

SingIFuse™ SF-0603HI-M Series Features

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

SF-0603HI-M Series - High Inrush Current Withstand Surface Mount Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
200 %	1 second	60 seconds
1000 % (1 A - 5 A)	0.0002 seconds	0.02 seconds

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s) ****	Certifications cUL: E198545
SF-0603HI100M-2	1.00	0.2090	32 VDC	50 A @ 32 VDC	0.081	✓
SF-0603HI150M-2	1.50	0.1005			0.111	✓
SF-0603HI200M-2	2.00	0.0567			0.242	✓
SF-0603HI250M-2	2.50	0.0418			0.566	✓
SF-0603HI300M-2	3.00	0.0299			0.727	✓
SF-0603HI350M-2	3.50	0.0219			1.11	✓
SF-0603HI400M-2	4.00	0.0179			2.101	✓
SF-0603HI450M-2	4.50	0.0139			2.656	✓
SF-0603HI500M-2	5.00	0.0129			3.283	✓
SF-0603HI600M-2	6.00	0.0100		70 A @ 32 VDC	4.0	✓
SF-0603HI700M-2	7.00	0.0080		80 A @ 32 VDC	5.1	✓
SF-0603HI800M-2	8.00	0.0060			7.1	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±30 %.
**** Melting I^2t calculated at 1000 % of current rating.

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CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

*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.

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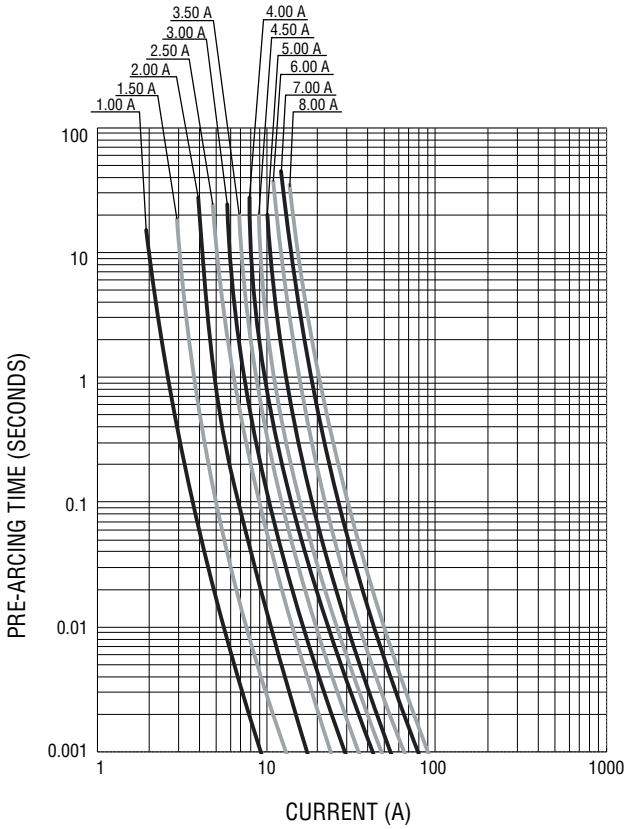
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SingIFuse™ SF-0603HI-M Series Applications

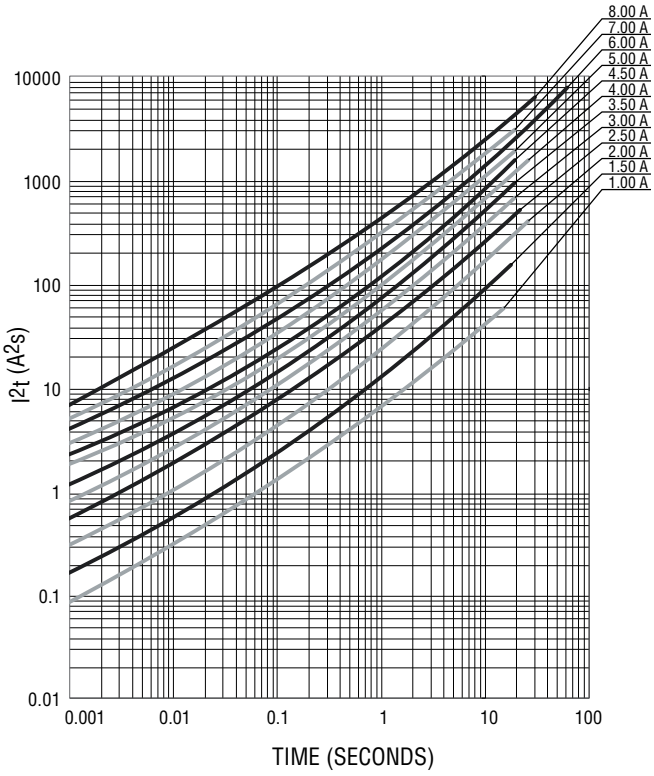
- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- MP3 players
- Cellphones
- Rechargeable battery packs
- Battery chargers
- Set-top boxes
- Industrial controllers
- Battery Management Systems (BMS)
- LED lighting
- Power tools

SF-0603HI-M Series - High Inrush Current Withstand Surface Mount Fuses

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



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

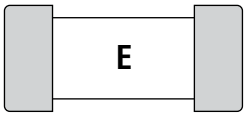
Moisture Sensitivity Level 1
ESD Classification (HBM)..... Class 6

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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

SinglFuse™ 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)

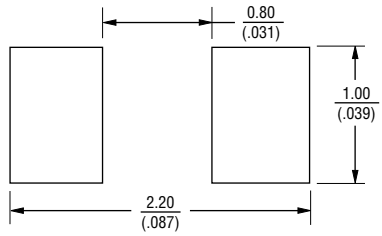
Structure Type
M = Multilayer

Packaging Type
- 2 = Tape & Reel

Packaging

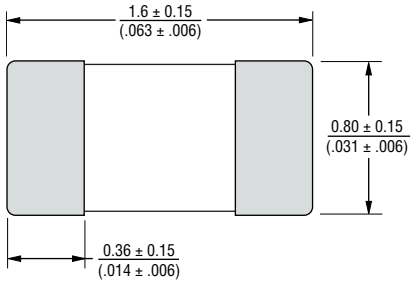
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	4,000 pieces
Packaging Code	-2

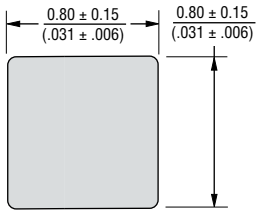
Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

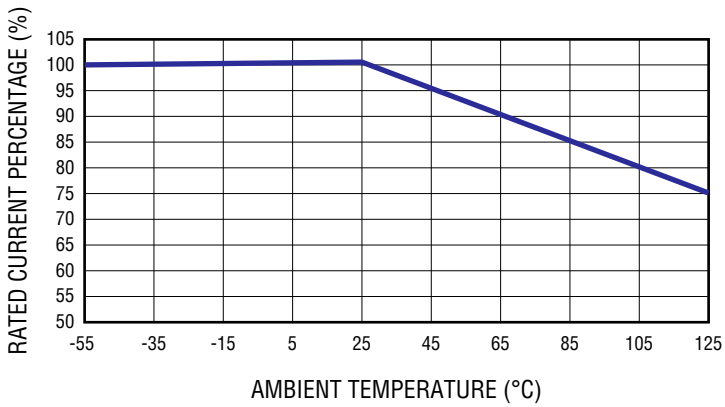
Product Dimensions





DIMENSIONS: MM / (INCHES)

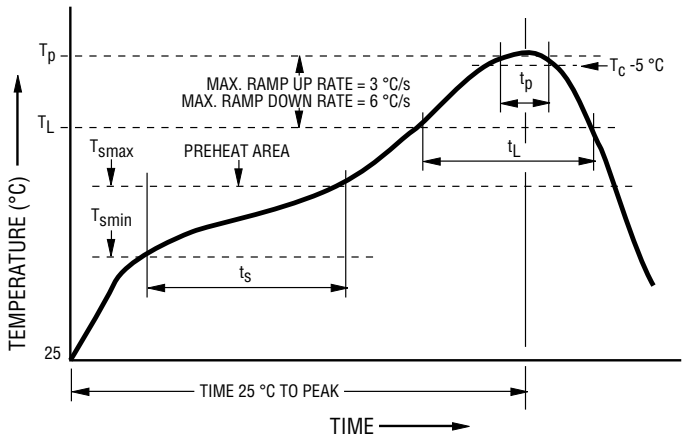
Current Rating Thermal Derating Curve



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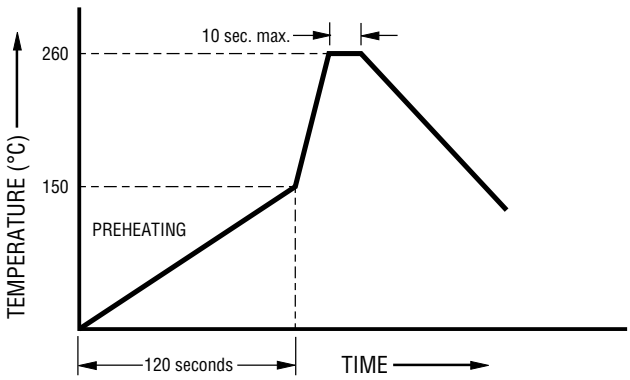
Solder Reflow Recommendations



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 (Tp) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering



Wave soldering is suitable for 0603 size models.

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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

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