

## SinglFuse™ SF-1206HIxxxM Series Features

- Single blow fuse for overcurrent protection
- 3216 (EIA 1206) footprint
- High inrush current withstand fuse
- UL 248-14 listed
- RoHS compliant\* and halogen free\*\*
- Multilayer SMD design
- Surface mount packaging for automated assembly

### SF-1206HIxxxM Series - High Inrush Multilayer Surface Mount Fuses

#### Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I <sup>2</sup> t (A <sup>2</sup> s) ****	Agency Recognition
							cUL E198545
SF-1206HI050M-2	0.50	Open within 5 sec. at 350 % rated current  Open within 60 sec. at 200 % rated current	0.995	DC 65 V	DC 65 V 50 A	0.0354	✓
SF-1206HI075M-2	0.75		0.418			0.101	✓
SF-1206HI100M-2	1.00		0.3383			0.111	✓
SF-1206HI150M-2	1.50		0.1493	DC 63 V	DC 63 V 50 A	0.333	✓
SF-1206HI200M-2	2.00		0.0896			0.81	✓
SF-1206HI250M-2	2.50		0.0647			1.202	✓
SF-1206HI300M-2	3.00		0.0348	DC 32 V	DC 32 V 50 A	1.364	✓
SF-1206HI350M-2	3.50		0.0289			1.858	✓
SF-1206HI400M-2	4.00		0.0229			2.767	✓
SF-1206HI450M-2	4.50		0.0209			3.23	✓
SF-1206HI500M-2	5.00		0.0170			5.56	✓
SF-1206HI600M-2	6.00		0.0130	DC 24 V	DC 24 V 80 A	12.63	✓
SF-1206HI700M-2	7.00		0.0100			30.3	✓
SF-1206HI800M-2	8.00		0.0090			60.6	✓

\*\*\* Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±30 %.

\*\*\*\* Melting I<sup>2</sup>t calculated at 1000 % of current rating.

#### Reliability Testing

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

\* 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.

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Users should verify actual device performance in their specific applications.

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**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# SingIFuse™ SF-1206HxxxM Series Applications

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

**SF-1206HxxxM Series - High Inrush Multilayer Surface Mount Fuses** BOURNS®

**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

**Typical Part Marking**

Represents total content. Layout may vary.



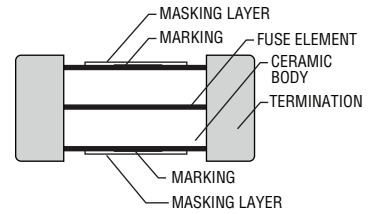
RATED CURRENT (A)	
C = 0.50	L = 3.50
D = 0.75	M = 4.00
E = 1.00	T = 4.50
G = 1.50	N = 5.00
I = 2.00	O = 6.00
J = 2.50	P = 7.00
K = 3.00	R = 8.00

**How to Order**

**SF - 1206 HI 100 M - 2**

SingIFuse™  
 Product Designator  
 SMD Footprint  
   1206 = 3216 (EIA 1206) size  
 Fuse Blow Type  
   HI = High Inrush Capability  
 Rated Current  
   050 ~ 800 (0.5 A ~ 8.0 A)  
 Structure Type  
   M = Multilayer  
 Packaging Type  
   - 2 = Tape & Reel

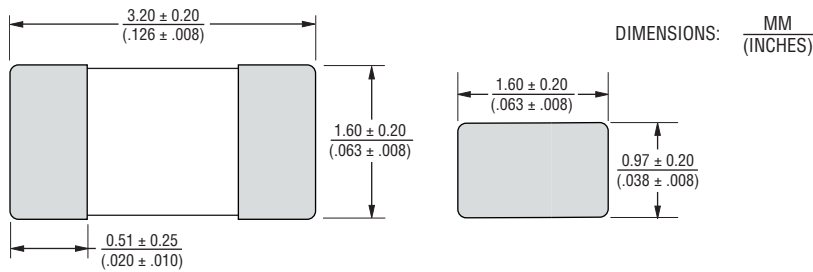
**Construction**



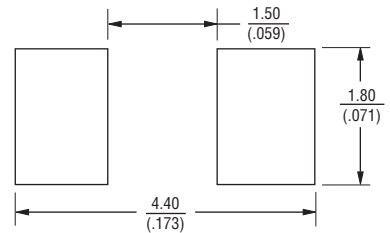
**Packaging Quantity**

3,000 pieces per 7-inch reel

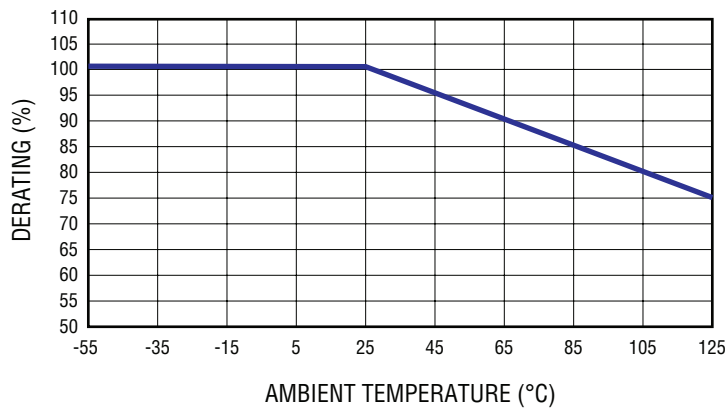
**Product Dimensions**



**Recommended Pad Layout**



**Current Rating Thermal Derating Curve**



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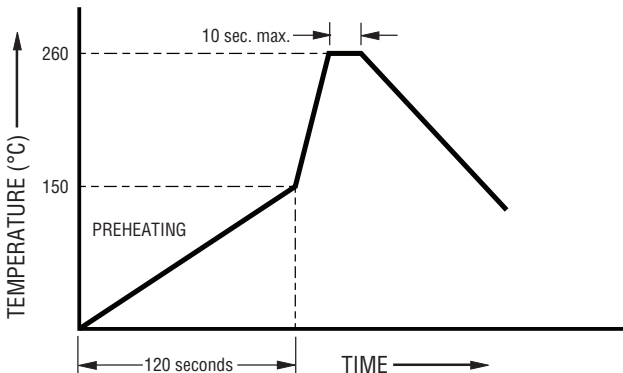
**Solder Reflow Recommendations**



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.

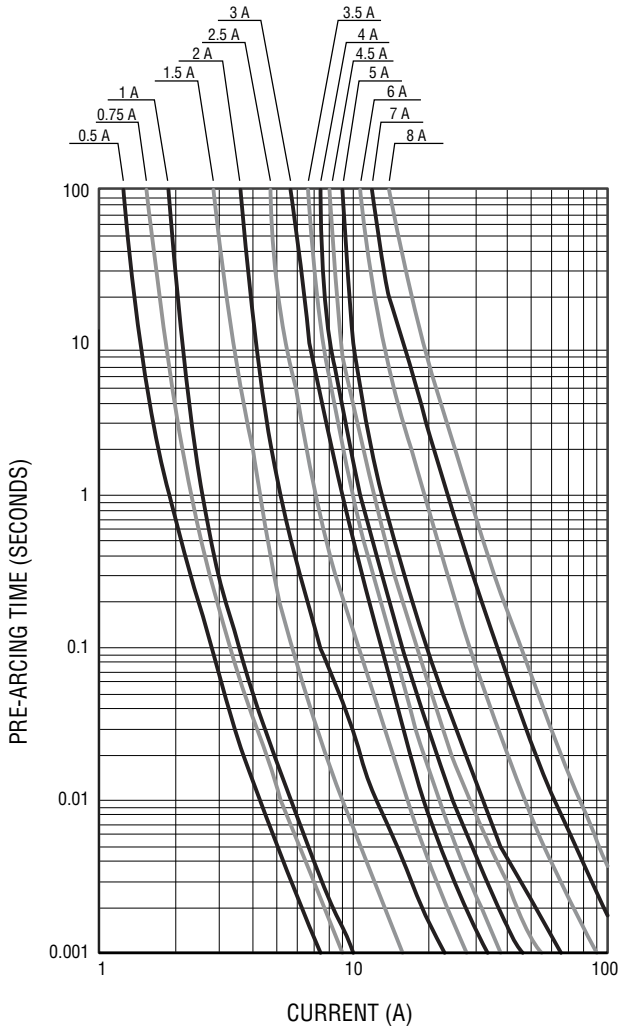
\* Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

**Recommended Temperature Profile for Wave Soldering**

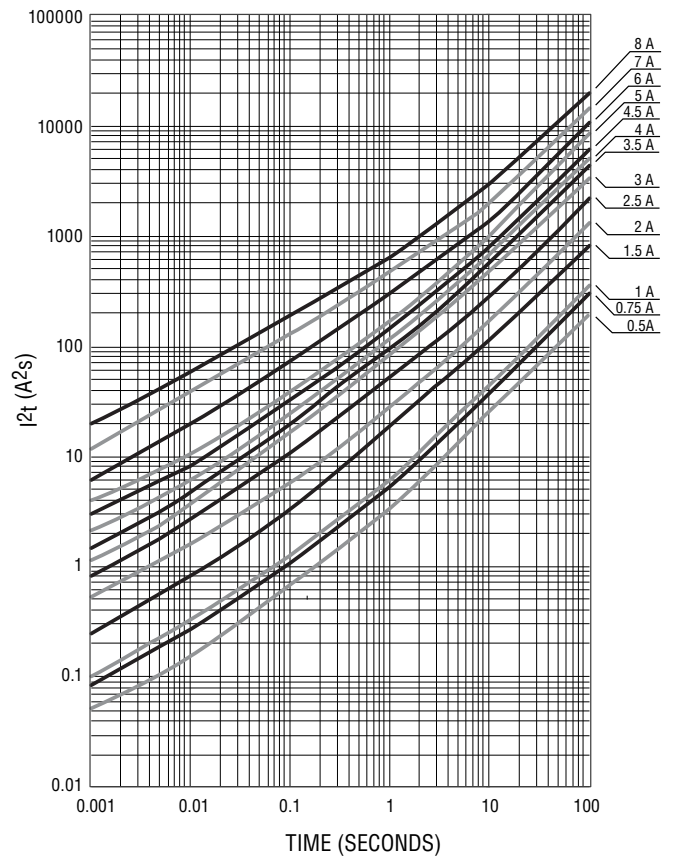


Wave soldering is suitable for 1206 size models.

Average Pre-Arcing Time vs. Current Curves



Average  $I^2t$  vs. t Curves



REV. E 09/20

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# SF-1206HlxxxM Series Tape and Reel Packaging Specifications

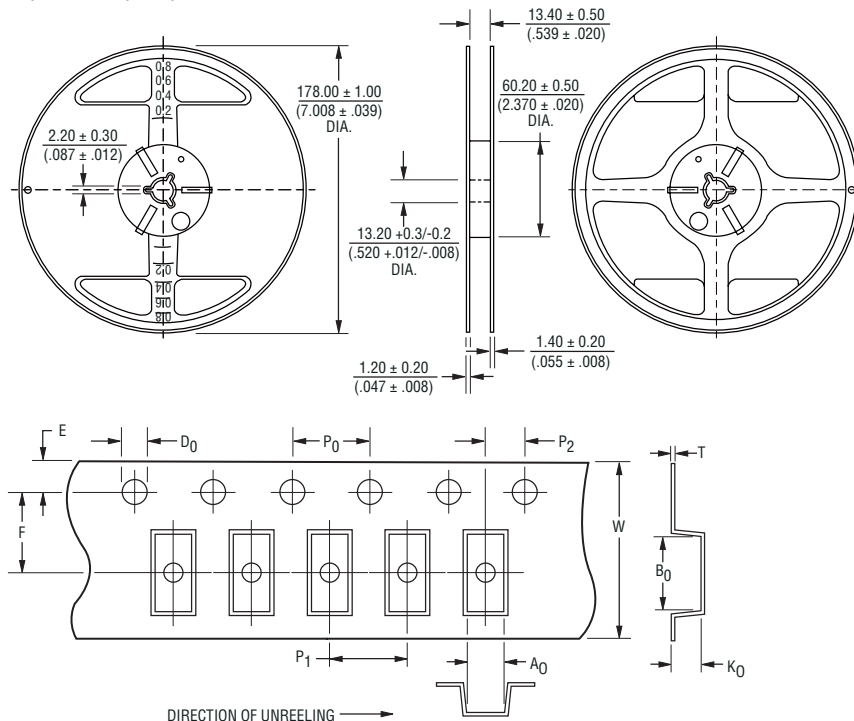


## SF-1206HlxxxM Series per EIA 481-2

### Tape Dimensions

W	$\frac{8.00 \pm 0.10}{(.315 \pm .004)}$
P <sub>0</sub>	$\frac{4.0 \pm 0.10}{(.157 \pm .004)}$
P <sub>1</sub>	$\frac{4.0 \pm 0.10}{(.157 \pm .004)}$
P <sub>2</sub>	$\frac{2.0 \pm 0.05}{(.079 \pm .002)}$
A <sub>0</sub>	$\frac{1.80 \pm 0.10}{(.071 \pm .004)}$
B <sub>0</sub>	$\frac{3.50 \pm 0.10}{(.138 \pm .004)}$
F	$\frac{3.50 \pm 0.05}{(.138 \pm .002)}$
E <sub>1</sub>	$\frac{1.75 \pm 0.10}{(.069 \pm .004)}$
D <sub>0</sub>	$\frac{1.50 \pm 0.10}{(.059 \pm .004)}$
K <sub>0</sub>	$\frac{1.10 \pm 0.10}{(.043 \pm .004)}$
T	$\frac{0.23 \pm 0.02}{(.009 \pm .001)}$

PACKAGING: Plastic tape, 3,000 pcs. per reel



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

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