

## SinglFuse™ SF-1206FP Series Features

- Fast acting precision 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-1206FP Series - Fast Acting Precision 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-1206FP050	0.50	Open within 5 sec. at 200 % rated current	527.5	DC 63 V	DC 63 V 50 A	0.015
SF-1206FP080	0.80		211			0.040
SF-1206FP100	1.00		145.5			0.062
SF-1206FP125	1.25		90			0.094
SF-1206FP150	1.50		83			0.141
SF-1206FP200	2.00		57			0.285
SF-1206FP250	2.50		37	0.445		
SF-1206FP300	3.00		26	0.639		
SF-1206FP400	4.00		18	1.109		
SF-1206FP500	5.00		13	1.710		
SF-1206FP700	7.00	9	3.300	DC 32 V	DC 32 V 50 A	

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

\*\*\*\*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 .....	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, 1time, 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 <a href="http://www.ul.com/">http://www.ul.com/</a> Follow link to Online Certificates Directory, then enter UL File No. E198545, or <a href="#">click here</a>	

### 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

**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  
[www.bourns.com](http://www.bourns.com)

\* 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.

"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.

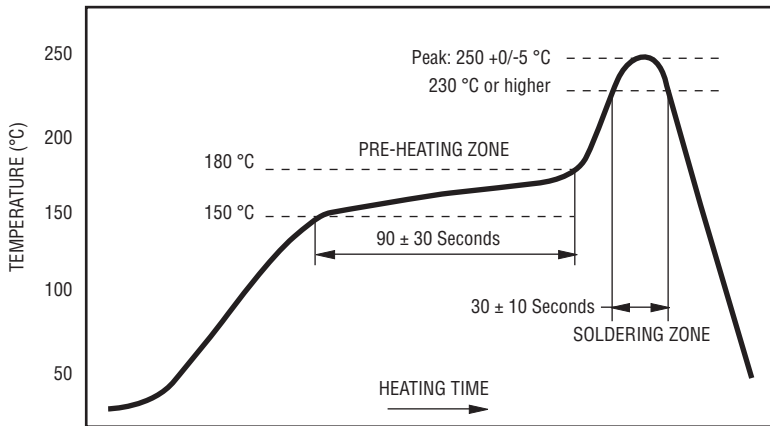
Users should verify actual device performance in their specific applications.

# SinglFuse™ SF-1206FP Series Applications

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

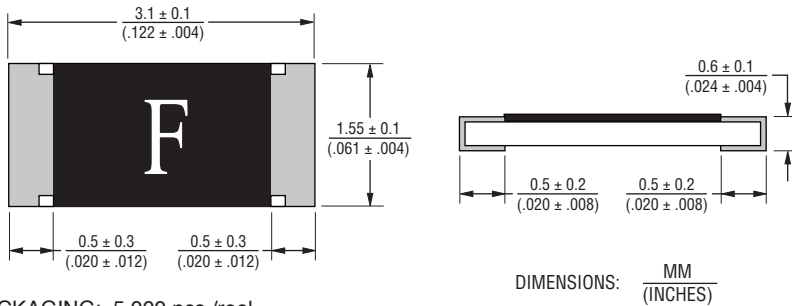
## SF-1206FP Series - Fast Acting Precision Surface Mount Fuses **BOURNS®**

### Solder Reflow Recommendations



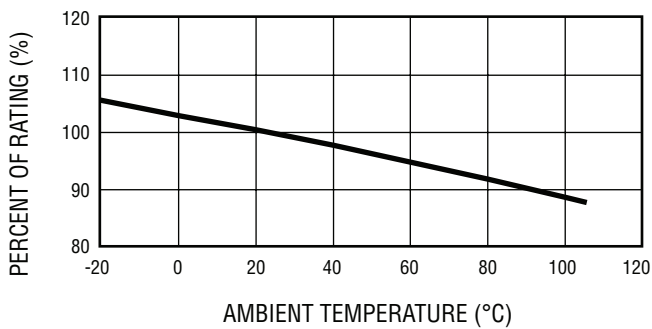
PEAK: 250 +0/-5 °C, 5 seconds  
 PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds  
 SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

### Product Dimensions

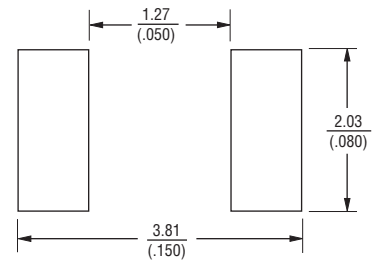


PACKAGING: 5,000 pcs./reel

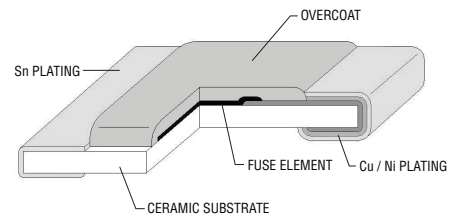
### Thermal Derating Curve



### Recommended Pad Layout



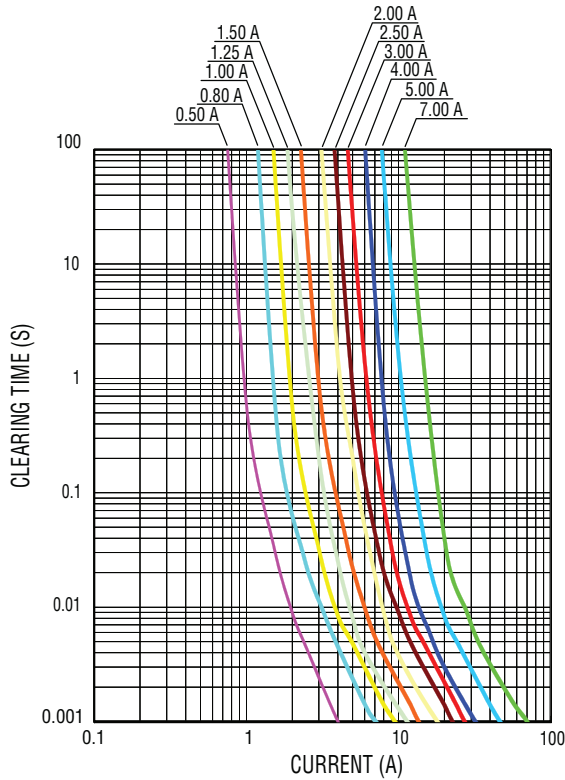
### Construction & Material Content



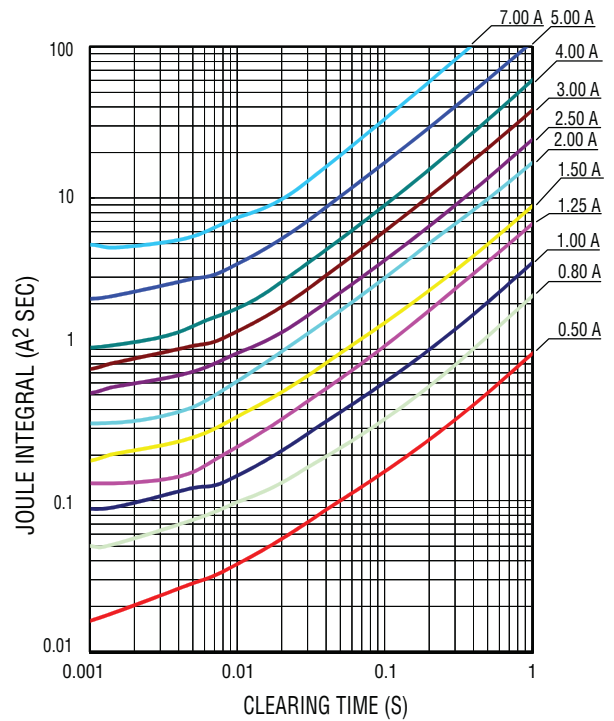
Specifications are subject to change without notice.  
 The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
 Users should verify actual device performance in their specific applications.

# SF-1206FP Series - Fast Acting Precision Surface Mount Fuses **BOURNS®**

**Average Time Current Curves**



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



**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**

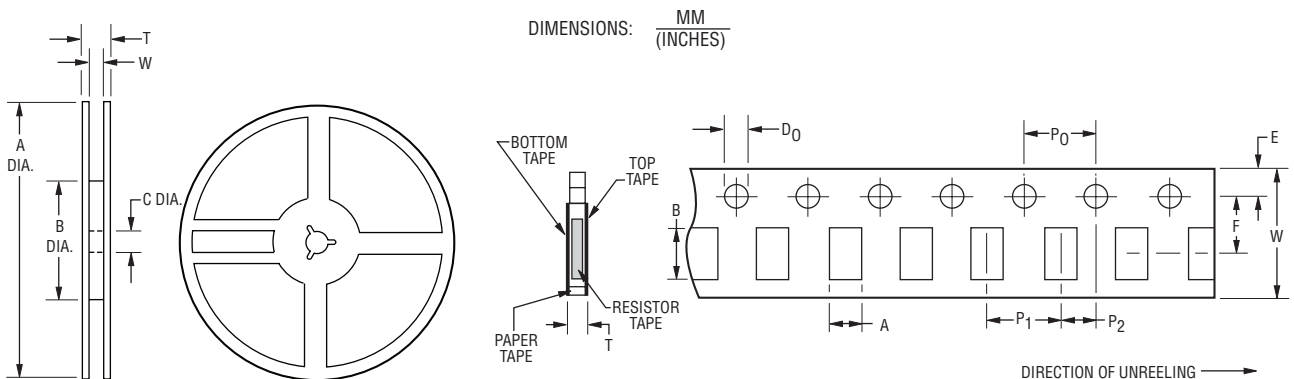
**SF - 1206 FP 050 - 2**

SinglFuse™  
 Product Designator \_\_\_\_\_  
 SMD Footprint \_\_\_\_\_  
 3216 (EIA 1206) size  
 Fuse Blow Type \_\_\_\_\_  
 FP = Fast acting precision  
 Rated Current \_\_\_\_\_  
 050-700 (500 mA - 7.00 A)  
 Packaging Type \_\_\_\_\_  
 - 2 = Tape & Reel (5,000 pcs./reel)

# SF-1206FP Series Tape and Reel Specifications

**BOURNS®**

Tape Dimensions	SF-1206FP 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	$\frac{178 \pm 0.2}{(7.087 \pm .079)}$
B Min.	$\frac{60.0 \pm 1.0}{(2.362 \pm .039)}$
C	$\frac{13.0 \pm 1.0}{(.512 \pm .039)}$
W	$\frac{9.0 \pm 1.0}{(.354 \pm .039)}$
T	$\frac{11.4 \pm 2.0}{(.449 \pm .079)}$



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.