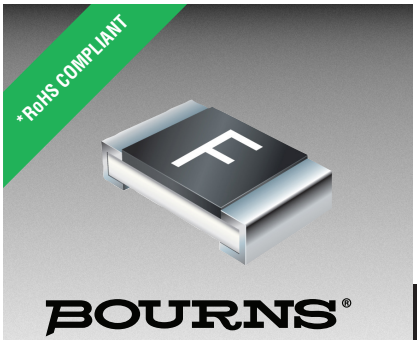

SingIFuse™ SF-0603SP Series Features

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

SF-0603SP Series - Time Lag Surface Mount Fuses

Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (mΩ) Typ.***	Rated Voltage	Breaking Capacity	Typical I^2t (A^2s) ****
SF-0603SP050	0.50	Open within 1~120 sec. at 200 % rated current	264	DC 50 V	DC 50 V 50 A	0.009
SF-0603SP063	0.63		200	DC 32 V	DC 32 V 50 A	0.014
SF-0603SP080	0.80		143			0.023
SF-0603SP100	1.00		83			0.036
SF-0603SP125	1.25		54			0.056
SF-0603SP150	1.50		42			0.081
SF-0603SP160	1.60		40			0.092
SF-0603SP200	2.00		28			0.145
SF-0603SP250	2.50		21.5			0.229
SF-0603SP300	3.00		18			0.332
SF-0603SP315	3.15		16			0.365
SF-0603SP400	4.00		13			0.574
SF-0603SP500	5.00		9.5			0.927
SF-0603SP600	6.00		6			1.860

*** Resistance value measured with less than 10 % of rated current. Tolerance ±25 %.
****Typical I^2t value measured at 10x rated current.

Reliability Testing

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

UL File Number E198545
http://www.ul.com/ Follow link to Online Certificates Directory, then enter UL File No. E198545, or click here

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.

BOURNS®

Asia-Pacific:
Tel: +886-2 2562-4117
Email: asiacus@bourns.com

Europe:
Tel: +36 88 520 390
Email: eurocus@bourns.com

The Americas:
Tel: +1-951 781-5500
Email: americus@bourns.com

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SingIFuse™ 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

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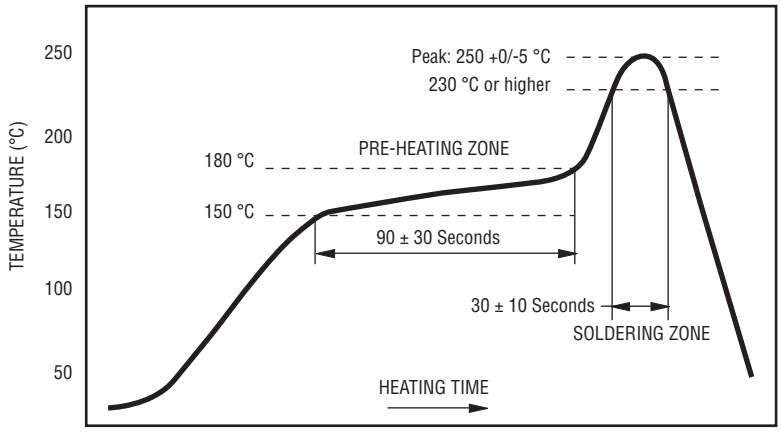
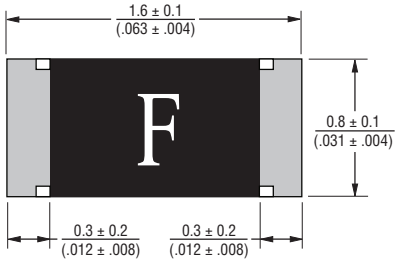
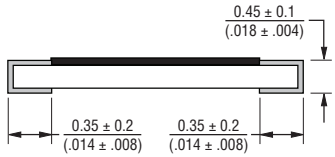
Solder Reflow Recommendations



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

Product Dimensions

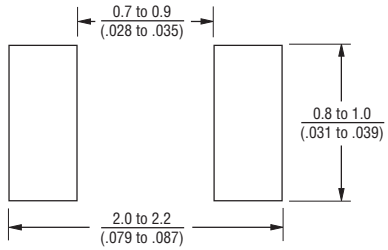




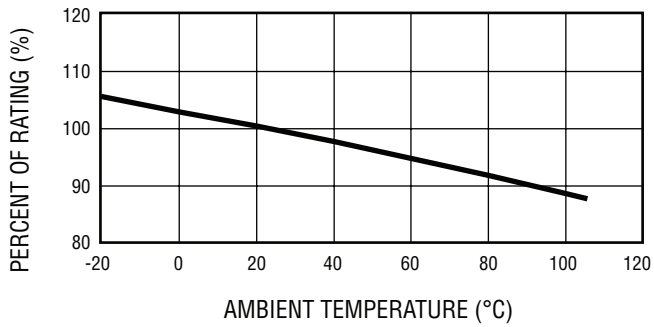
DIMENSIONS: MM / (INCHES)

PACKAGING: 5,000 pcs./reel

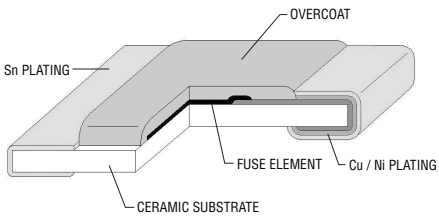
Recommended Pad Layout



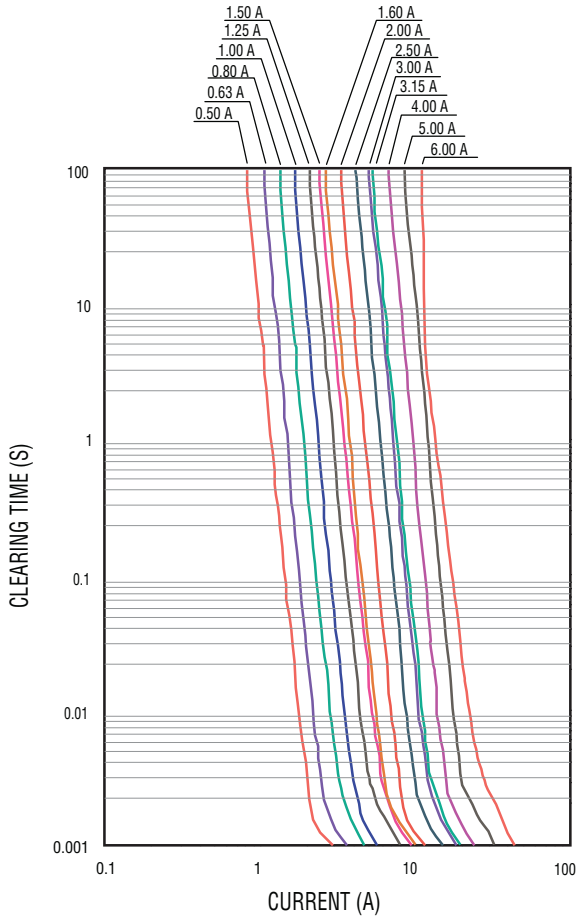
Thermal Derating Curve



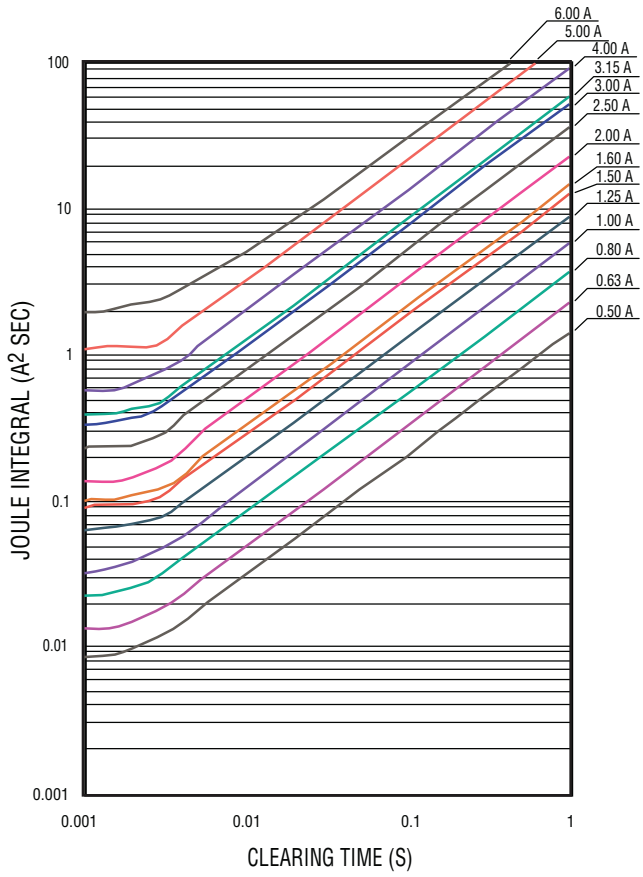
Construction & Material Content



Average Time Current Curves



Minimum I²T V Clear Time Curves



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

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)

SF-0603SP Series Tape and Reel Specifications

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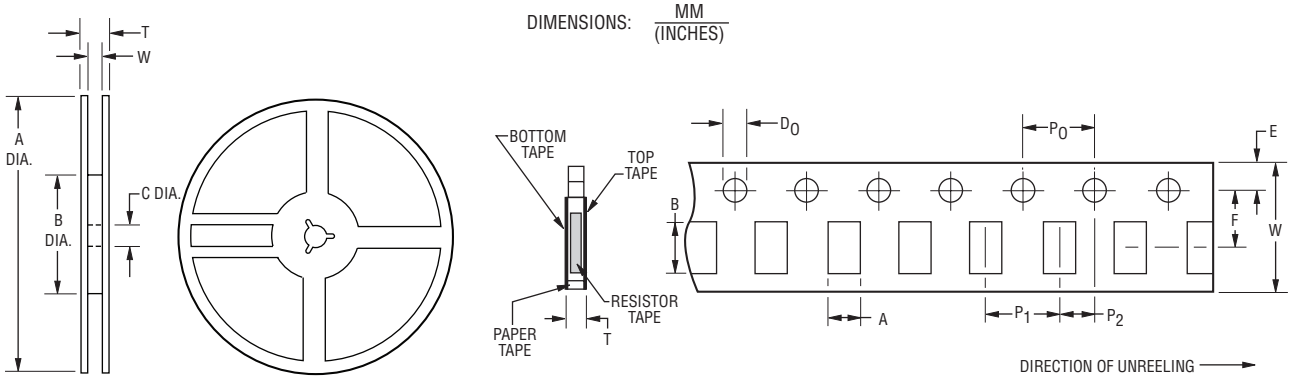
Tape Dimensions	SF-0603SP Series per EIA 481-2
W	8.0 ± 0.2 (.315 ± .008)
P_0	4.0 ± 0.1 (.157 ± .004)
P_1	4.0 ± 0.1 (.157 ± .004)
P_2	2.0 ± 0.05 (.079 ± .002)
A	1.1 ± 0.1 (.043 ± .004)
B	1.9 ± 0.1 (.075 ± .004)
F	3.5 ± 0.05 (.138 ± .002)
E	1.75 ± 0.1 (.069 ± .004)
D_0	1.5 + 0.1/-0 (.059 + .004/-0)
T	0.64 ± 0.1 (.025 ± .004)
Reel Dimensions	
A	180 +0/-3.0 (7.087 +0/-.118)
B Min.	60.0 (2.362)
C	13.0 ± 1.0 (.512 ± .039)
W	9.0 ± 1.0 (.354 ± .039)
T	11.4 ± 2.0 (.449 ± .079)



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