SingIFuse™ 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^2t (A^2s) ****
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		DC 32 V 80 A	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 I^2t 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.

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

SingIFuse™ SF-0603HIxxxM 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-0603HIxxxM 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)

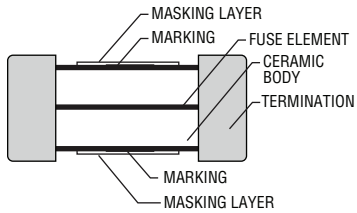
E = 1.00	M = 4.00
G = 1.50	T = 4.50
I = 2.00	N = 5.00
J = 2.50	O = 6.00
K = 3.00	P = 7.00
L = 3.50	R = 8.00

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

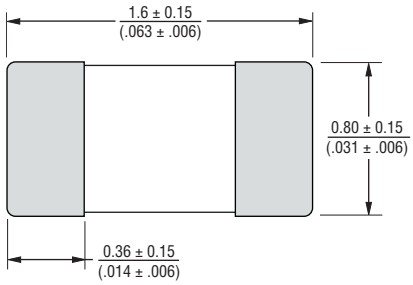
Construction

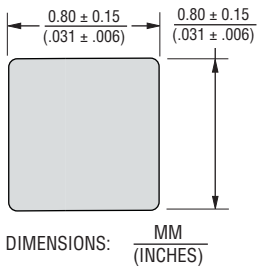


Packaging Quantity

4,000 pieces per 7-inch reel

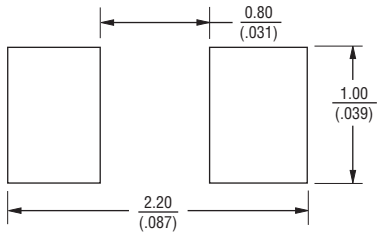
Product Dimensions



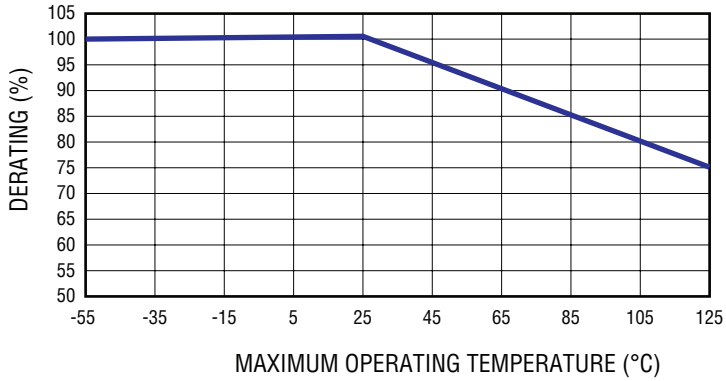


DIMENSIONS: MM (INCHES)

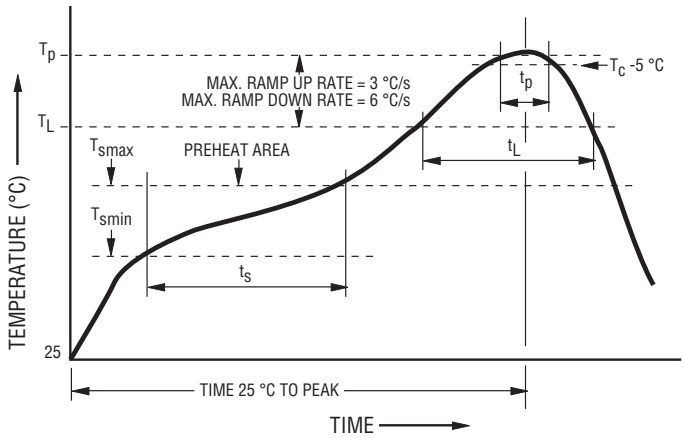
Recommended Pad Layout



Current Rating Thermal Derating Curve



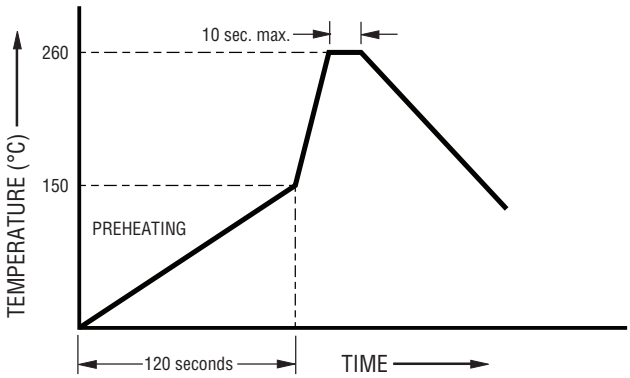
Solder Reflow Recommendations



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.

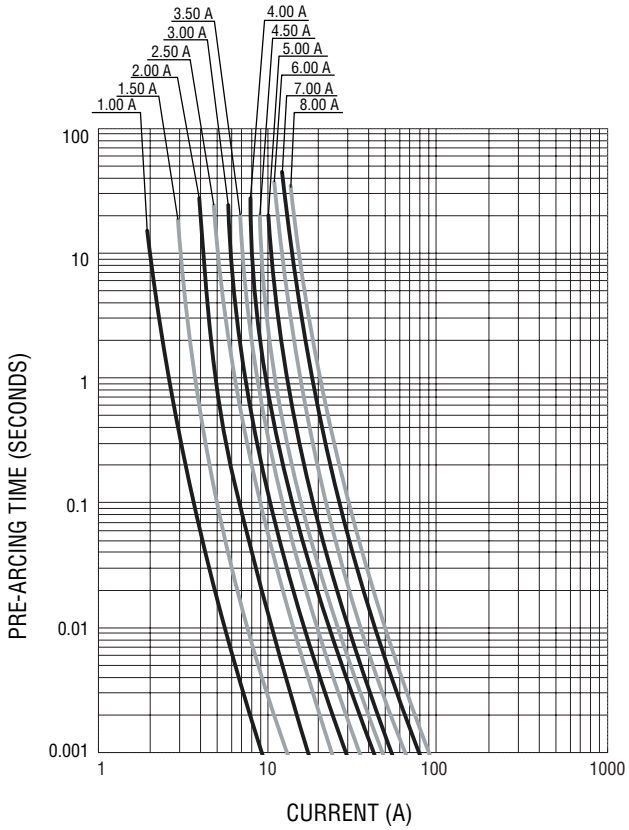
* Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering

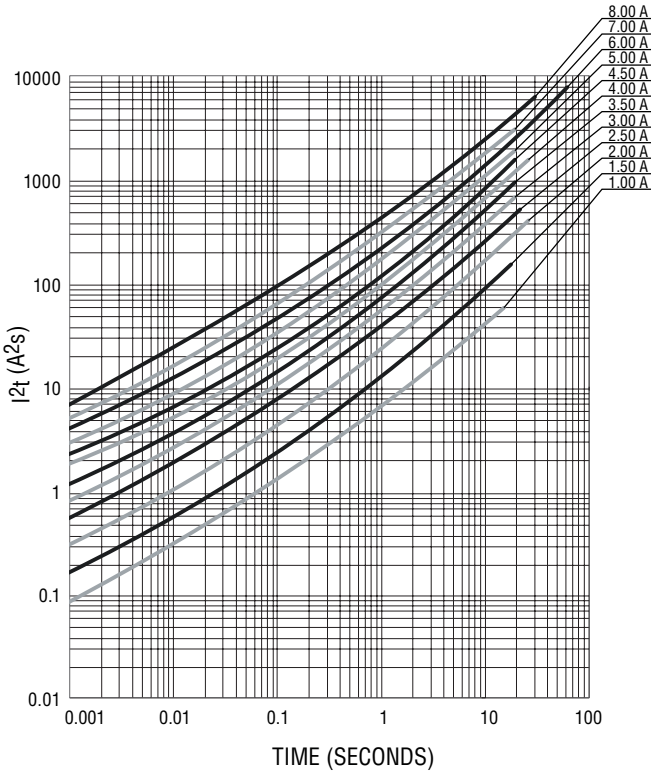


Wave soldering is suitable for 0603 size models.

Average Pre-Arcing Time vs. Current Curves

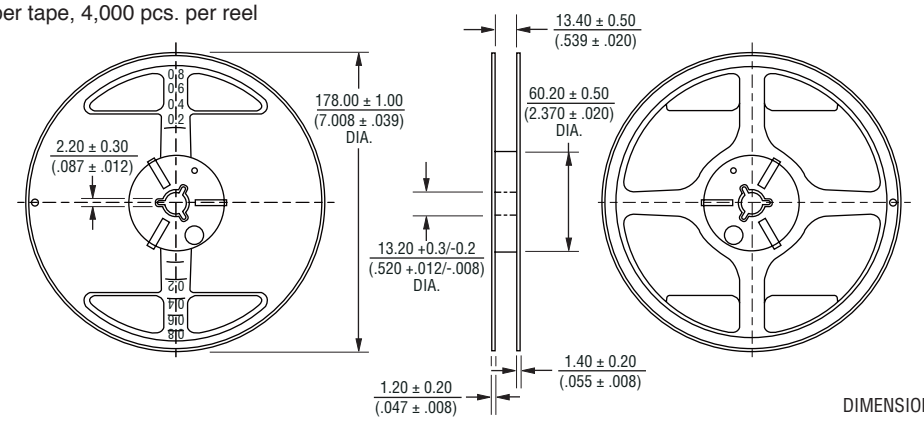


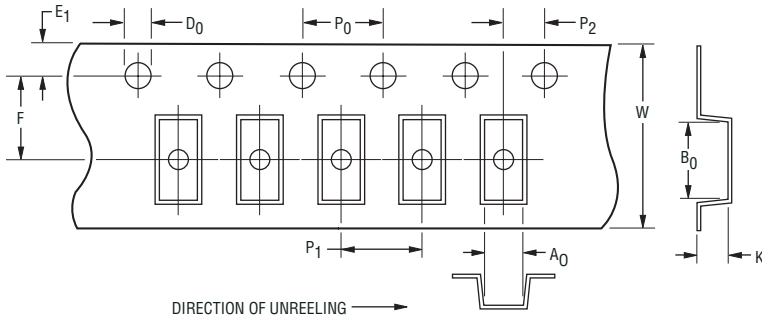
Average I^2t vs. t Curves



Tape Dimensions	SF-0603HIxxxM Series per EIA 481-2
W	8.00 ± 0.10 (.315 ± .004)
P_0	4.0 ± 0.10 (.157 ± .004)
P_1	4.0 ± 0.10 (.157 ± .004)
P_2	2.0 ± 0.05 (.079 ± .002)
A_0	1.00 ± 0.10 (.039 ± .004)
B_0	1.80 ± 0.10 (.071 ± .004)
F	3.50 ± 0.05 (.138 ± .002)
E_1	1.75 ± 0.10 (.069 ± .004)
D_0	1.50 + 0.10 (.059 + .004)

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





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