



**THE DATASHEET OF  
SF-1206S500-2**





### 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	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	DC 32 V	DC 32 V 50 A	

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

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

### Reliability Testing

No.	Test	Requirement	Test Condition
1	Carrying Capacity	No fusing	Rated current, 4 hours
2	Fusing Time	Within 5 seconds	250 % 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

### Agency Recognition

UL File Number ..... E198545

### 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



### WARNING Cancer and Reproductive Harm

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\* 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.

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# 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 BOURNS®

### 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

**SF - 1206 S 050 - 2**

SinglFuse™ Product Designator \_\_\_\_\_

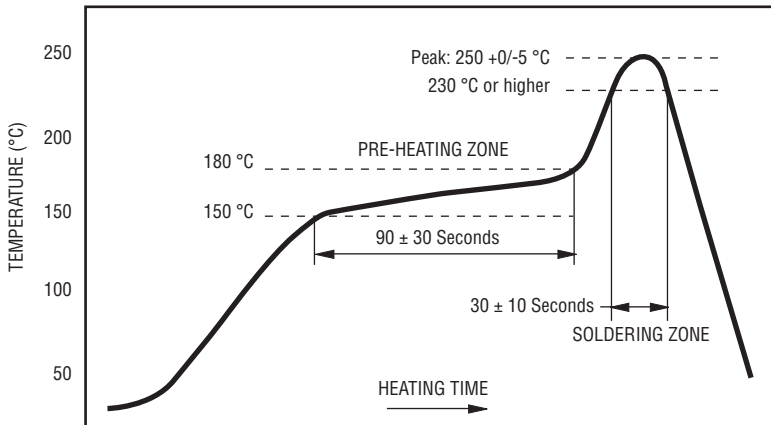
SMD Footprint \_\_\_\_\_  
3216 (EIA 1206) size

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)

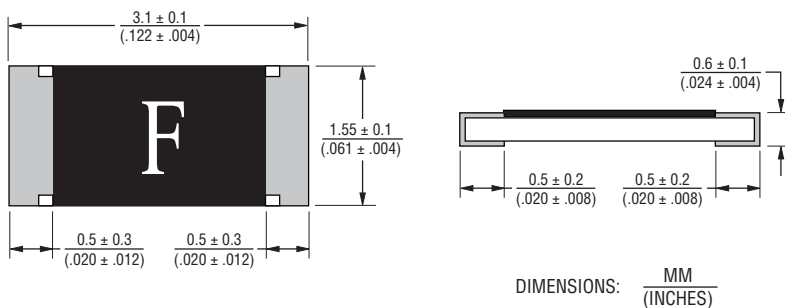
Packaging Type \_\_\_\_\_  
- 2 = Tape & Reel (5,000 pcs./reel)

### Solder Reflow Recommendations

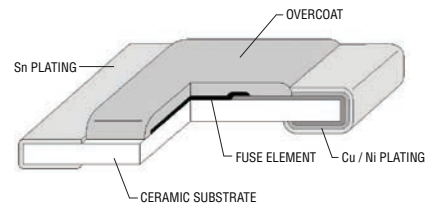


PEAK: 250 +0/-5 °C, 5 seconds  
 PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds  
 SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

### Product Dimensions



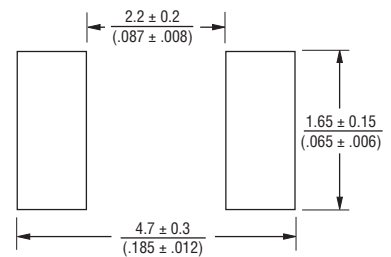
### Construction & Material Content



### Packaging Quantity

5,000 pieces per 7-inch reel

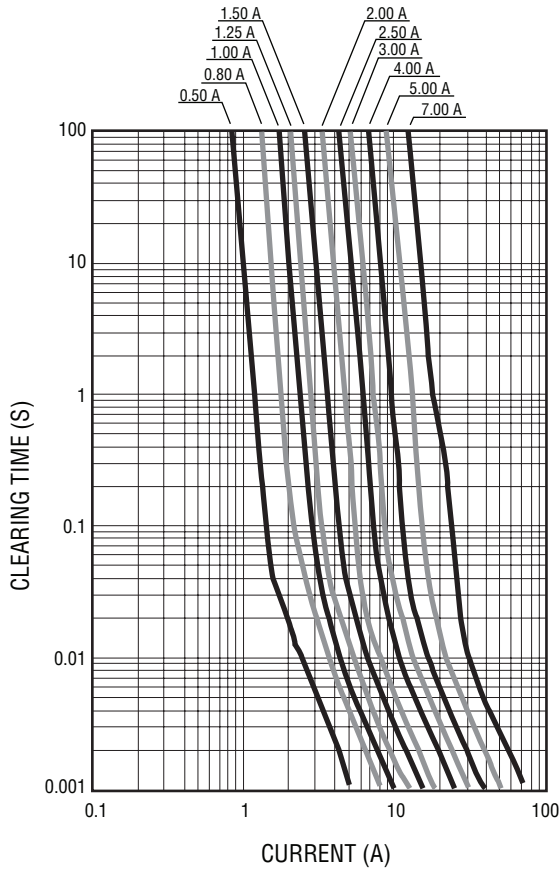
### Recommended Pad Layout



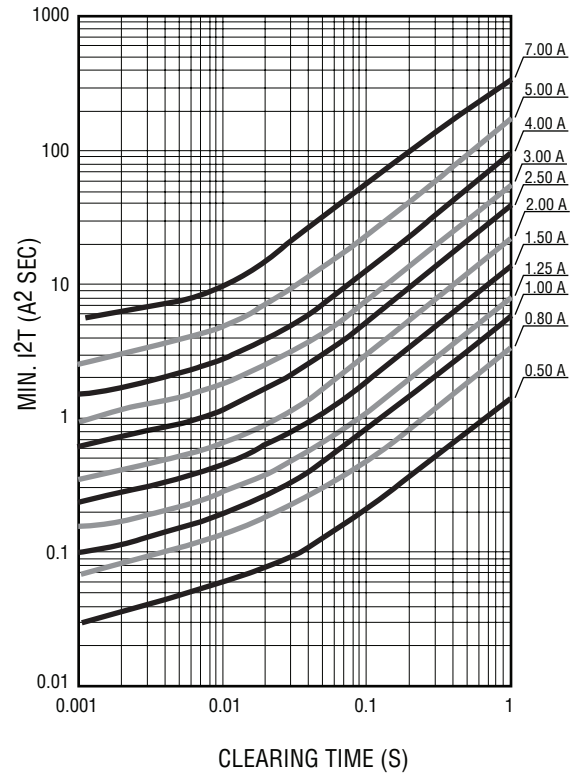
# SF-1206S Series - Slow Blow Surface Mount Fuses



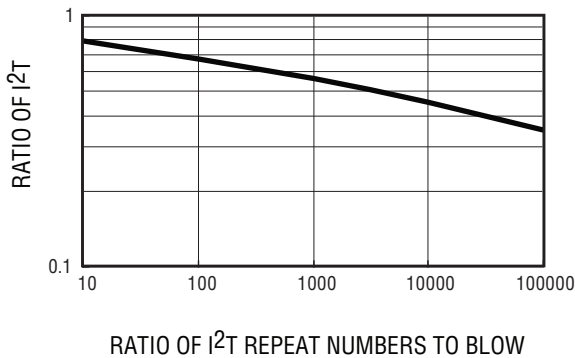
**Average Time Current Curves**



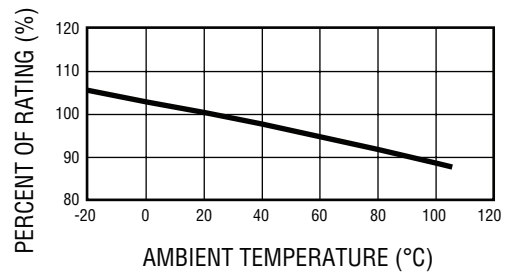
**Minimum I<sup>2</sup>T V Clear Time Curves**



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



**Thermal Derating Curve**



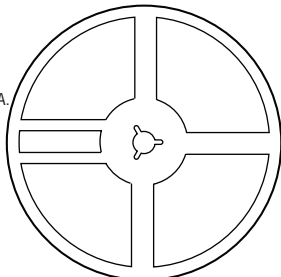
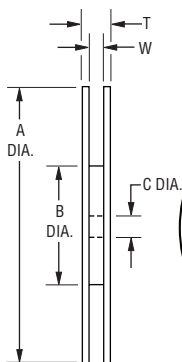
REV. I 01/19

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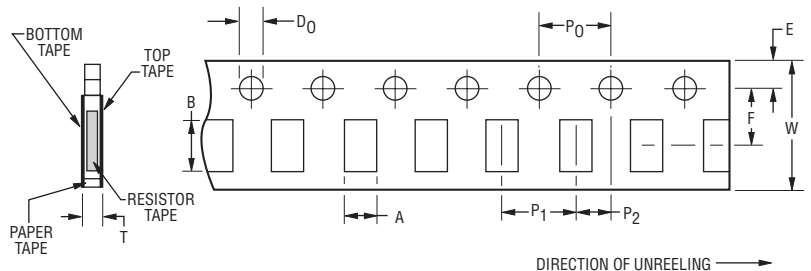
# SF-1206S Series Tape and Reel Specifications

# BOURNS®

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	$\frac{0.84 \pm 0.1}{(.033 \pm .004)}$
Reel Dimensions	
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	$\frac{11.4 \pm 2.0}{(.449 \pm .079)}$



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



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