



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



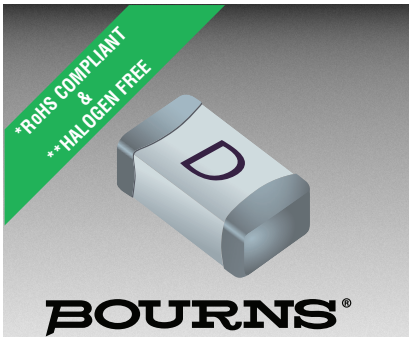
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## SinglFuse™ SF-1206SxxxM Series Features

- Single blow fuse for overcurrent protection
- 3216 (EIA 1206) miniature footprint
- Slow blow fuse (Fusing time  $\leq 5$  seconds at 250 % rated current)
- UL 248-14 listed
- Surface mount packaging for automated assembly
- Multilayer SMD design
- RoHS compliant\* and halogen free\*\*

## SF-1206SxxxM Series - Slow Blow Multilayer Surface Mount Fuses

### Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance ( $\Omega$ ) Typ.***	Rated Voltage	Interrupting Rating ( $\Omega$ ) Typ.***	Typical $I^2t$ (A <sup>2</sup> s) ****	
SF-1206S050M-2	0.50	Open within 5 sec. at 250 % rated current	0.730	DC 63 V	DC 63 V 50 A	0.002	
SF-1206S075M-2	0.75		0.513			0.005	
SF-1206S100M-2	1.00		0.220			0.011	
SF-1206S150M-2	1.50		0.120			0.024	
SF-1206S175M-2	1.75		0.100			0.045	
SF-1206S200M-2	2.00		0.050			0.075	
SF-1206S250M-2	2.50		0.035	DC 32 V	DC 32 V 50 A	0.110	
SF-1206S300M-2	3.00		0.031			0.210	
SF-1206S400M-2	4.00		0.022			0.350	
SF-1206S500M-2	5.00		0.015			DC 32 V 45 A	0.600
SF-1206S600M-2	6.00		0.013				1.000
SF-1206S700M-2	7.00		0.011				1.600
SF-1206S800M-2	8.00		0.008	2.300			

\*\*\* Resistance value measured with  $\leq 10$  % rated current at 25 °C ambient.

\*\*\*\*Melting  $I^2t$  calculated at 0.001 second pre-arcing time.

### Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Soldering heat resistance	DCR change $\leq \pm 10$ % No mechanical damage	One dip at 260 °C for 60 seconds	MIL-STD-202 Method 210
2	Solderability	Minimum 95 % coverage	One dip at 245 °C for 5 seconds	MIL-STD-202 Method 208
3	Thermal shock	DCR change $\leq \pm 10$ % No mechanical damage	100 cycles between -65 °C and +125 °C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change $\leq \pm 15$ % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change $\leq \pm 10$ % No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change $\leq \pm 10$ % No mechanical damage	0.4 inch D.A. or 30 G between 5-3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change $\leq \pm 10$ % No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
8	Life	No electrical "opens" during testing. Voltage drop change shall be less than $\pm 20$ % of initial value.	80 % rated current (75 % for $\leq 1$ A fuses) for 2000 hours at ambient temperature +20 °C ~ +30 °C	Refer to STP document

### Environmental Characteristics

Operating Temperature..... -55 °C to +125 °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 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.

### Agency Recognition

UL File Number ..... E198545

<http://www.ul.com/> Follow link to Online Certificates Directory, then enter UL File No. E198545, or [click here](#)

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# SinglFuse™ SF-1206SxxxM Series Applications

- Portable memory
- Cell phones
- LED lighting
- LCD monitors
- Rechargeable battery packs
- Power tools
- Disk drives
- Battery chargers
- Set-top boxes
- Industrial controllers
- Battery Management Systems (BMS)
- PDAs
- Digital cameras
- MP3 players

## SF-1206SxxxM Series - Slow Blow Multilayer Surface Mount Fuses **BOURNS®**

### Typical Part Marking

Represents total content. Layout may vary.

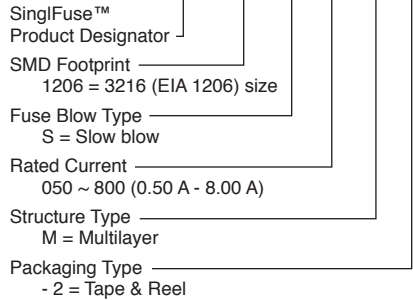


RATED CURRENT (A)

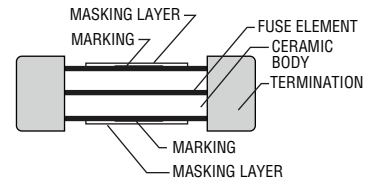
C = 0.50	K = 3.00
D = 0.75	M = 4.00
E = 1.00	N = 5.00
G = 1.50	+ = 6.00
H = 1.75	- = 7.00
I = 2.00	= = 8.00
J = 2.50	

### How to Order

**SF - 1206 S 100 M - 2**



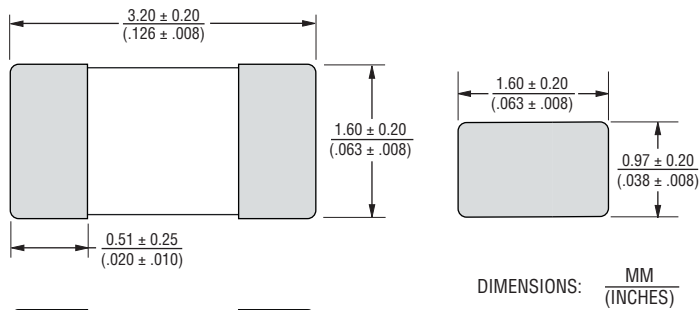
### Construction



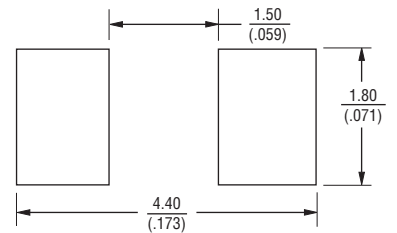
### Packaging Quantity

.....3,000 pieces per 7 inch reel

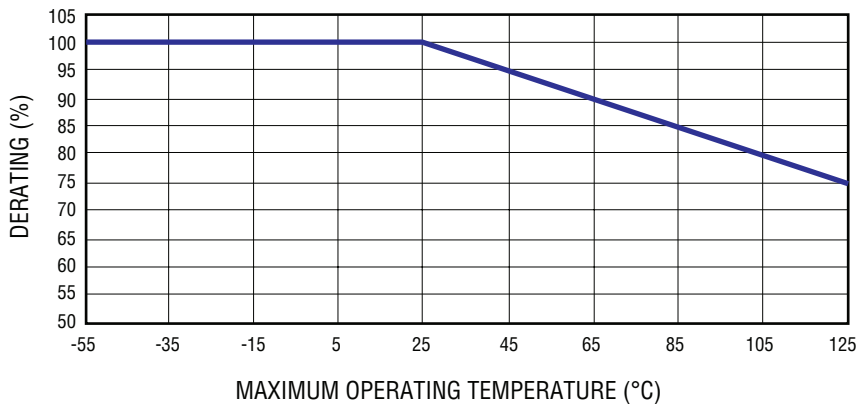
### Product Dimensions



### Recommended Pad Layout



### Current Rating Thermal Derating Curve



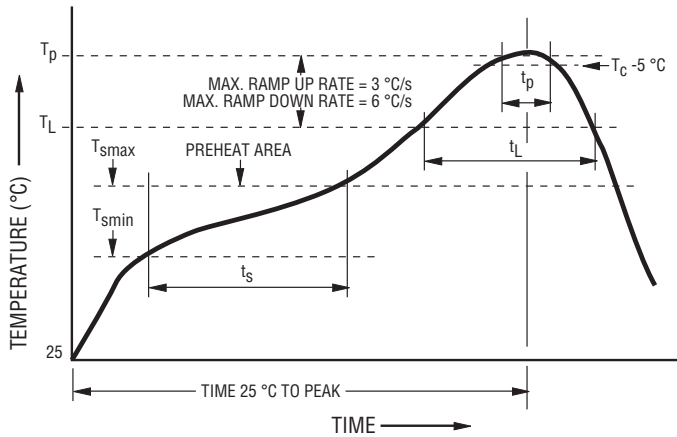
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# SF-1206SxxxM Series - Slow Blow Multilayer Surface Mount Fuses



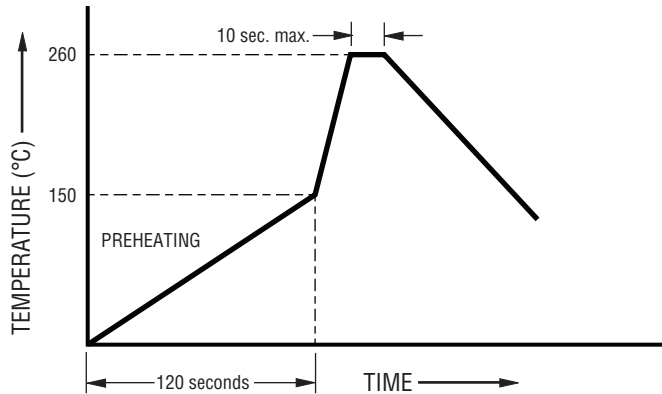
## Solder Reflow Recommendations



Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. ( $T_{smin}$ ) Temperature Max. ( $T_{smax}$ ) Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	150 °C 200 °C 60~120 seconds
Ramp Up Rate ( $T_L$ to $T_p$ )	3 °C / second max.
Liquidous Temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	217 °C 60~150 seconds
Peak Package Body Temperature ( $T_p$ )	260 °C
Time ( $t_p$ )* within 5 °C of the specified classification temperature ( $T_c$ )	30 seconds*
Ramp Down Rate ( $T_p$ to $T_L$ )	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

## Recommended Temperature Profile for Wave Soldering

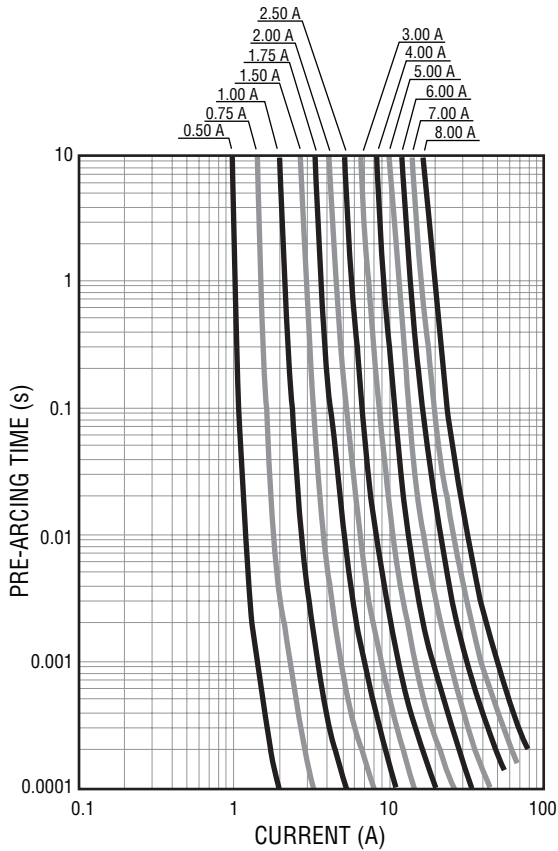


Wave soldering is suitable for 1206 size models.

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Average Pre-Arcing Time vs. Current Curves



Average  $I^2t$  vs. t Curves

