

SingIFuse™ SF-1206HI-M Series Features

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

SF-1206HI-M Series - High-Inrush Multilayer Surface Mount Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
200 % (1 A - 8 A)	1 second	60 seconds
350 % (0.5 A - 0.75 A)	—	5 seconds
1000 % (0.5 A - 5 A)	0.0002 seconds	0.02 seconds
1000 % (6 A - 8 A)	0.0002 seconds	0.04 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-1206HI050M-2	0.50	0.995	65 VDC	50 A @ 65 VDC	0.0354	✓
SF-1206HI075M-2	0.75	0.418			0.101	✓
SF-1206HI100M-2	1.00	0.3383	63 VDC	50 A @ 63 VDC	0.111	✓
SF-1206HI150M-2	1.50	0.1493			0.333	✓
SF-1206HI200M-2	2.00	0.0896			0.81	✓
SF-1206HI250M-2	2.50	0.0647	32 VDC	50 A @ 32 VDC	1.202	✓
SF-1206HI300M-2	3.00	0.0348			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	24 VDC	80 A @ 24 VDC	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^2t calculated at 1000 % of current rating.

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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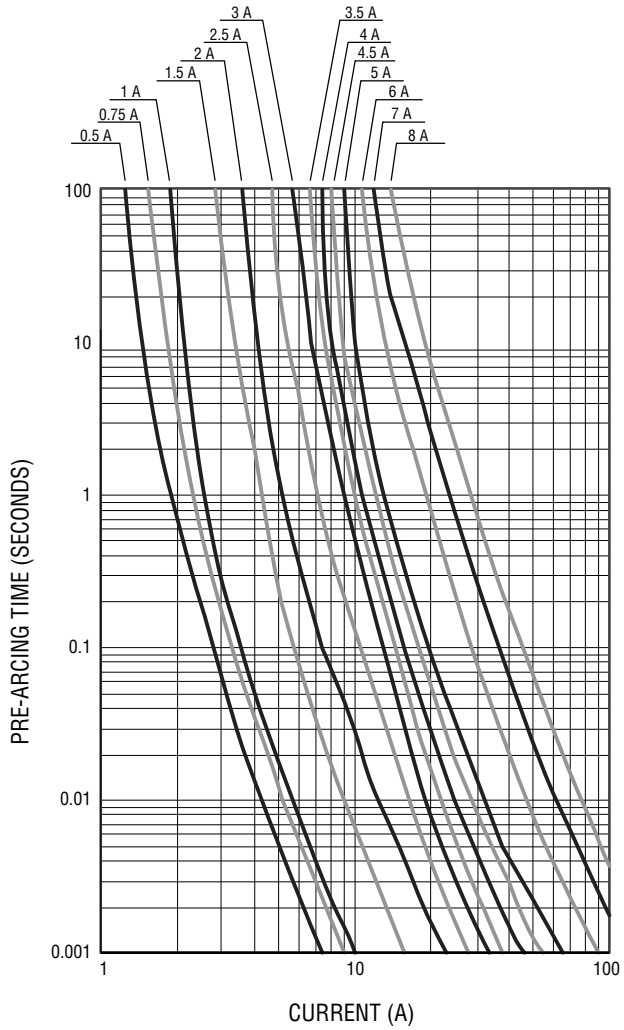
SingIFuse™ SF-1206HI-M Series Applications

- 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

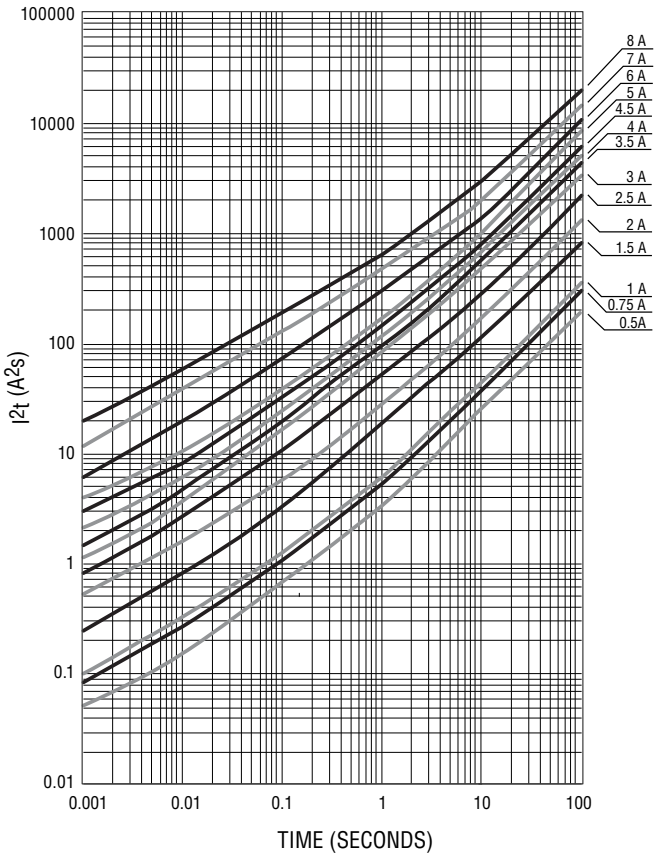
SF-1206HI-M Series - High Inrush Multilayer Surface Mount Fuses

BOURNS®

Average Pre-Arcing Time vs. Current Curves



Average I²t 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)

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

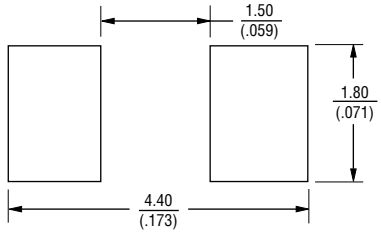
SF - 1206 HI 100 M - 2

- SinglFuse™ 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

Packaging

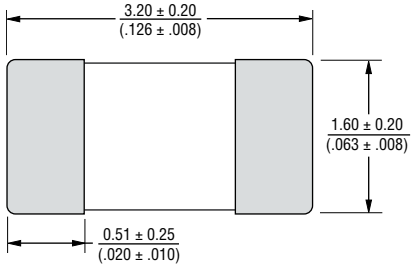
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	3,000 pieces
Packaging Code	-2

Recommended Pad Layout

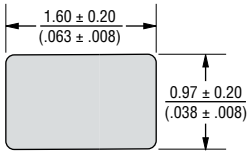


DIMENSIONS: MM / (INCHES)

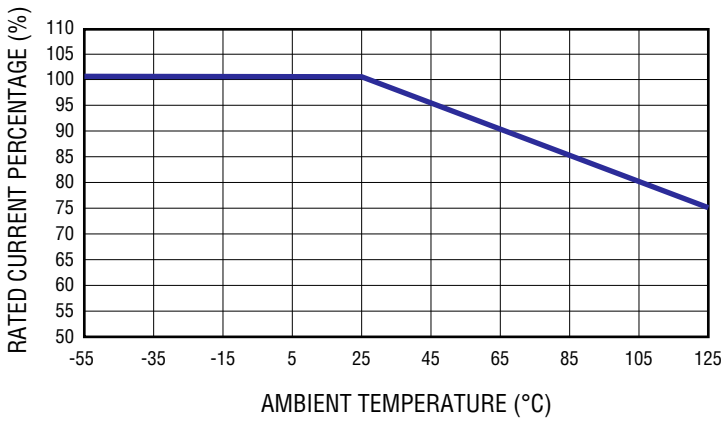
Product Dimensions



DIMENSIONS: MM / (INCHES)

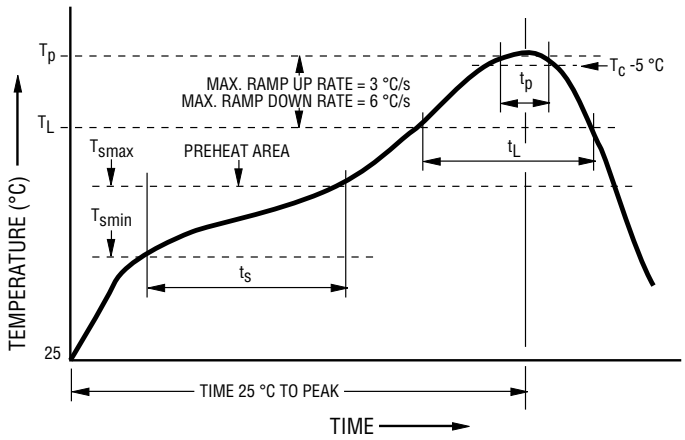


Current Rating Thermal Derating Curve



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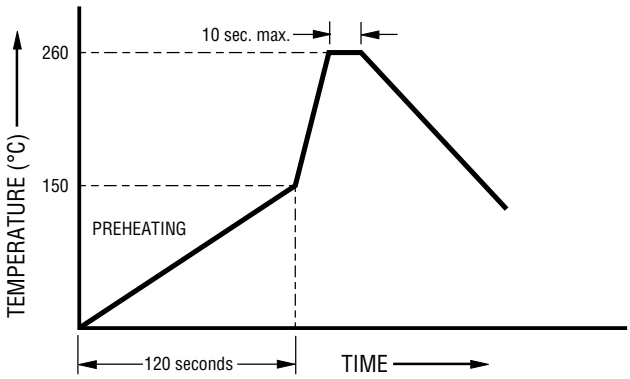
Solder Reflow Recommendations



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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