

## SinglFuse<sup>™</sup> SF-1206HHxxM Series Features

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

SF-1206HHxxM Series - High Current & High Inrush Multilayer Surface Mount Fuses

#### **Electrical Characteristics**

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I²t (A²s) ****
SF-1206HH10M-2	10.0	Open within 5 sec. at 350 % rated current	0.0045		DC 24 V 150 A	12.0
SF-1206HH12M-2	12.0		0.0039		DC 24 V 150 A	19.0
SF-1206HH15M-2	15.0		0.0031	DC 24 V	DC 24 V 200 A	34.0
SF-1206HH20M-2	20.0		0.0020	DC 24 V		64.0
SF-1206HH25M-2	25.0		0.0016		DC 24 V 250 A	187.0
SF-1206HH30M-2	30.0		0.0012		DC 24 V 300 A	270.0

Resistance value measured with ≤10 % rated current at 25 °C ambient.

#### **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

### **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

## **BOURNS**®

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Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

<sup>\*\*\*\*</sup> Melting I2t calculated at 1000 % of current rating.

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 (CI) content is 1500 ppm or less.

<sup>&</sup>quot;SinglFuse" is a trademark of Bourns, Inc.

## SinglFuse<sup>™</sup> SF-1206HHxxM Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- MP3 players

- Cell phones
- Rechargeable battery packs
  - S
- LED lightingPower tools

- Battery chargers
- Set-top boxes
- Out tob poves
- Industrial controllers
- Battery Management Systems (BMS)

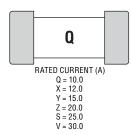
## SF-1206HHxxM Series - High Current & High Inrush Multilayer Surface Mount Fuses

## **BOURNS**®

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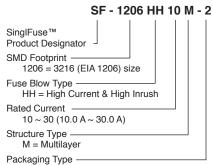
### **Typical Part Marking**

Represents total content. Layout may vary.

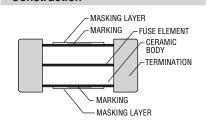


# How to Order

- 2 = Tape & Reel



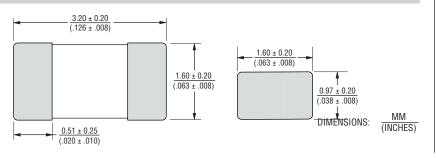
#### Construction



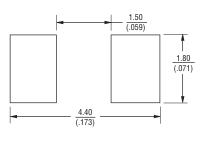
### **Packaging Quantity**

3,000 pieces per 7-inch reel

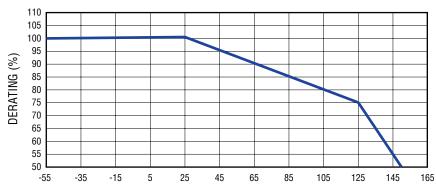
## **Product Dimensions**



## **Recommended Pad Layout**



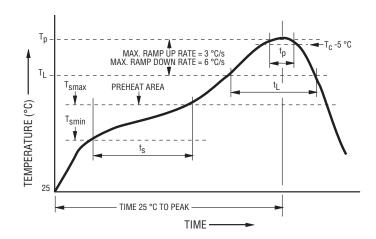
## **Current Rating Thermal Derating Curve**



MAXIMUM OPERATING TEMPERATURE (°C)



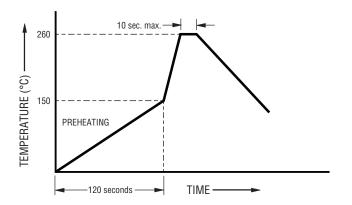
## **Solder Reflow Recommendations**



Profile Feature	Pb-Free Assembly	
Preheat / Soak:		
Temperature Min. (T <sub>smin</sub> )	150 °C	
Temperature Max. (T <sub>smax</sub> )	200 °C	
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60~120 seconds	
Ramp Up Rate (T <sub>L</sub> to T <sub>p</sub> )	3 °C / second max.	
Liquidous Temperature (T <sub>L</sub> )	217 °C	
Time (t <sub>L</sub> ) maintained above T <sub>L</sub>	60~150 seconds	
Peak Package Body	260 °C	
Temperature (T <sub>p</sub> )		
Time $(t_p)^*$ within 5 °C of the specified classification temperature $(T_c)$	30 seconds*	
Ramp Down Rate (T <sub>p</sub> to T <sub>L</sub> )	6 °C / second max.	
Time 25 °C to Peak Temperature	8 minutes max.	

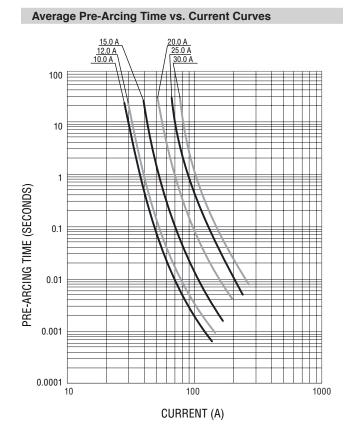
<sup>\*</sup> Tolerance for peak profile temperature (Tp ) is defined as a supplier minimum and a user maximum.

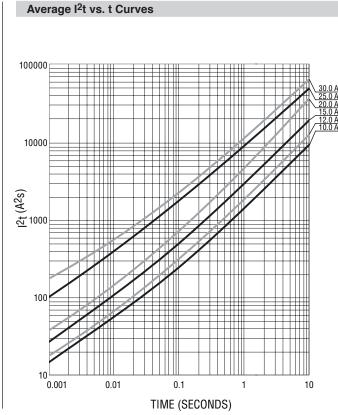
### **Recommended Temperature Profile for Wave Soldering**



Wave soldering is suitable for 1206 size models.





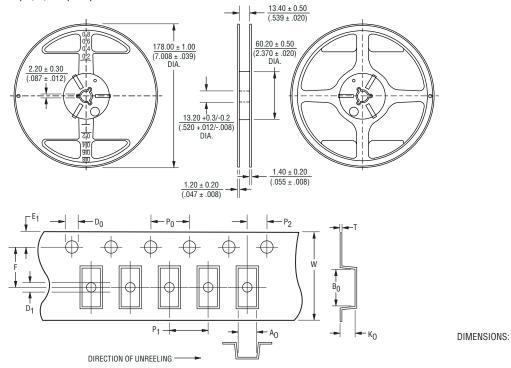


 $\mathsf{MM}$ 

(INCHES)

Tape Dimensions	SF-1206HHxxM Series per EIA 481-2
W	$\frac{8.00 \pm 0.10}{(.315 \pm .004)}$
$\overline{P_0}$	$\frac{4.0 \pm 0.10}{(.157 \pm .004)}$
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>	1.50 + 0.10 (.059 + .004)
κ <sub>0</sub>	1.10 + 0.10 (.043 + .004)
Т	$\frac{0.23 \pm 0.02}{(.009 \pm .001)}$

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



Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

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