SingIFuse™ SF-1206SPxxxM Series Features

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

SF-1206SPxxxM Series - Time Lag Multilayer Surface Mount Fuses

Electrical Characteristics

Model	Rated Current (Amps)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s) ****
SF-1206SP100M-2	1.00	Open within 1~120 sec. at 200 % rated current	0.3582	DC 63 V	DC 63 V 50 A	0.111
SF-1206SP125M-2	1.25		0.1990			0.222
SF-1206SP150M-2	1.50		0.1493			0.232
SF-1206SP200M-2	2.00		0.0876			0.636
SF-1206SP250M-2	2.50		0.0647	DC 32V	DC 32 V 50 A	0.91
SF-1206SP300M-2	3.00		0.0338			1.21
SF-1206SP350M-2	3.50		0.0279			1.62
SF-1206SP400M-2	4.00		0.0239			2.22
SF-1206SP450M-2	4.50		0.0199			3.64
SF-1206SP500M-2	5.00		0.0179			5.35
SF-1206SP550M-2	5.50		0.0139	DC 24V	DC 24 V 50 A	6.46
SF-1206SP600M-2	6.00		0.0109		DV 24 V 60 A	8.59
SF-1206SP700M-2	7.00		0.0100			10.1
SF-1206SP800M-2	8.00		0.0090			17.07

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±30 %.
**** Melting I^2t calculated at 0.001 second pre-arcing time.

Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Soldering heat resistance	DCR change ≤ ±10 % No mechanical damage	One dip at 260 °C for 60 seconds	MIL-STD-202 Method 210
2	Solderability	Minimum 95 % coverage	One dip at 245 °C for 5 seconds	MIL-STD-202 Method 208
3	Thermal shock	DCR change ≤ ±10 % No mechanical damage	100 cycles between -65 °C and +125 °C	MIL-STD-202 Method 107
4	Moisture resistance	DCR change ≤ ±15 % No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change ≤ ±10 % No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
6	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
7	Mechanical shock	DCR change ≤ ±10 % No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
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

* 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.

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

SingIFuse™ SF-1206SPxxxM Series Applications

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

SF-1206SPxxxM Series - Time Lag Multilayer Surface Mount Fuses

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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 %
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)

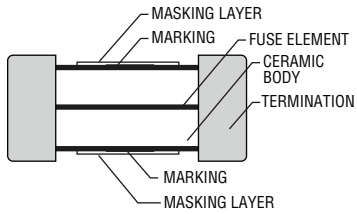
E = 1.00	M = 4.00
F = 1.25	T = 4.50
G = 1.50	N = 5.00
I = 2.00	U = 5.50
J = 2.50	O = 6.00
K = 3.00	P = 7.00
L = 3.50	R = 8.00

How to Order

SF - 1206 SP 100 M - 2

SingIFuse™ Product Designator
SMD Footprint
1206 = 3216 (EIA 1206) size
Fuse Blow Type
SP = Time Lag
Rated Current
100 ~ 800 (1.00 A ~ 8.00 A)
Structure Type
M = Multilayer
Packaging Type
- 2 = Tape & Reel

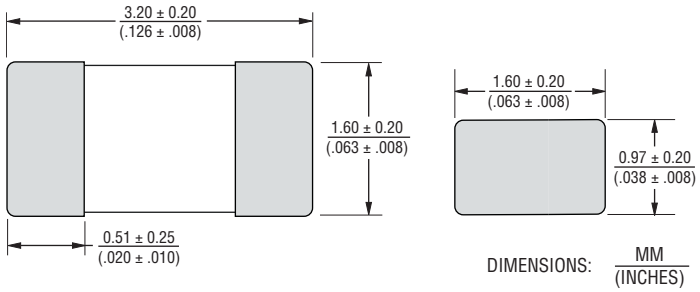
Construction



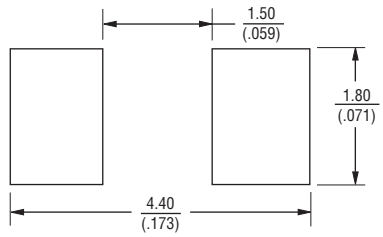
Packaging Quantity

3,000 pieces per 7-inch reel

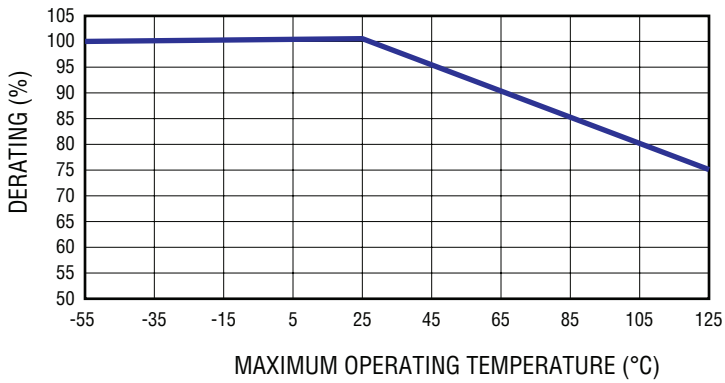
Product Dimensions



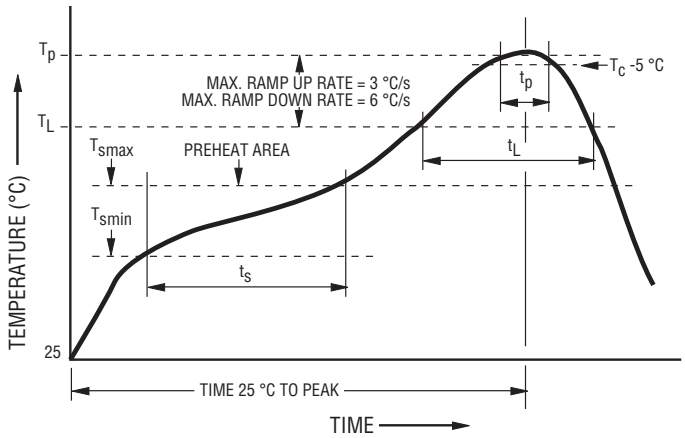
Recommended Pad Layout



Current Rating Thermal Derating Curve



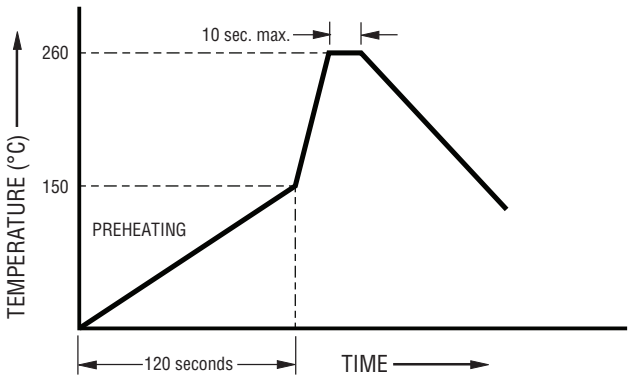
Solder Reflow Recommendations



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.

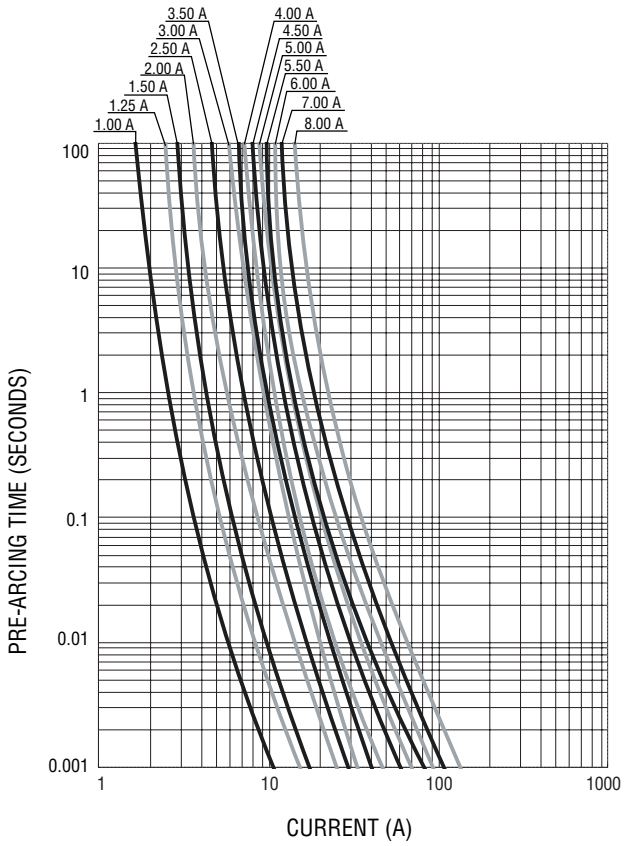
* Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.

Recommended Temperature Profile for Wave Soldering

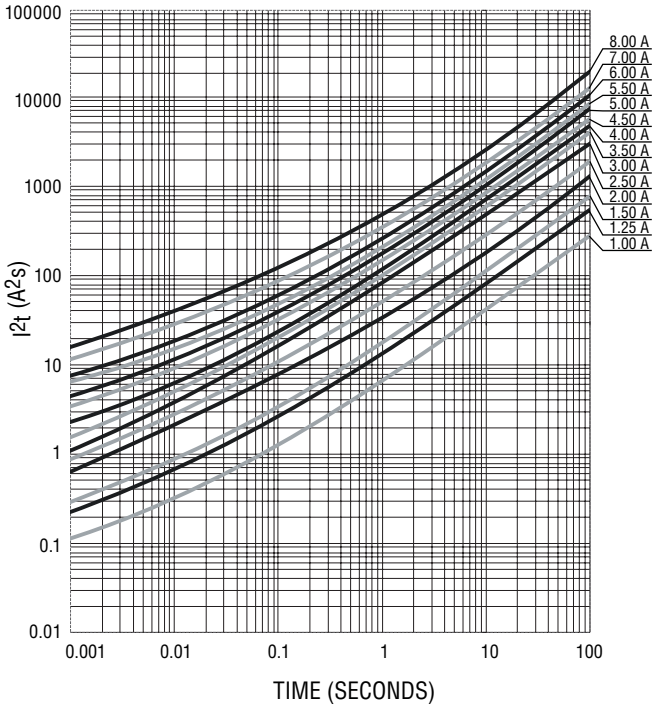


Wave soldering is suitable for 1206 size models.

Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



SF-1206SPxxxM Series Tape and Reel Packaging Specifications

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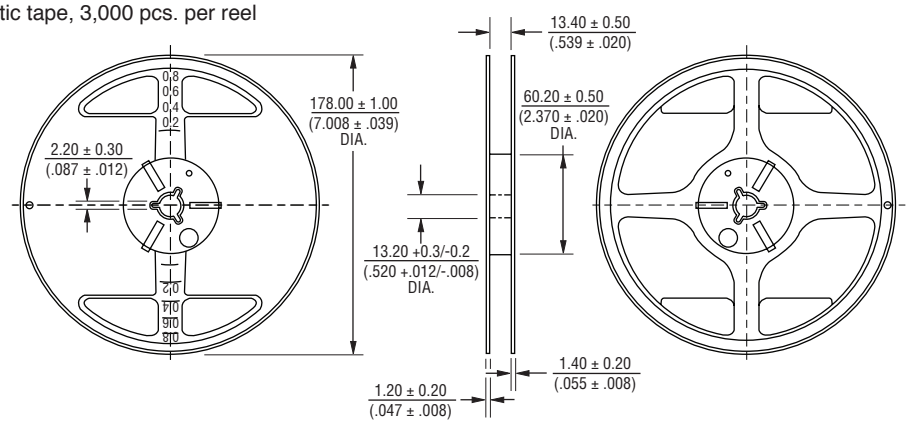
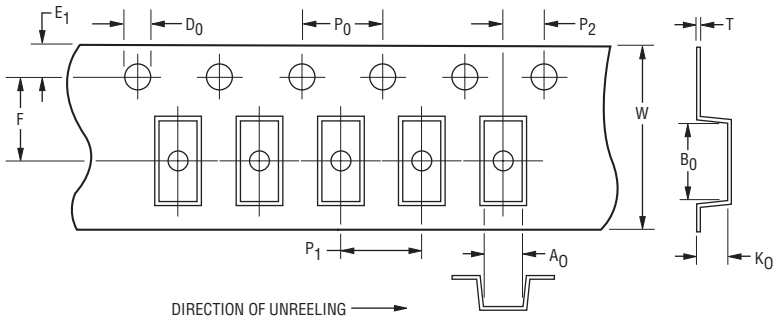
Tape Dimensions	SF-1206SPxxxM Series per EIA 481-2
W	8.00 ± 0.10 (.315 ± .004)
P_0	4.0 ± 0.10 (.157 ± .004)
P_1	4.0 ± 0.10 (.157 ± .004)
P_2	2.0 ± 0.05 (.079 ± .002)
A_0	1.80 ± 0.10 (.071 ± .004)
B_0	3.50 ± 0.10 (.138 ± .004)
F	3.50 ± 0.05 (.138 ± .002)
E_1	1.75 ± 0.10 (.069 ± .004)
D_0	1.50 + 0.10 (.059 + .004)
K_0	1.10 ± 0.10 (.043 ± .004)
T	0.23 ± 0.02 (.009 ± .001)

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





DIMENSIONS: MM (INCHES)

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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