



SinglFuse™ SF-0603SP Series Features

- Time lag thin film chip fuse for overcurrent protection
- 1608 (EIA 0603) miniature footprint
- Surface mount packaging for automated assembly
- UL 248-14 compliant
- RoHS compliant* and halogen free**

SF-0603SP Series - Time Lag Surface Mount Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
200 %	1 second	120 seconds

Additional Information

Click these links for more information:



Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I ² t (A ² s) ****	Certifications
						cUL: E198545
SF-0603SP050-2	0.50	0.264	50 VDC	50 A @ 50 VDC	0.009	✓
SF-0603SP063-2	0.63	0.2	32 VDC	50 A @ 32 VDC	0.014	✓
SF-0603SP080-2	0.80	0.143			0.023	✓
SF-0603SP100-2	1.00	0.083			0.036	✓
SF-0603SP125-2	1.25	0.054			0.056	✓
SF-0603SP150-2	1.50	0.042			0.081	✓
SF-0603SP160-2	1.60	0.04			0.092	✓
SF-0603SP200-2	2.00	0.028			0.145	✓
SF-0603SP250-2	2.50	0.0215			0.229	✓
SF-0603SP300-2	3.00	0.018			0.332	✓
SF-0603SP315-2	3.15	0.016			0.365	✓
SF-0603SP400-2	4.00	0.013			0.574	✓
SF-0603SP500-2	5.00	0.0095			0.927	✓
SF-0603SP600-2	6.00	0.006			1.860	✓

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

**** Melting I²t calculated at 10 times rated current.

Environmental Characteristics

Operating Temperature.....	-20 °C to +105 °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

*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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Specifications are subject to change without notice. Users should verify actual device performance in their specific applications.

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WARNING Cancer and Reproductive Harm
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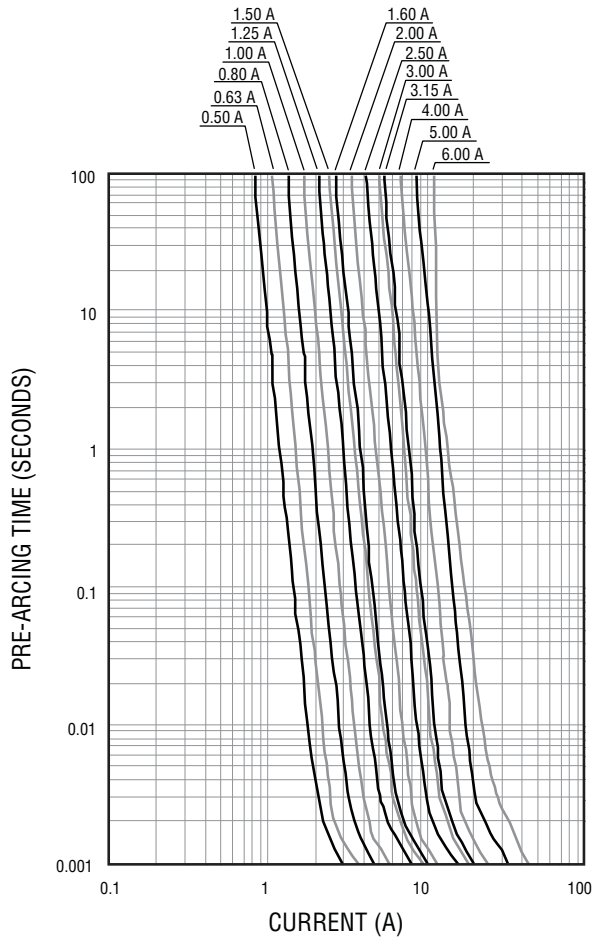
SinglFuse™ SF-0603SP Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- DVDs
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set top boxes
- Industrial controllers

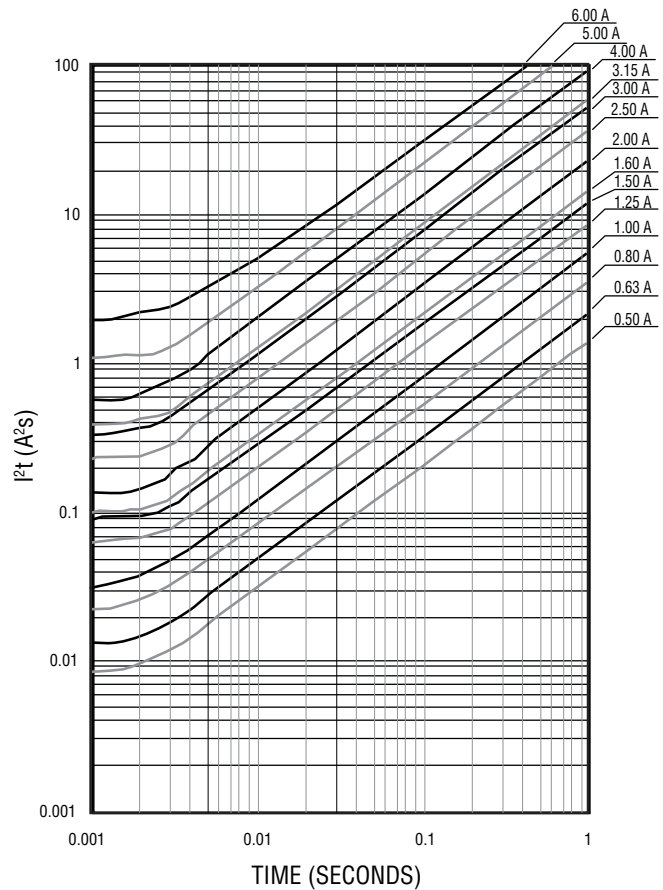
SF-0603SP Series - Time Lag Surface Mount Fuses



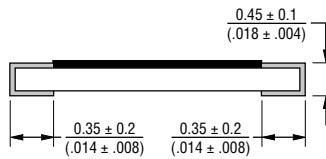
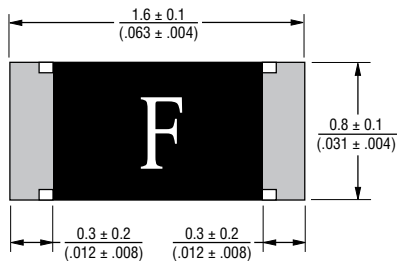
Average Pre-Arcing Time vs. Current Curves



Average I²t vs. t Curves

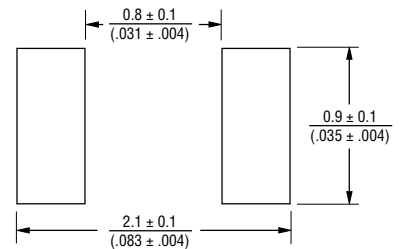


Product Dimensions



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

Recommended Pad Layout



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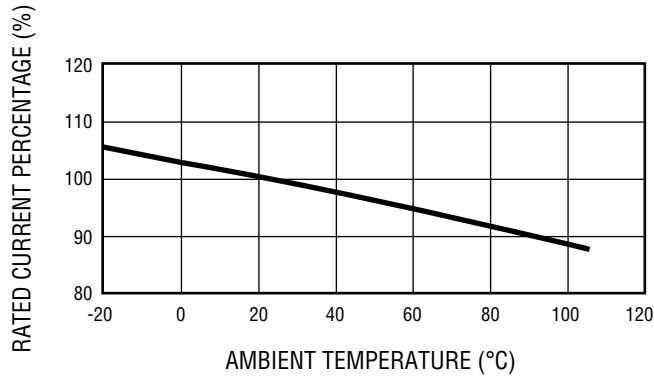
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SF-0603SP Series - Time Lag Surface Mount Fuses

BOURNS®

Thermal Derating Curve



How to Order

SF - 0603 SP 050 - 2

SinglFuse™
 Product Designator _____
 SMD Footprint _____
 1608 (EIA 0603) size
 Fuse Blow Type _____
 SP = Time lag
 Rated Current _____
 050-600 (500 mA - 6.00 A)
 Packaging Type _____
 - 2 = Tape & Reel (5,000 pcs./reel)

Packaging

Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	5,000 pieces
Packaging Code	-2

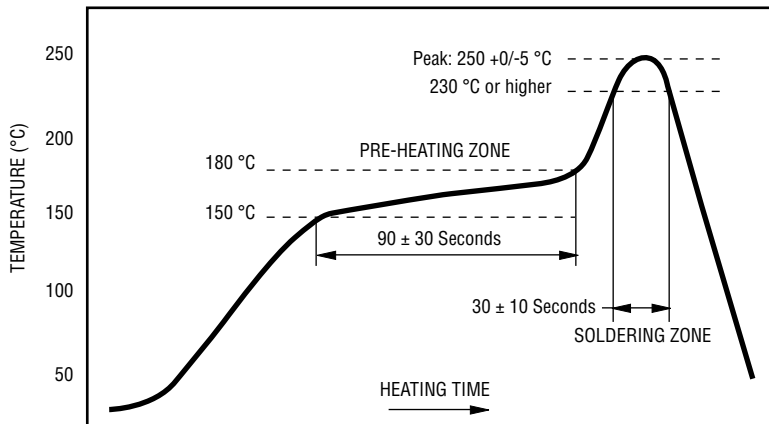
Typical Part Marking

Represents total content. Layout may vary.



RATED CURRENT (A)
 F = 0.50 S = 2.00
 I = 0.63 T = 2.50
 K = 0.80 3 = 3.00
 L = 1.00 U = 3.15
 M = 1.25 W = 4.00
 N = 1.60 Y = 5.00
 P = 1.50 6 = 6.00

Solder Reflow Recommendations



PEAK: 250 +0/-5 °C, 5 seconds
 PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds
 SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

SF-0603SP Series - Time Lag Surface Mount Fuses

BOURNS®

Reliability Testing

No.	Test	Requirement	Test Condition
1	Carrying Capacity	No fusing	Rated current, 4 hours
2	Fusing Time	Within 120 seconds	200 % of its rated current
3	Interrupting Ability	No mechanical damages	After the fuse is interrupted, rated voltage applied for 30 seconds again
4	Bending Test	No mechanical damages	Distance between holding points: 90 mm, Bending: 3 mm, 1 time, 30 seconds
5	Resistance to Solder Heat	±20 %	260 °C ±5 °C, 10 seconds ±1 second
6	Solderability	95 % coverage minimum	235 °C ±5 °C, 2 ±0.5 second 245 °C ±5 °C, 2 ±0.5 second (lead free)
7	Temperature Rise	<75 °C	100 % of its rated current, measure of surface temperature
8	Resistance to Dry Heat	±20 %	105 °C ±5 °C, 1000 hours
9	Resistance to Solvent	No evident damage on protective coating and marking	23 °C ±5 °C of isopropyl alcohol, 90 seconds
10	Residual Resistance	10k ohms or more	Measure DC resistance after fusing
11	Thermal Shock	ΔR < 10 %	-20 °C / +25 °C /+125 °C /+25 °C, 10 cycles

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