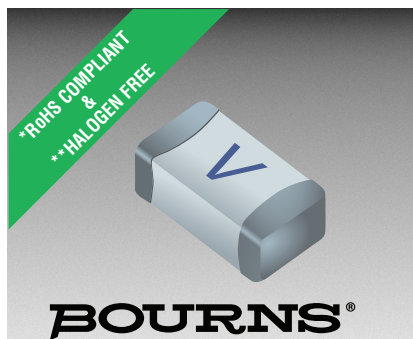




SinglFuse™ SF-1206HVxxM Series Features

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

SF-1206HVxxM Series - High Voltage & High Current Multilayer Surface Mount Fuses

Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I ² t (A ² s) ****
SF-1206HV10M-2	10.0	Open within 5 sec. at 350 % rated current	0.0055	DC 35 V	DC 35 V 150 A	15.0
SF-1206HV12M-2	12.0		0.0045			20.0
SF-1206HV15M-2	15.0		0.0032			35.0
SF-1206HV20M-2	20.0		0.0023			80.0
SF-1206HV25M-2	25.0		0.0016		DC 35 V 200A	120.0
SF-1206HV30M-2	30.0		0.0012		DC 35 V 200 A	180.0
SF-1206HV40M-2	40.0		0.0009		DC 26 V 300 A	240.0

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

**** Melting I²t 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

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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* 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.

Users should verify actual device performance in their specific applications.

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SinglFuse™ SF-1206HVxxM Series Applications

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

SF-1206HVxxM Series - High Voltage & High Current Multilayer Surface Mount Fuses

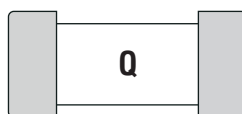
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Environmental Characteristics

Operating Temperature.....	-55 °C to +150 °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.



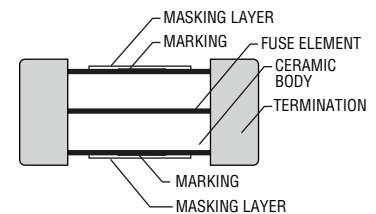
RATED CURRENT (A)
 Q = 10.0 S = 25.0
 X = 12.0 V = 30.0
 Y = 15.0 O = 40.0
 Z = 20.0

How to Order

SF - 1206 HV 10 M - 2

SinglFuse™
 Product Designator
 SMD Footprint
 1206 = 3216 (EIA 1206) size
 Fuse Blow Type
 HV = High Voltage & High Current
 Rated Current
 10 ~ 40 (10.0 A ~ 40.0 A)
 Structure Type
 M = Multilayer
 Packaging Type
 - 2 = Tape & Reel

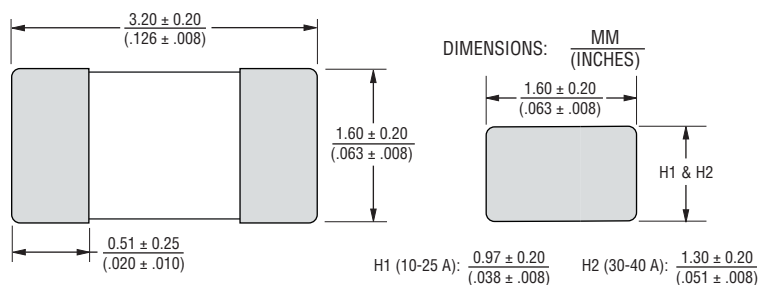
Construction



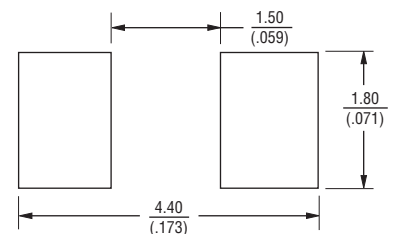
Packaging Quantity

3,000 pieces per 7-inch reel

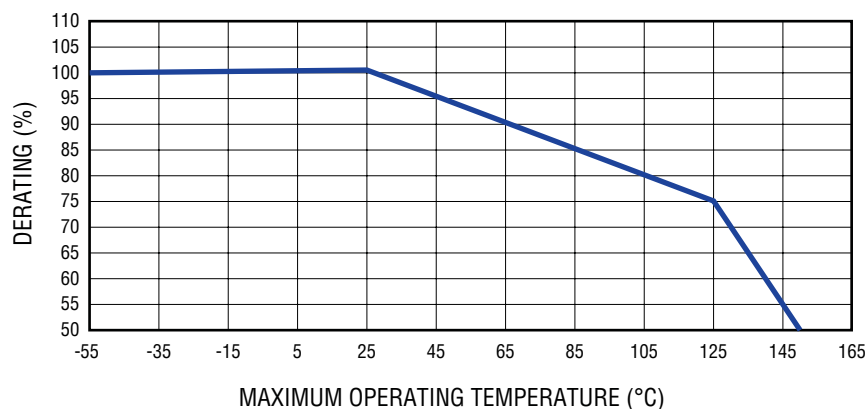
Product Dimensions



Recommended Pad Layout



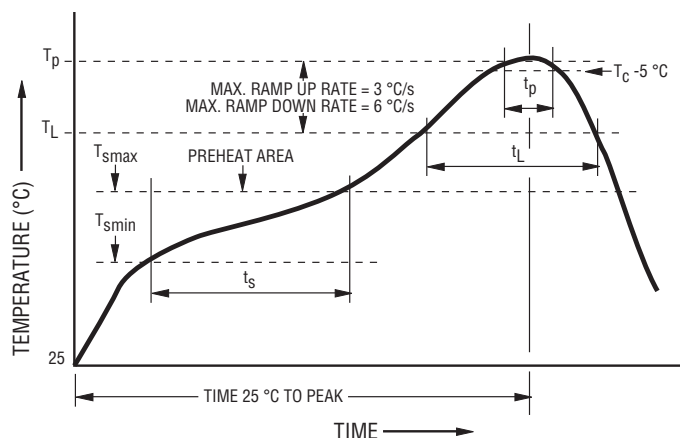
Current Rating Thermal Derating Curve



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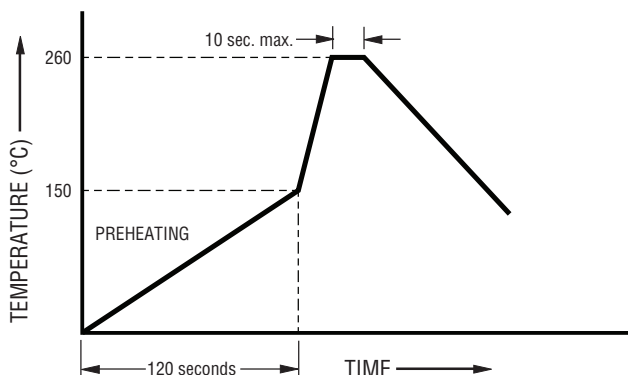
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Solder Reflow Recommendations

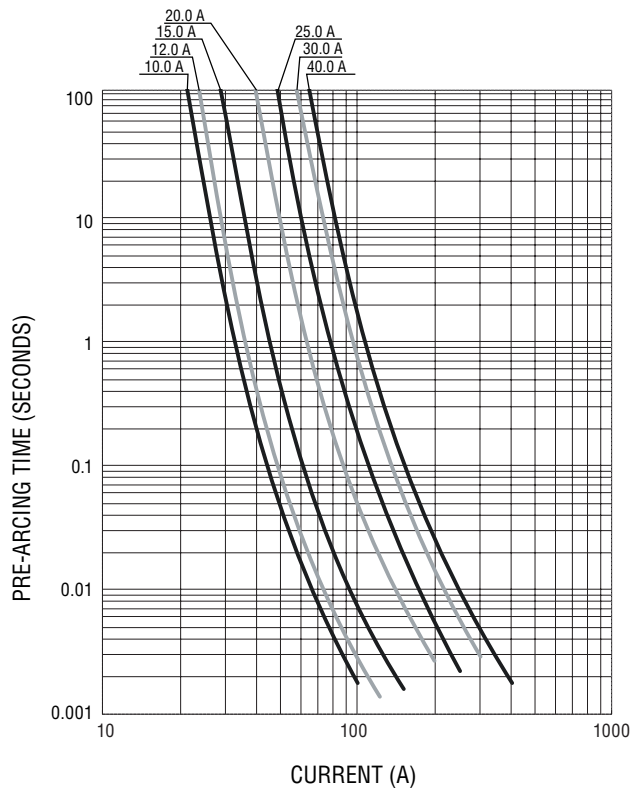
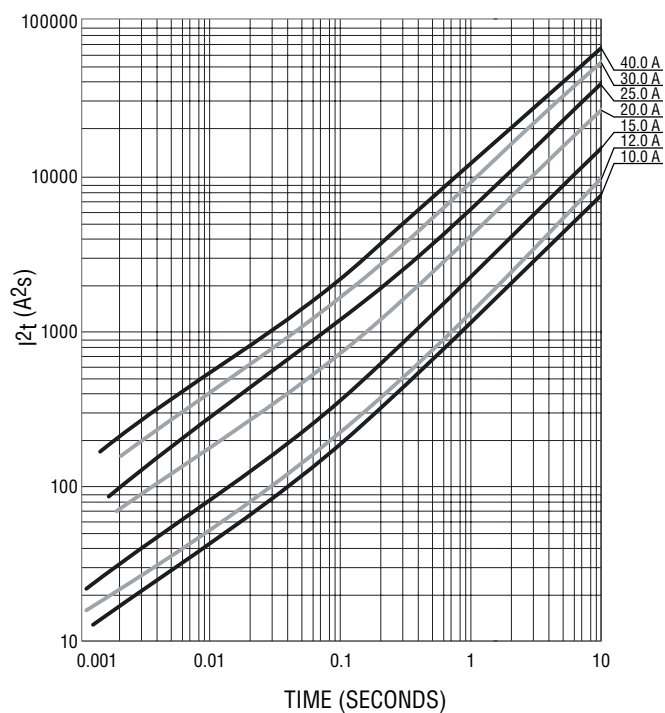
Profile Feature	Pb-Free Assembly
Preheat / Soak:	
Temperature Min. (T_{smin})	150 °C
Temperature Max. (T_{smax})	200 °C
Time (t_s) from (T_{smin} to T_{smax})	60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60~150 seconds
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

SF-1206HVxxM Series Tape and Reel Packaging Specifications

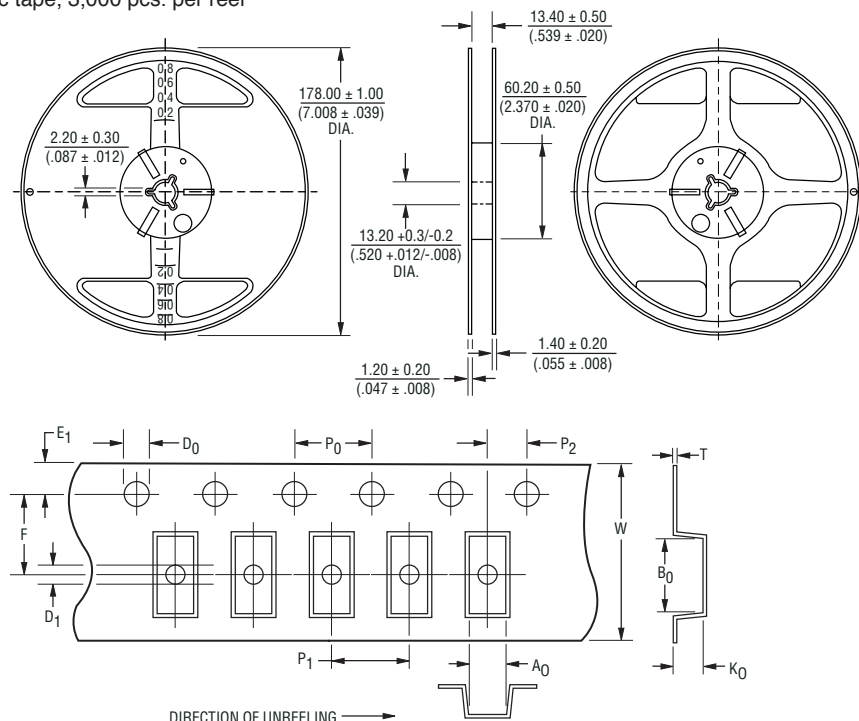
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Tape Dimensions

SF-1206HVxxM Series per EIA 481-2

W	$\frac{8.00 \pm 0.10}{(.315 \pm .004)}$
P ₀	$\frac{4.00 \pm 0.10}{(.157 \pm .004)}$
P ₁	$\frac{4.00 \pm 0.10}{(.157 \pm .004)}$
P ₂	$\frac{2.00 \pm 0.05}{(.079 \pm .002)}$
A ₀	$\frac{1.80 \pm 0.20}{(.071 \pm .008)}$
B ₀	$\frac{3.50 \pm 0.20}{(.138 \pm .008)}$
F	$\frac{3.50 \pm 0.05}{(.138 \pm .002)}$
E ₁	$\frac{1.75 \pm 0.10}{(.069 \pm .004)}$
D ₀	$\frac{1.50 \pm 0.10}{(.059 \pm .004)}$
K ₀ (SF-1206HV10M ~ SF-1206HV25M)	$\frac{1.27 \pm 0.20}{(.050 \pm .008)}$
K ₀ (SF-1206HV30M ~ SF-1206HV40M)	$\frac{1.40 \pm 0.20}{(.055 \pm .008)}$
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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