

## SinglFuse™ SF-1206S Series Features

- Slow blow thin film chip fuse for overcurrent protection
- 3216 (EIA 1206) miniature footprint
- Surface mount packaging for automated assembly
- UL listed (UL 248-14)
- RoHS compliant\* and halogen free\*\*

## SF-1206S Series - Slow Blow Surface Mount Fuses

### Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (mΩ) Typ.***	Rated Voltage	Breaking Capacity	Typical I <sup>2</sup> t (A <sup>2</sup> s) ****
SF-1206S050	0.50	Open within 5 sec. at 250 % rated current	596	DC 63 V	DC 63 V 50 A	0.030
SF-1206S080	0.80		165			0.068
SF-1206S100	1.00		132			0.098
SF-1206S125	1.25		90			0.155
SF-1206S150	1.50		79			0.236
SF-1206S200	2.00		41	DC 32 V	DC 32 V 50 A	0.339
SF-1206S250	2.50		33			0.605
SF-1206S300	3.00		23			0.933
SF-1206S400	4.00		15.5			1.537
SF-1206S500	5.00		13			2.533
SF-1206S700	7.00		7			5.684

\*\*\* Resistance value measured with less than 10 % of rated current. Resistance tolerance  $\pm 25\%$ .

\*\*\*\* Typical I<sup>2</sup>t value measured at 10x rated current.

### Reliability Testing

Parameter	Requirement	Test Method
Carrying Capacity .....	No fusing .....	Rated current, 4 hours
Fusing Time .....	Within 5 seconds .....	250 % 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 .....	$\pm 20\%$ .....	260 °C $\pm 5$ °C, 10 $\pm 1$ second
Solderability .....	95 % coverage minimum .....	235 °C $\pm 5$ °C, 2 $\pm 0.5$ second 245 °C $\pm 5$ °C, 2 $\pm 0.5$ second (lead free)
Temperature Rise .....	<75 °C .....	100 % of its rated current, measure of surface temperature
Resistance to Dry Heat .....	$\pm 20\%$ .....	105 °C $\pm 5$ °C, 1000 hours
Resistance to Solvent .....	No evident damage on protective coating and marking .....	23 °C $\pm 5$ °C of isopropyl alcohol, 90 seconds
Residual Resistance .....	10k ohms or more .....	Measure DC resistance after fusing
Thermal Shock .....	$\Delta R < 10\%$ .....	-20 °C / +25 °C / +125 °C / +25 °C, 10 cycles
UL File Number .....	E198545 <a href="http://www.ul.com/">http://www.ul.com/</a> 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

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\* 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.

"SinglFuse" is a trademark of Bourns, Inc.

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

## SinglFuse™ SF-1206S 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-1206S Series - Slow Blow Surface Mount Fuses

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### Typical Part Marking

Represents total content. Layout may vary.



RATED CURRENT (A)	
F = 0.50	T = 2.50
K = 0.80	3 = 3.00
L = 1.00	W = 4.00
M = 1.25	Y = 5.00
P = 1.50	Z = 7.00
S = 2.00	

### How to Order

SinglFuse™ Product Designator

SMD Footprint  
3216 (EIA 1206) size

Fuse Blow Type

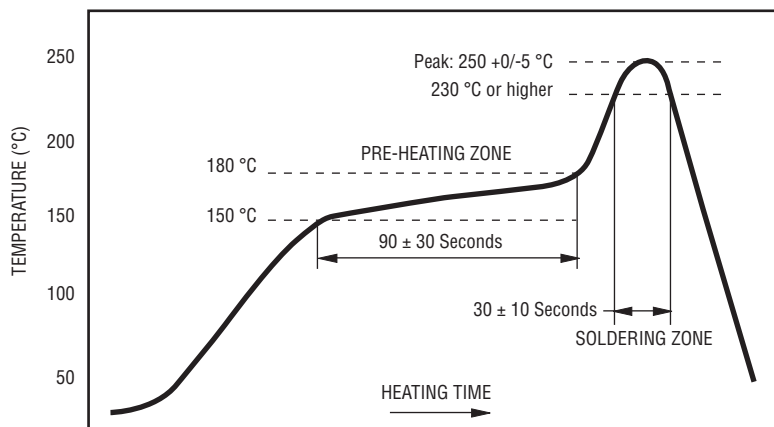
F = Fast Acting    FP = Fast Acting Precision  
S = Slow Blow    SP = Time Lag

Rated Current  
050-700 (500 mA - 7.00 A)

Packaging Type  
- 2 = Tape & Reel (5,000 pcs./reel)

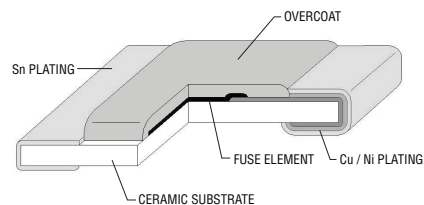
**SF - 1206 S 050 - 2**

### Solder Reflow Recommendations

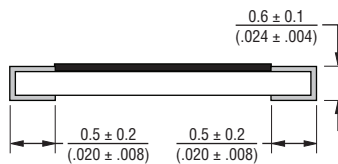
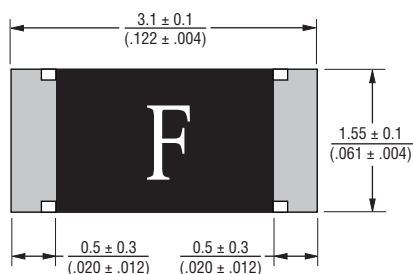


PEAK: 250 ± 0/-5 °C, 5 seconds  
PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds  
SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

### Construction & Material Content



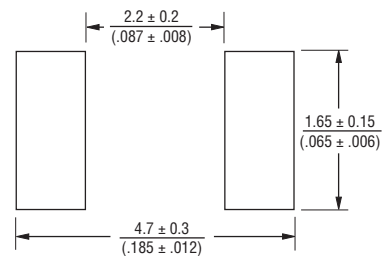
### Product Dimensions



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

PACKAGING: 5,000 pcs./reel

### Recommended Pad Layout

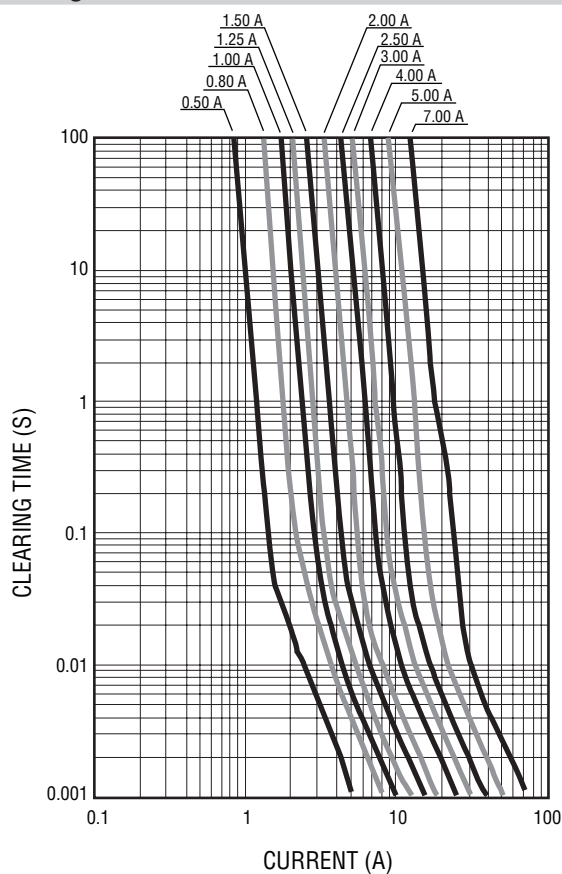


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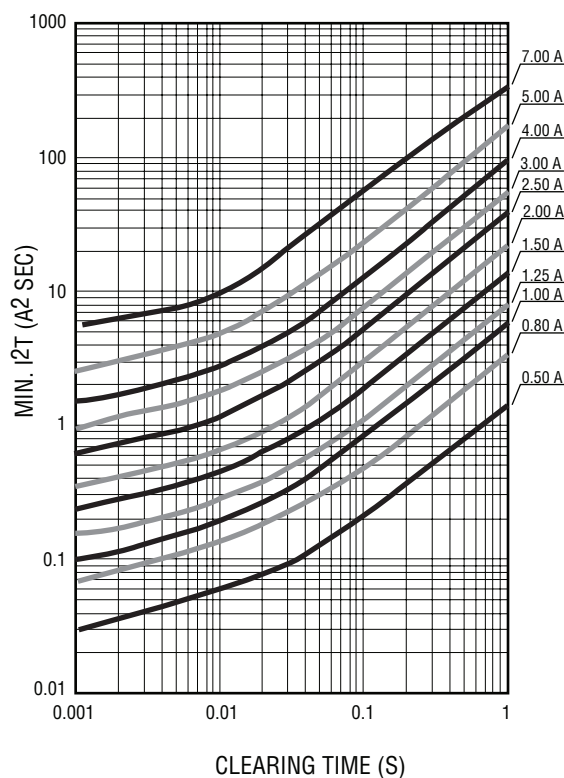
# SF-1206S Series - Slow Blow Surface Mount Fuses

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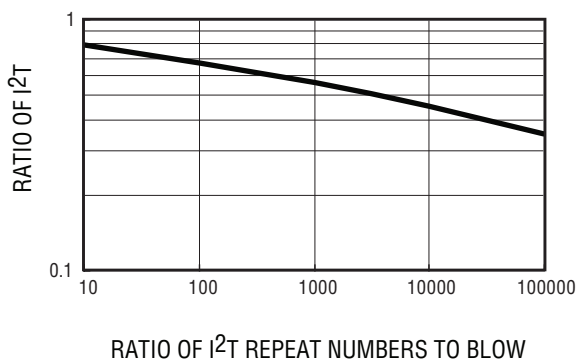
**Average Time Current Curves**



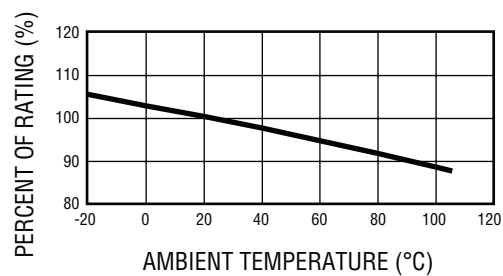
**Minimum I<sup>2</sup>T V Clear Time Curves**



**I<sup>2</sup>T Derating Curve by Repeater Rush Current**



**Thermal Derating Curve**



REV. H 08/17

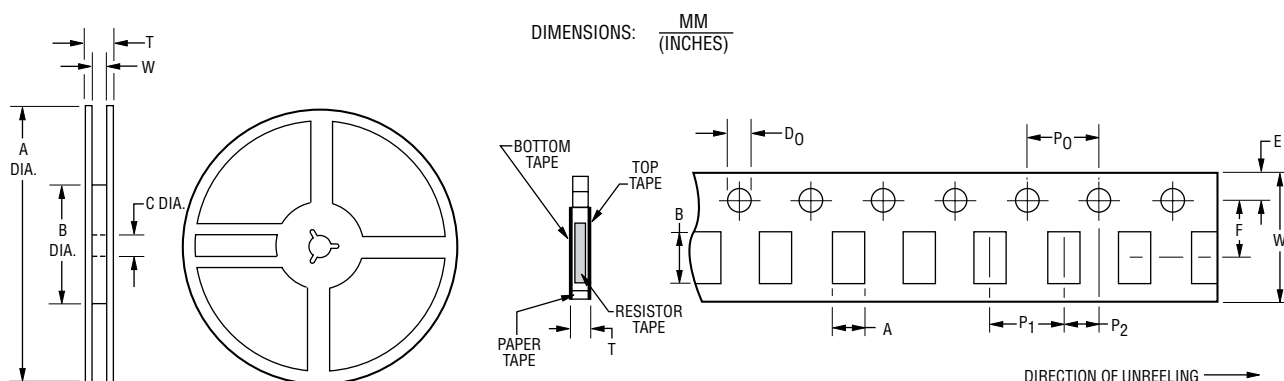
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# SF-1206S Series Tape and Reel Specifications

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Tape Dimensions	SF-1206S Series per EIA 481-2
W	$\frac{8.0 \pm 0.2}{(.315 \pm .008)}$
P <sub>0</sub>	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
P <sub>1</sub>	$\frac{4.0 \pm 0.1}{(.157 \pm .004)}$
P <sub>2</sub>	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
A	$\frac{2.0 \pm 0.15}{(.079 \pm .006)}$
B	$\frac{3.6 \pm 0.2}{(.142 \pm .008)}$
F	$\frac{3.5 \pm 0.05}{(.138 \pm .002)}$
E	$\frac{1.75 \pm 0.1}{(.069 \pm .004)}$
D <sub>0</sub>	$\frac{1.5 + 0.1/-0}{(.059 + .004/-0)}$
T	$\frac{0.84 \pm 0.1}{(.033 \pm .004)}$
<b>Reel Dimensions</b>	
A	$\frac{180 +0/-3.0}{(7.087 +0/- .118)}$
B Min.	$\frac{60.0}{(2.362)}$
C	$\frac{13.0 \pm 1.0}{(.512 \pm .039)}$
W	$\frac{9.0 \pm 1.0}{(.354 \pm .039)}$
T	$\frac{11.4 \pm 2.0}{(.449 \pm .079)}$



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