

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](#)

BOURNS®

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 520 390 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

www.bourns.com

* 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.

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Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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SingIFuse™ SF-1206HVxxM Series Applications

- Portable memory
- Cell phones
- 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)

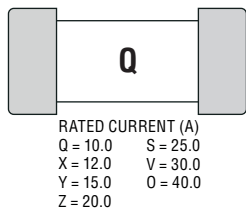
SF-1206HVxxM Series - High Voltage & High Current Multilayer Surface Mount Fuses **BOURNS®**

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.

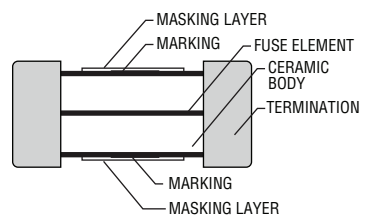


How to Order

SF - 1206 HV 10 M - 2

SingIFuse™
 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

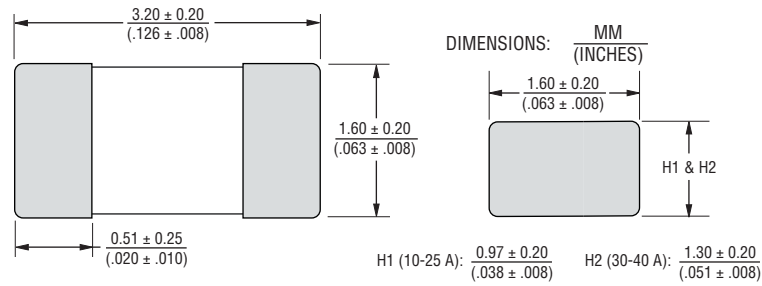
Construction



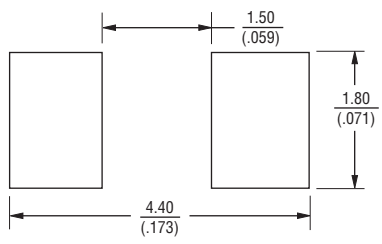
Packaging Quantity

3,000 pieces per 7-inch reel

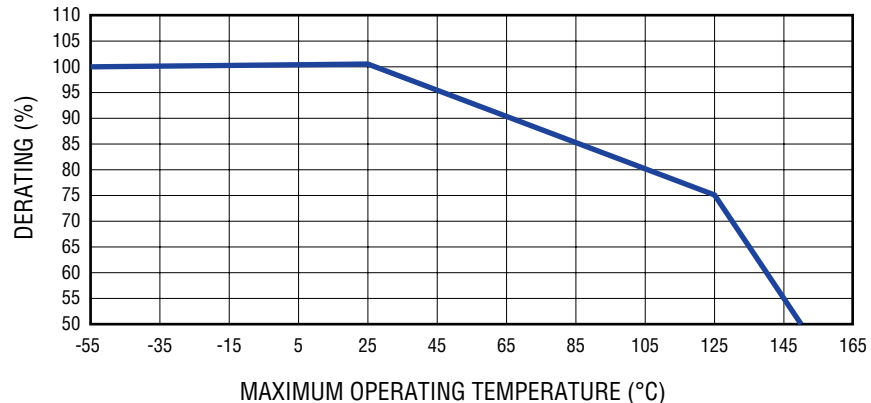
Product Dimensions



Recommended Pad Layout

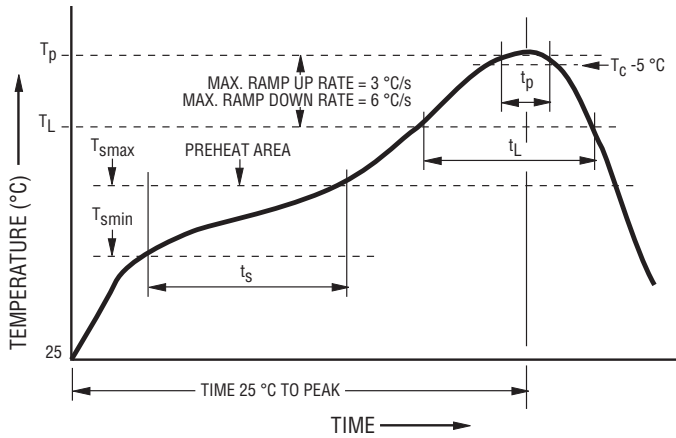


Current Rating Thermal Derating Curve



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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_d)	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_d)	260 °C
Time (t_p)* within 5 °C of the specified classification temperature (T_c)	30 seconds*
Ramp Down Rate (T_d to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

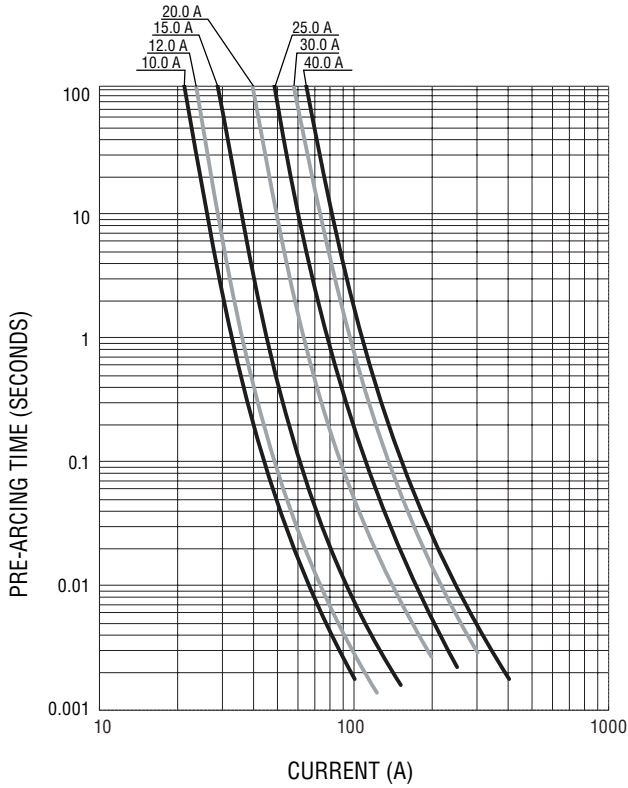
* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering

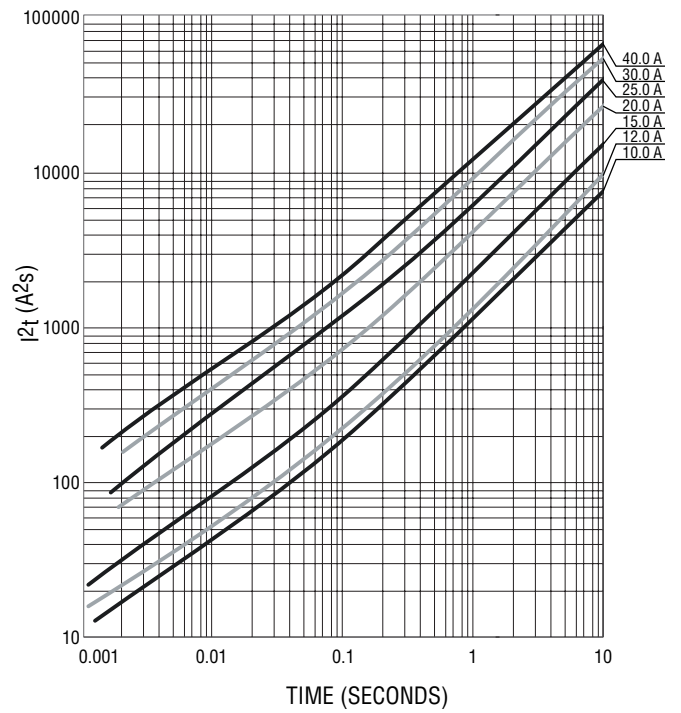


Wave soldering is suitable for 1206 size models.

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



SF-1206HVxxM Series Tape and Reel Packaging Specifications

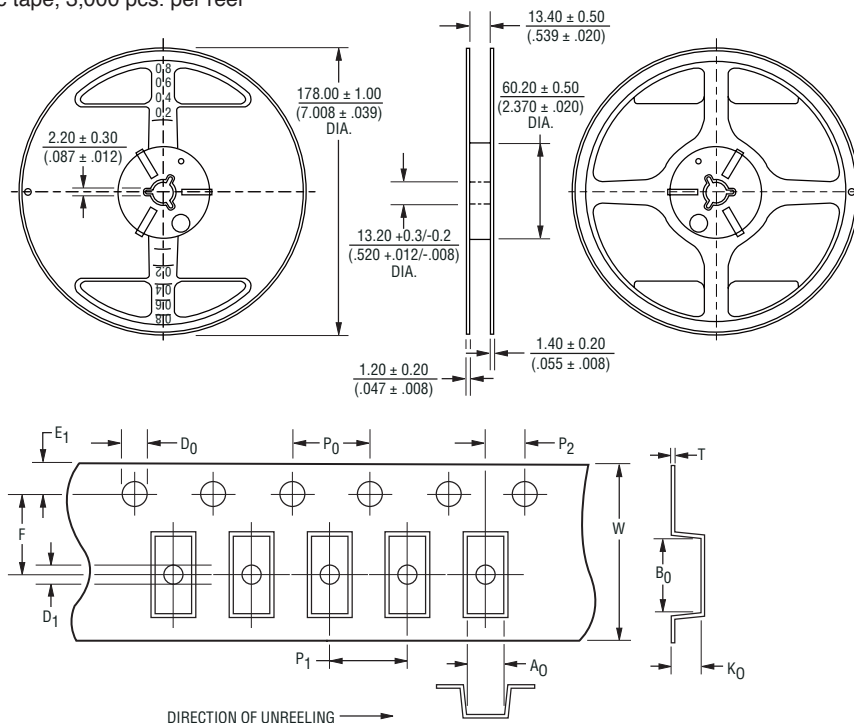
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Tape Dimensions

SF-1206HVxxM Series
per EIA 481-2

W	8.00 ± 0.10 (.315 ± .004)
P ₀	4.00 ± 0.10 (.157 ± .004)
P ₁	4.00 ± 0.10 (.157 ± .004)
P ₂	2.00 ± 0.05 (.079 ± .002)
A ₀	1.80 ± 0.20 (.071 ± .008)
B ₀	3.50 ± 0.20 (.138 ± .008)
F	3.50 ± 0.05 (.138 ± .002)
E ₁	1.75 ± 0.10 (.069 ± .004)
D ₀	1.50 ± 0.10 (.059 ± .004)
K ₀ (SF-1206HV10M ~ SF-1206HV25M)	1.27 ± 0.20 (.050 ± .008)
K ₀ (SF-1206HV30M ~ SF-1206HV40M)	1.40 ± 0.20 (.055 ± .008)
T	0.23 ± 0.02 (.009 ± .001)

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



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

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