

Features

- Fast acting fusing speed
- EIA 1206 (3216 metric) footprint
- UL 248-14 compliant
- RoHS* compliant and halogen free**

SF-1206F-M Series - Fast Acting SMD Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
200 % (2.5 A - 5 A)	—	60 seconds
350 % (6 A - 8 A)	—	5 seconds
1000 %	0.0002 seconds	0.02 seconds

Additional Information

Click these links for more information:

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Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s)****	Certifications cUL: E198545
SF-1206F250M-2	2.5	0.065	65 VDC	60 A @ 65 VDC 80 A @ 48 VDC 100 A @ 32 VDC	1.162	✓
SF-1206F300M-2	3.0	0.042			2.424	✓
SF-1206F350M-2	3.5	0.033			2.828	✓
SF-1206F400M-2	4.0	0.026			3.838	✓
SF-1206F450M-2	4.5	0.024			3.939	✓
SF-1206F500M-2	5.0	0.018			4.44	✓
SF-1206F600M-2	6.0	0.011	48 VDC	80 A @ 48 VDC 100 A @ 32 VDC	13.13	✓
SF-1206F700M-2	7.0	0.009			19.2	✓
SF-1206F800M-2	8.0	0.007			20.2	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±30 %.
****Melting I^2t calculated at 10 times of rated current.

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CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

*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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Users should verify actual device performance in their specific applications.
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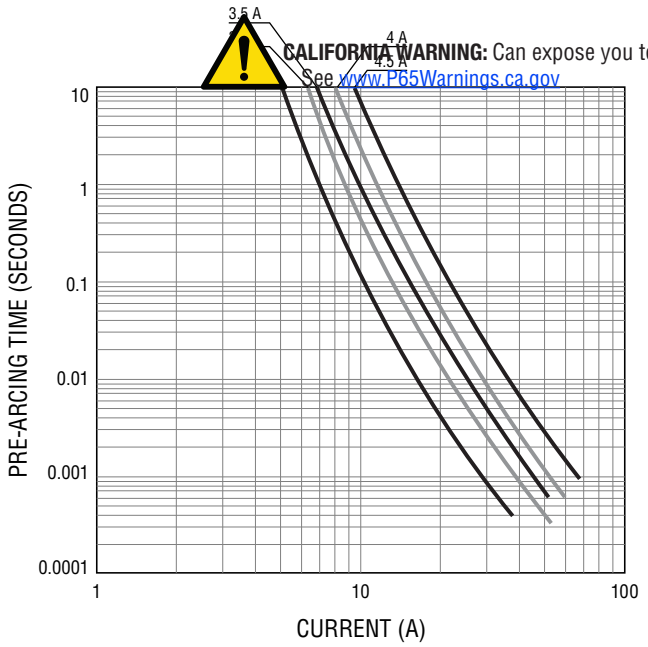
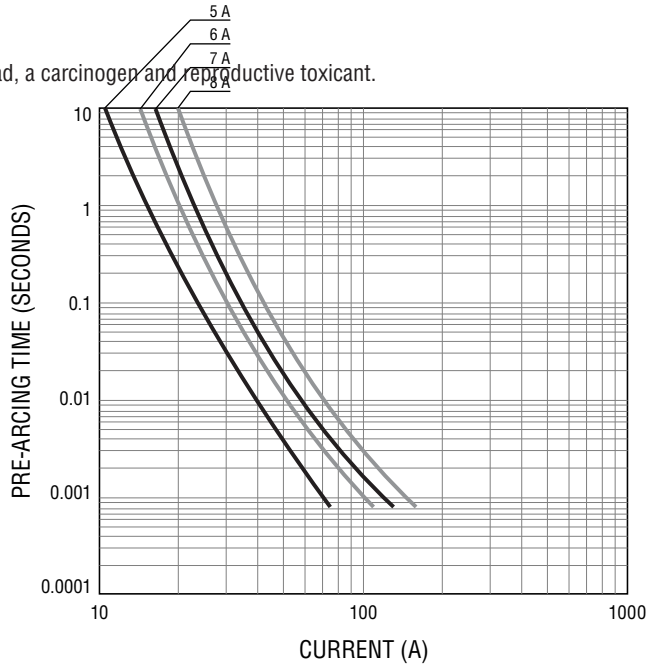
Average Pre-Arcing Time vs. Current Curves (2.5 A – 4.5 A)

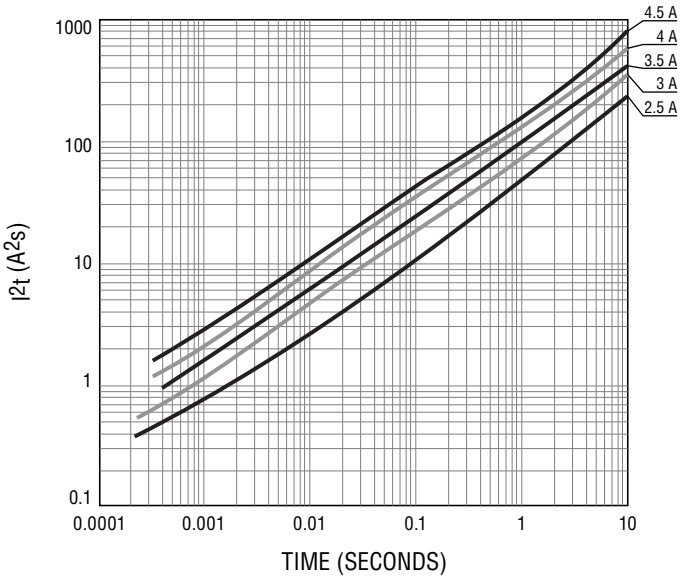


CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

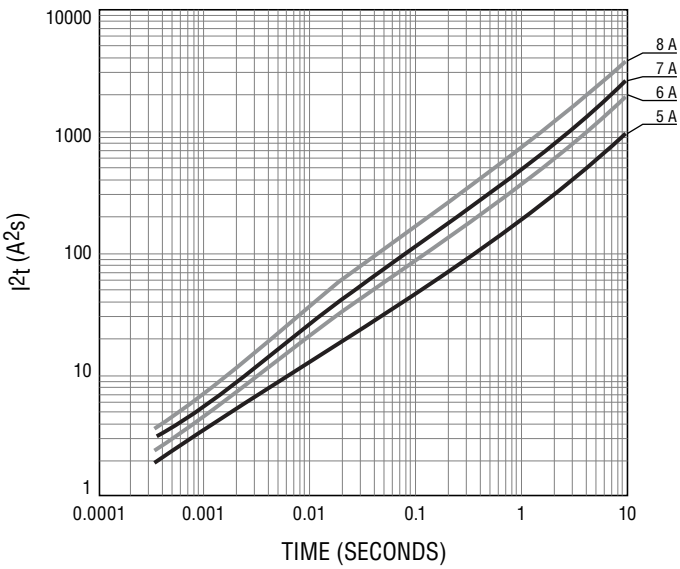
Average Pre-Arcing Time vs. Current Curves (5 A – 8 A)



Average I^2t vs. t Curves (2.5 A – 4.5 A)



Average I^2t vs. t Curves (5 A – 8 A)



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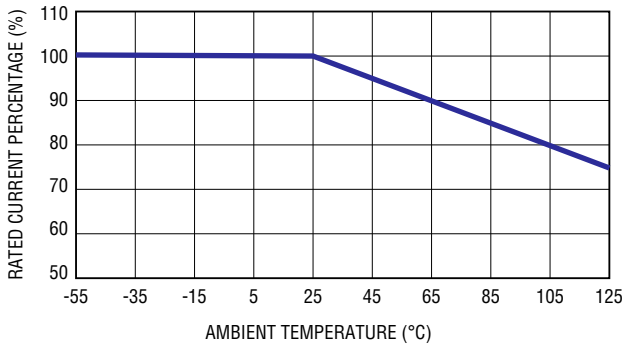
Environmental Characteristics

Operating Temperature	-55 °C to +125 °C
Storage Conditions	
Temperature	+5 °C to +35 °C
Humidity	40 % to 75 %
Moisture Sensitivity Level	1
ESD Classification[1]	Class 6

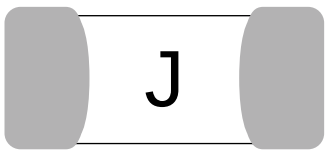
[1]per AEC-Q200-2, HBM

Current Rating Thermal Derating Curve



Typical Part Marking

Represents total content. Layout may vary.
Markings in blue color.



Rated Current	Part Marking
2.5 A	J
3 A	K
3.5 A	L
4 A	M
4.5 A	T

Rated Current	Part Marking
5 A	N
6 A	+
7 A	-
8 A	=

How to Order

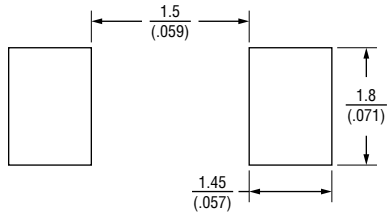
SF - 1206 F 250 M - 2

- SinglFuse™ Product Designator
- SMD Footprint
  1206 = EIA 1206 (3216 metric)
- Fuse Blow Type
  F = Fast Acting
- Rated Current
  250 ~ 800 = 2.5 A ~ 8 A
- Structure Type
  M = Ceramic Multilayer
- Packaging Type
  - 2 = Tape & Reel

Packaging

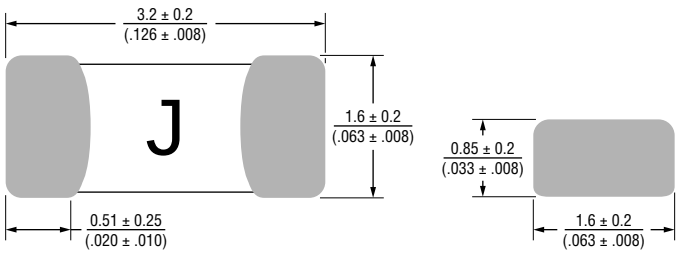
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	3,000 pieces
Packaging Code	-2

Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

Product Dimensions



DIMENSIONS: MM / (INCHES)

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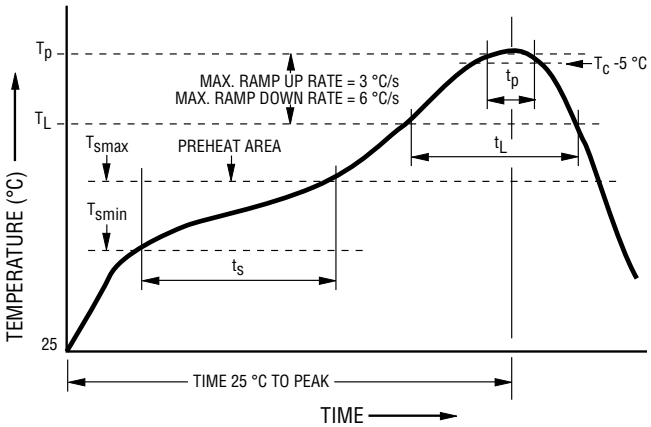
Solder Reflow Recommendations



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.

Reliability Tests

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 ≤ ±10 % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
4	Salt Spray	DCR change ≤ ±10 % No excessive corrosion	48 hour exposure	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 ±10 % 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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