



Features

- EIA 1206 (3216 metric) footprint
- Ceramic cavity laminate design for time lag application
- Surface mount packaging for automated assembly
- UL 248-14 listed
- RoHS compliant* and halogen free**

Applications

- PoE, PoE+
- Power supplies
- LCD/LED monitors
- DC/DC converters
- Industrial equipment

SF-1206SP175L-2-A9 - Time Lag Ceramic Cavity Laminate SMD Fuse

Clearing Time Characteristics

% of Current Rating	Clearing Time @ 25 °C	
	Min.	Max.
100 %	4 hours	—
200 %	1 second	120 seconds

Additional Information



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Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I ² t (A ² s) ****	Agency Recognition
						cUL: E198545
SF-1206SP175L-2-A9	1.75	0.08	63 VDC	100 A @ 63 VDC	1.5	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ± 25 %.

**** Melting I²t calculated at 10 times rated current.

Reliability Testing

No.	Test	Test Condition	Requirement	Test Reference
1	Solderability	Temperature setup: 235 +0 / -5 °C Time setup: 10 sec.	After test terminal electrode wetting area must be greater than 95 %	IEC 68-2-58
2	Resistance to soldering heat	Temperature setup: 235 ± 5 °C Time setup: 30 sec.	DCR change ≤ ± 15 %	IEC 68-2-58
3	Thermal shock	Temperature setup: 25 °C ~ -65 °C ~ 25 °C ~ 125 °C Time setup: -65 °C (30 min) ~ 25 °C (5 min) ~ 125 °C (30 min) ~ 25 °C (5 min), 5 cycles	DCR change ≤ ± 15 % No mechanical damage	MIL-STD-202G Method 107G Test Condition B
4	Humidity unload	Heat (85 ± 0.5 °C) High humidity (85 ± 1 % RH) 240 hours	DCR change ≤ ± 15 % No mechanical damage	MIL-STD-202G Method 103B Test Condition A
5	Salt spray	Salt spray concentration: 5 ± 1 % Test liquid temperature: 35 ± 0.5 °C 96 hours	DCR change ≤ ± 15 % No mechanical damage	MIL-STD-202G Method 101E Test Condition A
6	Bending	The board shall be bent by 1 mm at a rate of 1 mm/sec.	DCR change ≤ ± 15 %	IEC 60127-4
7	Vibration	Frequency setup: 10 ~ 55 ~ 10 Hz Time setup: 1 minute/cycle (X-Y-Z, 120 cycles, 6 hours)	DCR change ≤ ± 15 % No mechanical damage	MIL-STD-202G Method 201A



WARNING Cancer and Reproductive Harm - 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.

"SinglFuse" is a trademark of Bourns, Inc.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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SF-1206SP175L-2-A9 - Time Lag Ceramic Cavity Laminate SMD Fuse

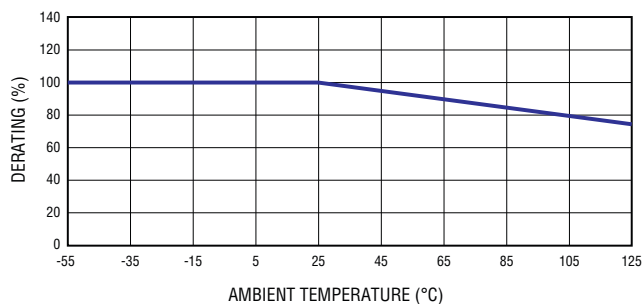
BOURNS®

Environmental Characteristics

Operating Temperature	-55 °C to + 125 °C
Storage Conditions	
Temperature	+15 °C to +30 °C
Humidity	20 % to 70 %
Shelf Life (from manufacturing date)	2 years
Moisture Sensitivity Level	1
ESD Classification ¹	Class 6

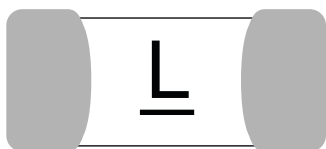
¹per AEC-Q200-2, HBM

Current Rating Thermal Derating Curve



Typical Part Marking

Represents total content. Layout may vary.



Rated Current	Part Marking
1.75 A	L

How to Order

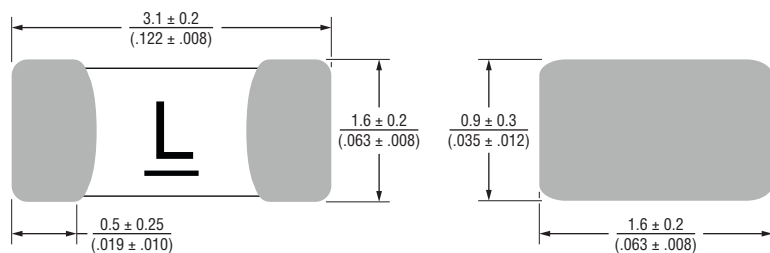
SF - 1206 SP 175 L - 2 - A9

SinglFuse™
 Product Designator
 SMD Footprint
 1206 = EIA 1206
 (3216 metric)
 Fuse Blow Type
 SP = Time Lag
 Rated Current
 175 = 1.75 A
 Structure Type
 L = Ceramic Cavity Laminate
 Packaging Type
 - 2 = Tape & Reel
 TNA (Type Number Assignment)
 Designator

Packaging

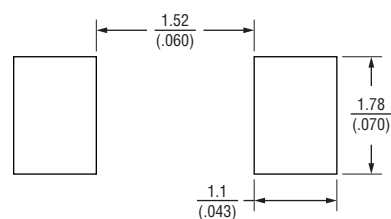
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	4,000 pieces
Packaging Code	-2

Product Dimensions



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

Recommended Pad Layout



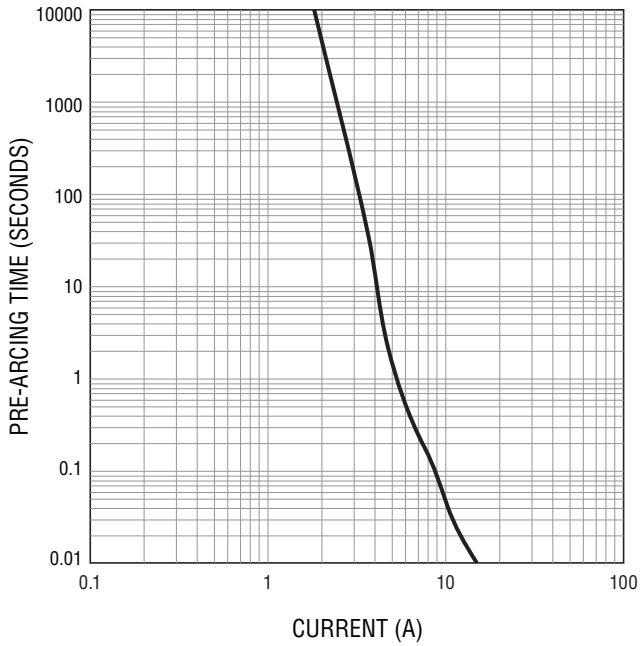
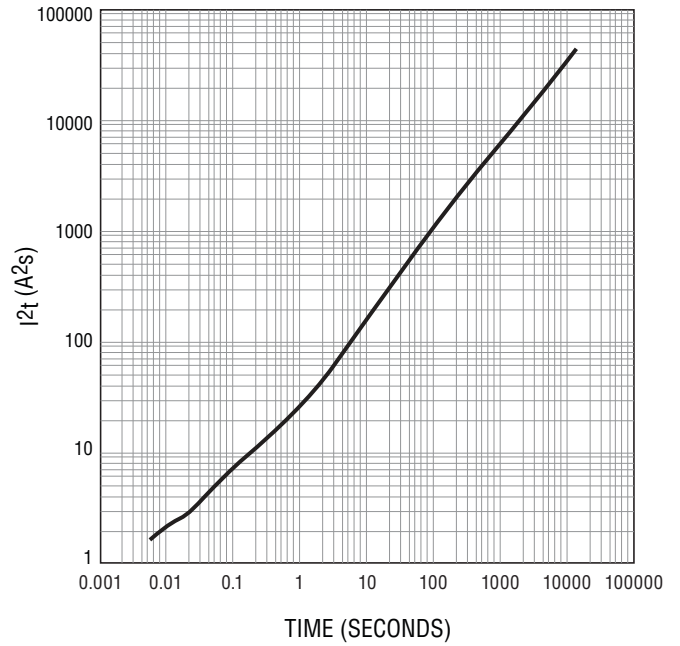
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Specifications are subject to change without notice.

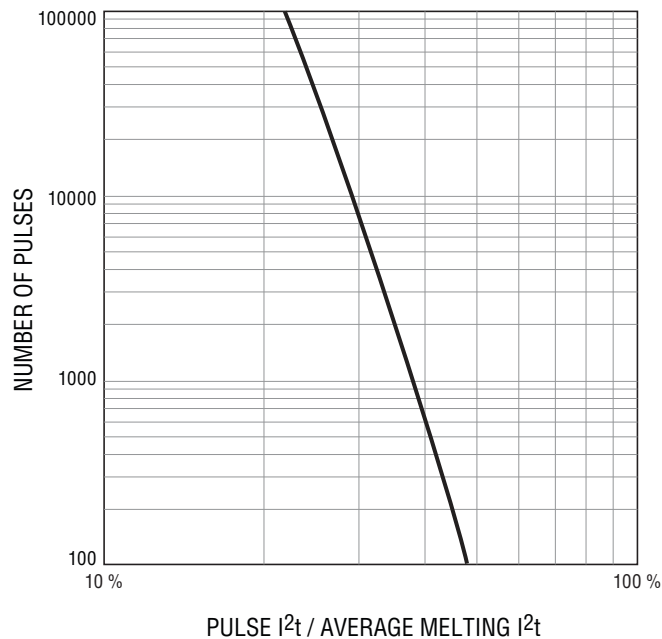
Users should verify actual device performance in their specific applications.

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Average Pre-Arcing Time vs. Current Curves

Average I^2t vs. t Curves

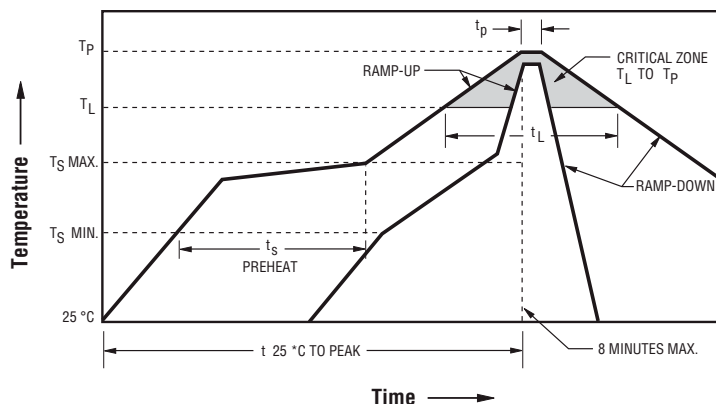
Pulse Cycle Withstand Capability



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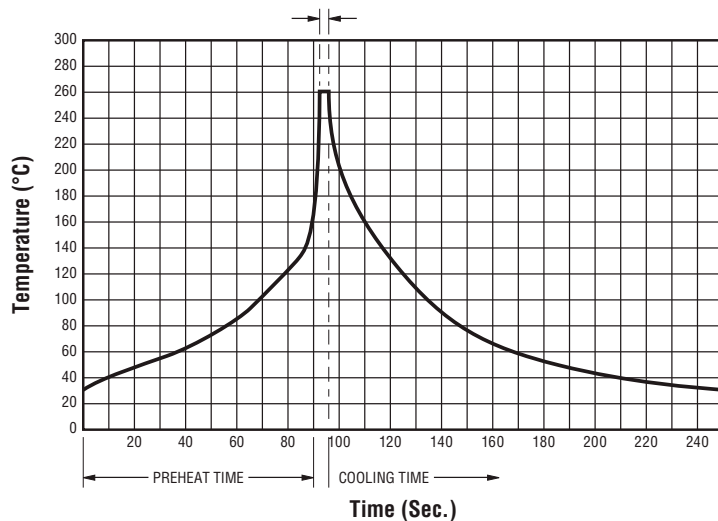
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Solder Reflow Recommendations

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 60-180 seconds
Ramp Up Rate (T_L to T_P)	3 °C / second max.
Ramp Up Rate (T_{smax} to T_L)	5 °C / second max.
Liquidous Temperature (T_L) Time (t_L) maintained above T_L	217 °C 60-150 seconds
Peak Temperature (T_P)	260 +0/-5 °C
Time within 5 °C of actual peak temperature (t_p)	10-30 seconds*
Ramp Down Rate (T_P to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature ($t_{25 \text{ °C to peak}}$)	8 minutes max.
Do not exceed	260 °C

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

Solder Wave Recommendations**Peak Temperature (Dwell Time)**

Profile Feature	Pb-Free Assembly
Preheat: Temperature Max. (T_{smax}) Time (Min. to Max.)	150 °C 60-90 seconds
Solder Pot Temperature	260 °C max.
Solder Dwell Time	2-3 seconds

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