

SingIFuse™ SF-0603S-M Series Features

- Single blow fuse for overcurrent protection
- 1608 (EIA 0603) miniature footprint
- Slow blow fuse (Fusing time ≤5 seconds at 250 % rated current)
- UL 248-14 compliant
- Surface mount packaging for automated assembly
- Multilayer SMD design
- RoHS compliant* and halogen free**

SF-0603S-M Series - Slow Blow Multilayer Surface Mount Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
250 %	—	5 seconds
400 %	—	0.05 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-0603S050M-2	0.50	0.483	63 VDC	35 A @ 63 VDC	0.0030	✓
SF-0603S075M-2	0.75	0.253			0.0061	✓
SF-0603S100M-2	1.00	0.146			0.0132	✓
SF-0603S150M-2	1.50	0.0587			0.0303	✓
SF-0603S200M-2	2.00	0.0438	32 VDC	35 A @ 32 VDC	0.061	✓
SF-0603S250M-2	2.50	0.0318			0.101	✓
SF-0603S300M-2	3.00	0.0249			0.18	✓
SF-0603S350M-2	3.50	0.0239			0.303	✓
SF-0603S400M-2	4.00	0.0179			0.51	✓
SF-0603S500M-2	5.00	0.0129			0.81	✓
SF-0603S600M-2	6.00	0.0100	24 VDC	35 A @ 24 VDC	1.11	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±30 %.
****Melting I^2t calculated at 0.001 second pre-arcing time.

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WARNING Cancer and Reproductive Harm
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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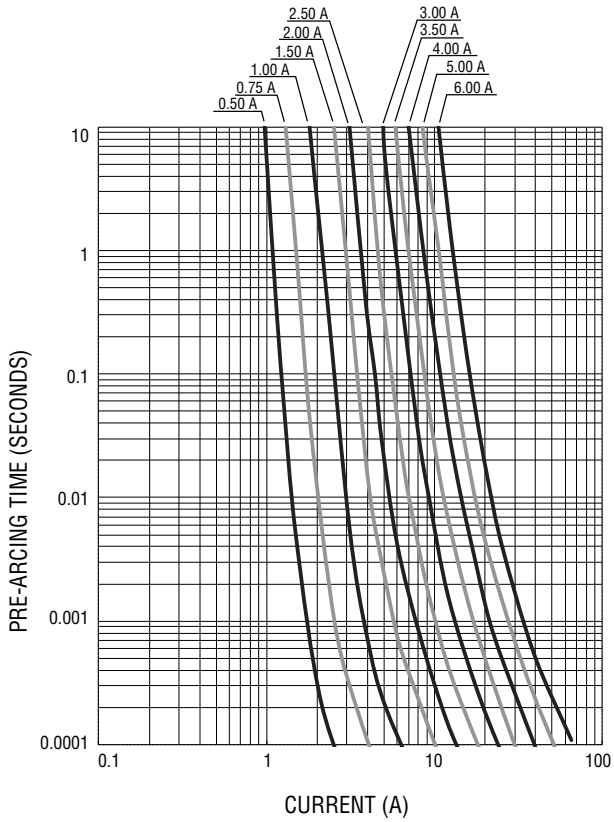
SingIFuse™ SF-0603S-M Series Applications

- 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

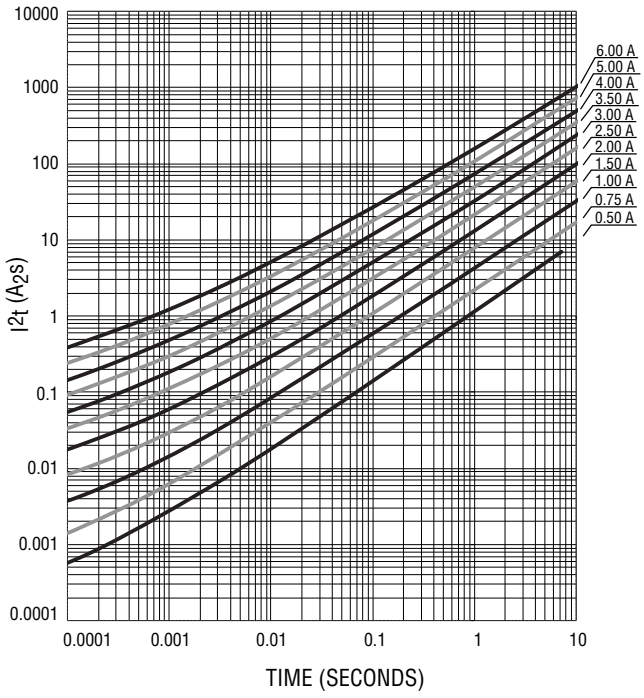
SF-0603S-M Series - Slow Blow Multilayer Surface Mount Fuses

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Average Pre-Arcing Time Curves



Average I²t 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

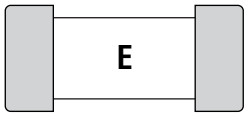
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SF-0603S-M Series - Slow Blow Multilayer Surface Mount Fuses

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Typical Part Marking

Represents total content. Layout may vary.



RATED CURRENT (A)

C = 0.50	K = 3.00
D = 0.75	L = 3.50
E = 1.00	M = 4.00
G = 1.50	N = 5.00
I = 2.00	O = 6.00
J = 2.50	

How to Order

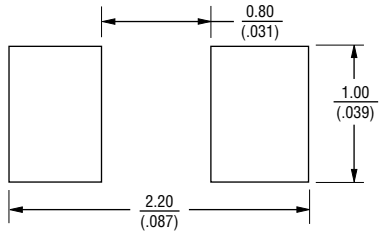
SF - 0603 S 100 M - 2

- SinglFuse™ Product Designator
- SMD Footprint
  - 0603 = 1608 (EIA 0603) size
- Fuse Blow Type
  - S = Slow blow
- Rated Current
  - 050-600 (0.50 A - 6.00 A)
- Structure
  - M = Multilayer
- Packaging Type
  - - 2 = Tape & Reel

Packaging

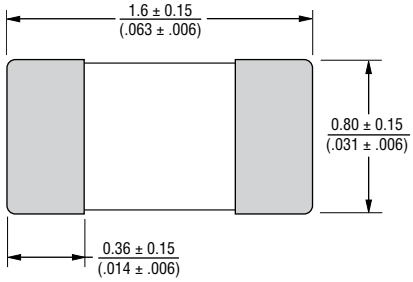
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	4,000 pieces
Packaging Code	-2

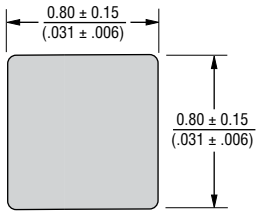
Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

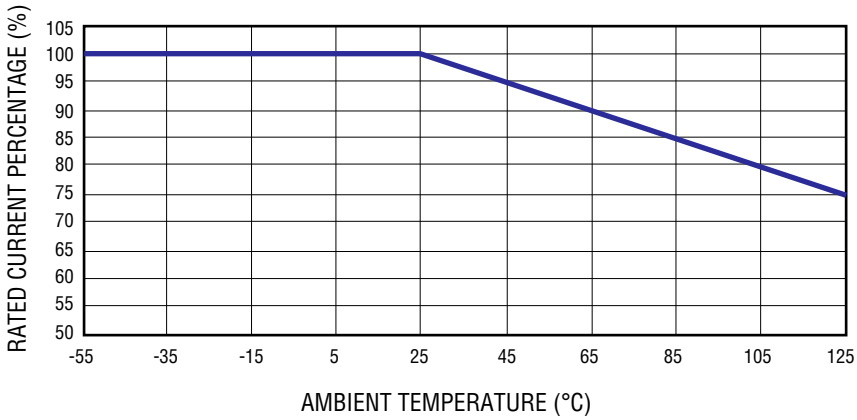
Product Dimensions





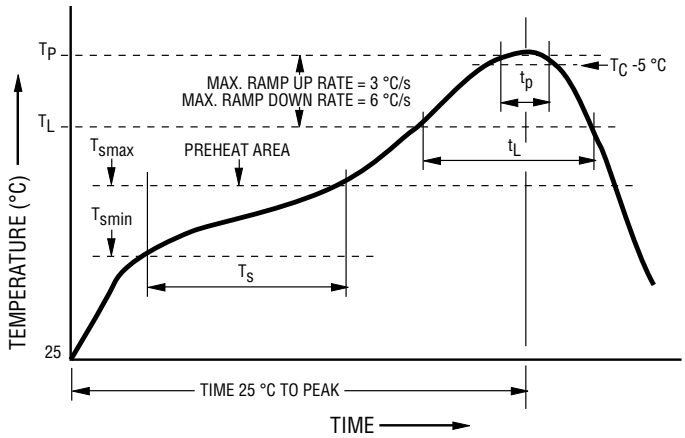
DIMENSIONS: MM / (INCHES)

Current Rating Thermal Derating Curve



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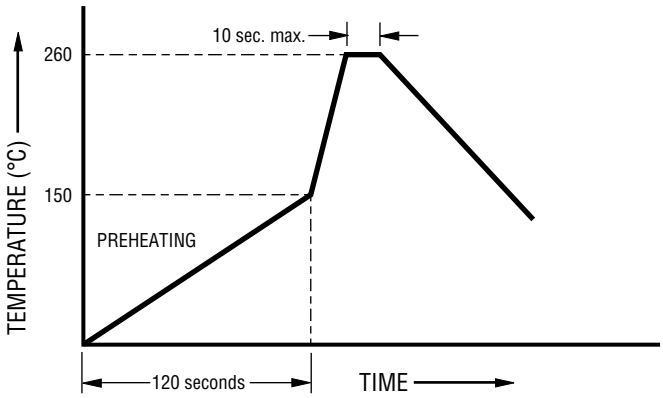
Solder Reflow Recommendations



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 (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.

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Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Soldering heat resistance	DCR change ≤ ±10 % No mechanical damage	One dip at 260 °C for 60 seconds	MIL-STD-202 Method 210
2	Solderability	Minimum 95 % coverage	One dip at 245 °C for 5 seconds	MIL-STD-202 Method 208
3	Thermal shock	DCR change ≤ ±10 % No mechanical damage	100 cycles between -65 °C and +125 °C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change ≤ ±15 % 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 ±20 % of initial value.	80 % rated current (75 % for ≤1 A fuses) for 2000 hours at ambient temperature +20 °C ~ +30 °C	Refer to STP document
9	Terminal strength	No mechanical damage	0.5 Kg pushing force	Refer to STP document

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