

SingIFuse™ SF-1206HV-M Series Features

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

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

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
350 %	—	5 seconds

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s)****	Certifications cUL: E198545
SF-1206HV10M-2	10.0	0.0055	35 VDC	150 A @ 35 VDC	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		200 A @ 35 VDC	120.0	✓
SF-1206HV30M-2	30.0	0.0012		200 A @ 35 VDC 300 A @ 26 VDC	180.0	✓
SF-1206HV40M-2	40.0	0.0009			240.0	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±25 %.
**** Melting I^2t calculated at 1000 % of current rating.

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

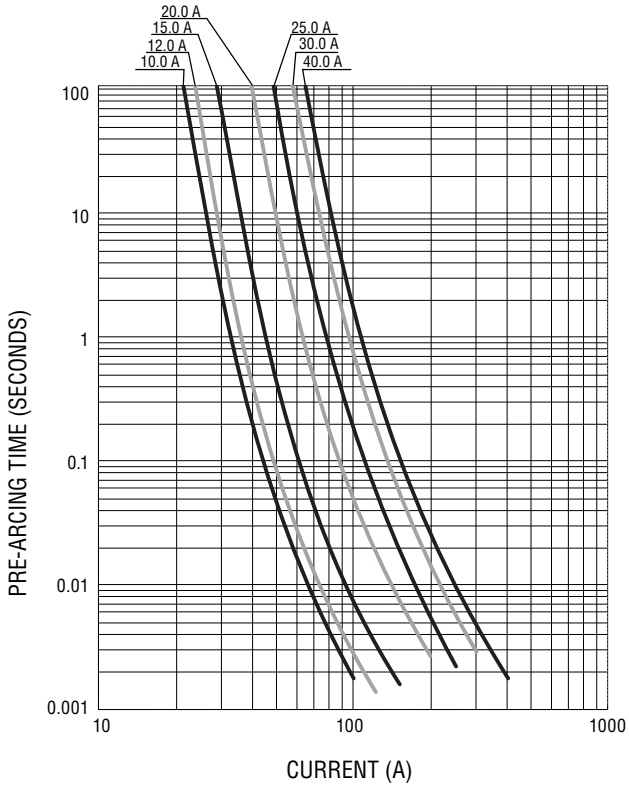
* Meets Bourns' internal AEC-Q200 equivalent test plan.
** RoHS Directive 2015/863, Mar 31, 2015 and Annex.
*** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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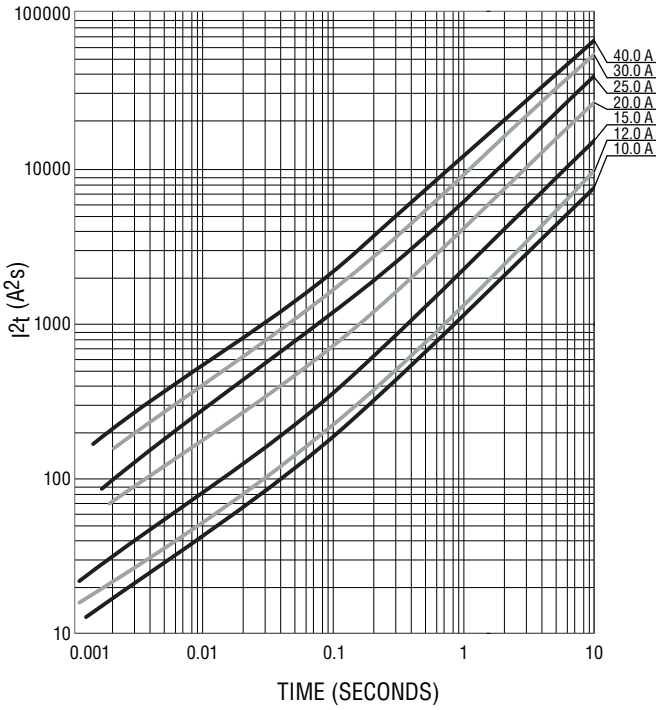
SingIFuse™ SF-1206HV-M Series Applications

- 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

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



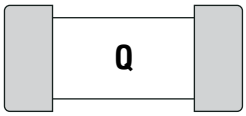
Environmental Characteristics

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

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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

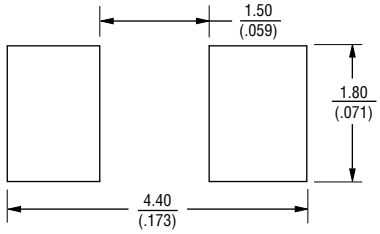
SF - 1206 HV 10 M - 2

- 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

Packaging

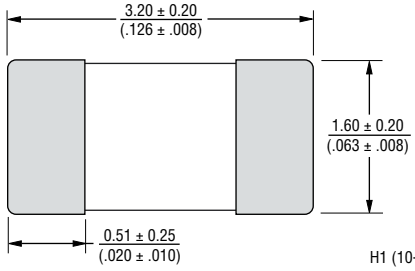
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	3,000 pieces
Packaging Code	-2

Recommended Pad Layout

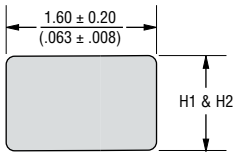


DIMENSIONS: MM / (INCHES)

Product Dimensions

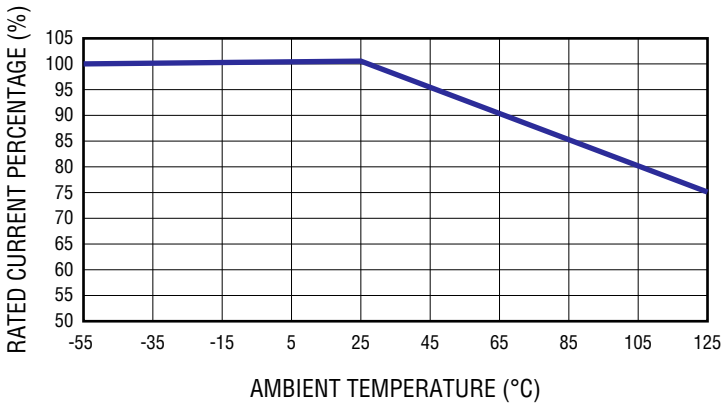


DIMENSIONS: MM / (INCHES)



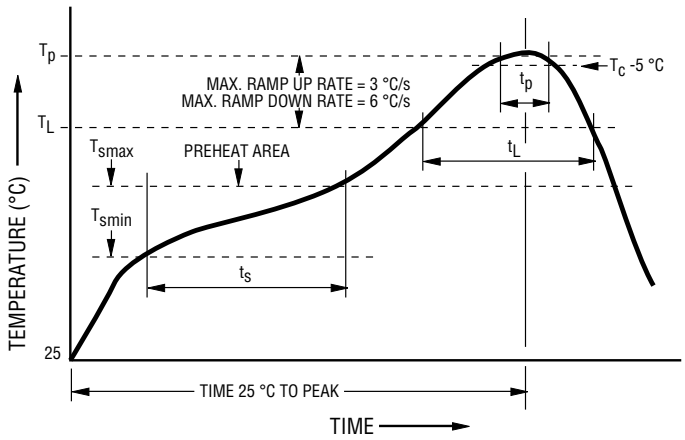
H1 (10-25 A): 0.97 ± 0.20 (.038 ± .008) H2 (30-40 A): 1.30 ± 0.20 (.051 ± .008)

Current Rating Thermal Derating Curve



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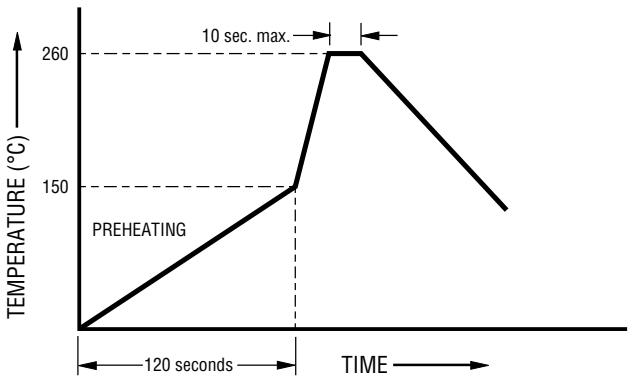
Solder Reflow Recommendations



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 (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.

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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

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