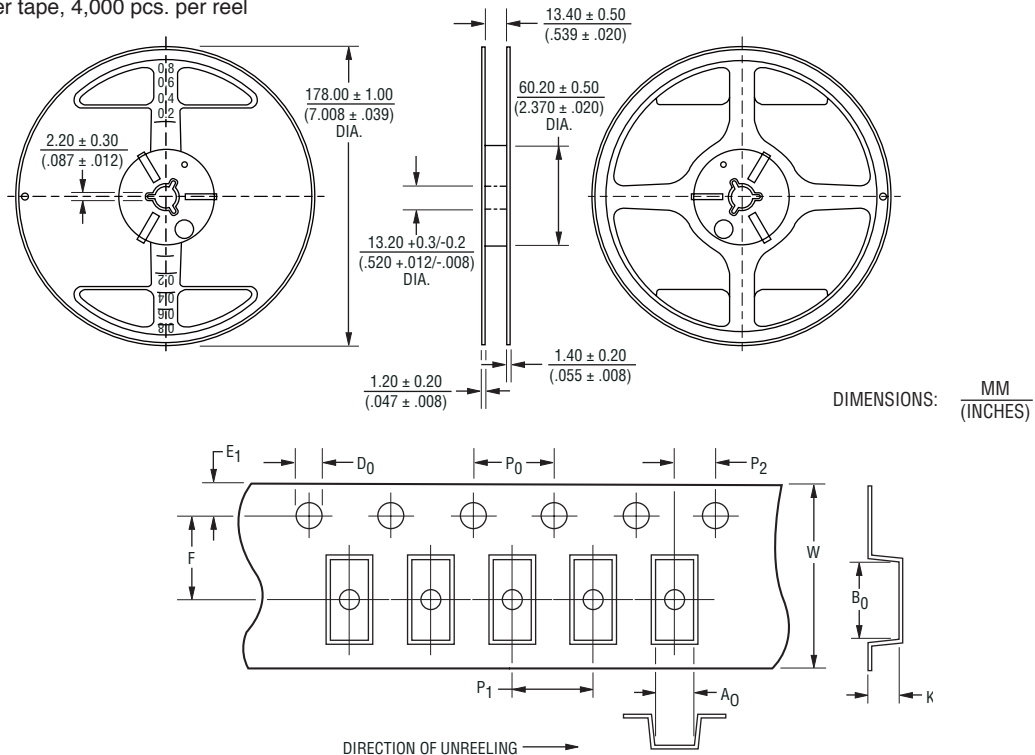


SF-0603HlxxxM Series per EIA 481-2

Tape Dimensions

W	$\frac{8.00 \pm 0.10}{(.315 \pm .004)}$
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	$\frac{1.50 \pm 0.10}{(.059 \pm .004)}$

PACKAGING: Paper tape, 4,000 pcs. per reel



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