



## 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 <sup>2</sup> t (A <sup>2</sup> s) ****	Agency Recognition
						cUL: <a href="#">E198545</a>
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 I<sup>2</sup>t 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](http://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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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

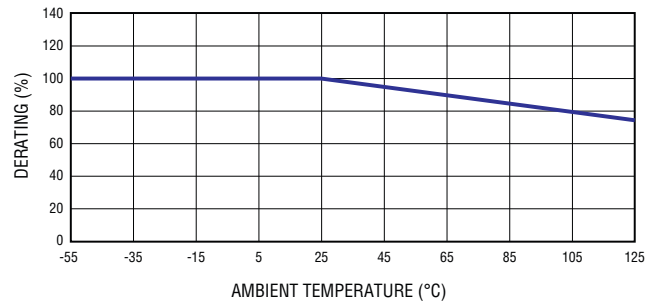


## Environmental Characteristics

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 <sup>1</sup>	Class 6

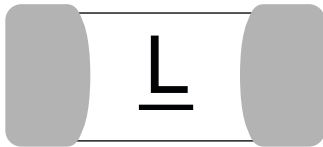
<sup>1</sup>per AEC-Q200-2, HBM

## 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

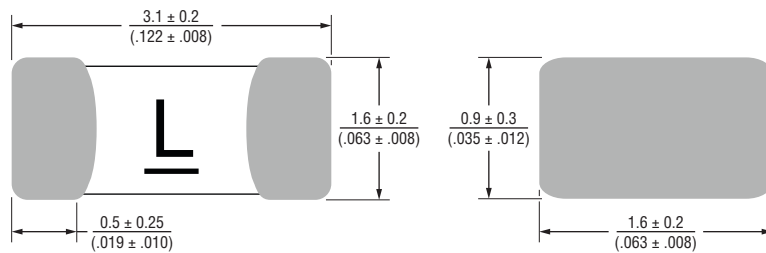
### SF - 1206 SP 175 L - 2 - A9

SingIFuse™  
 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

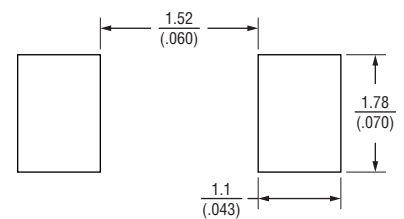
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	4,000 pieces
Packaging Code	-2

## Product Dimensions



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

## Recommended Pad Layout



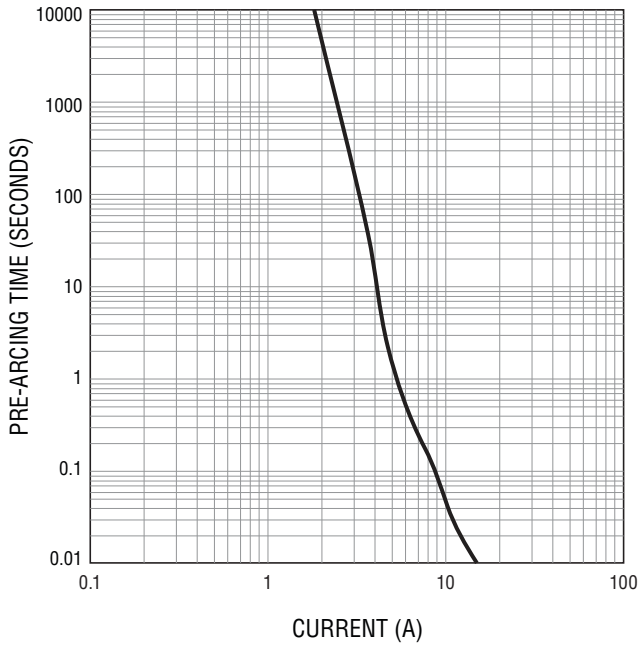
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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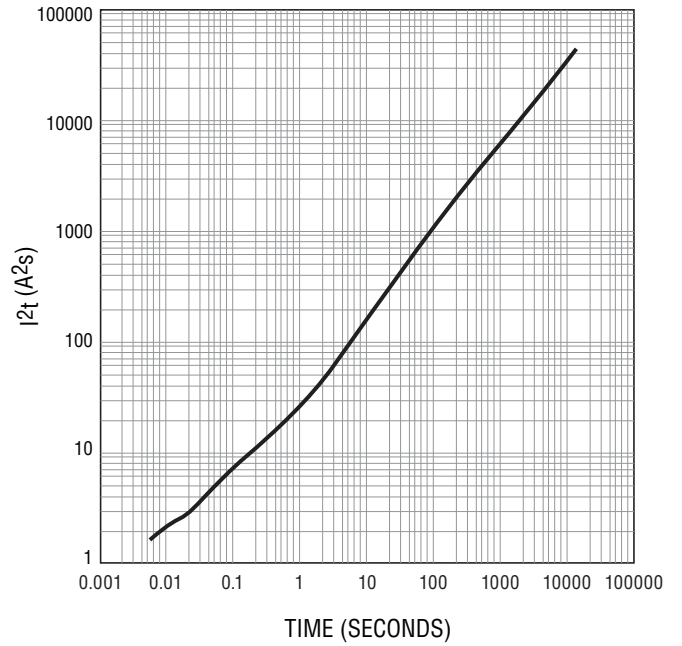
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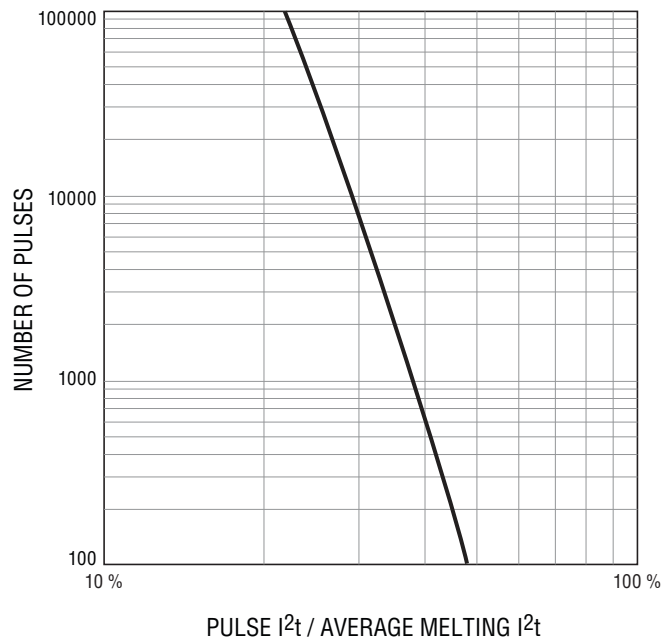
Average Pre-Arcing Time vs. Current Curves



Average  $I^2t$  vs.  $t$  Curves



Pulse Cycle Withstand Capability

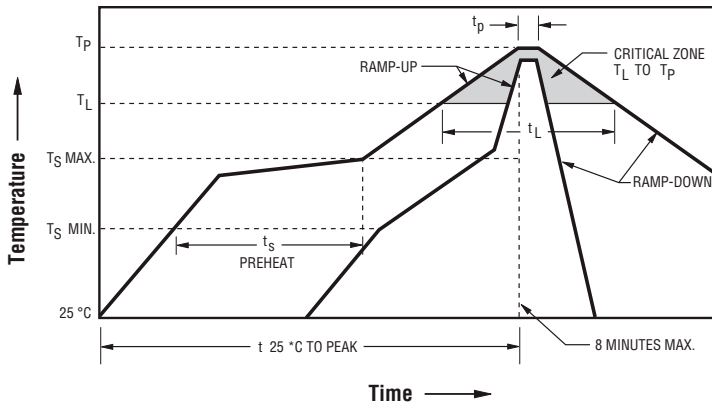


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**Solder Reflow Recommendations**

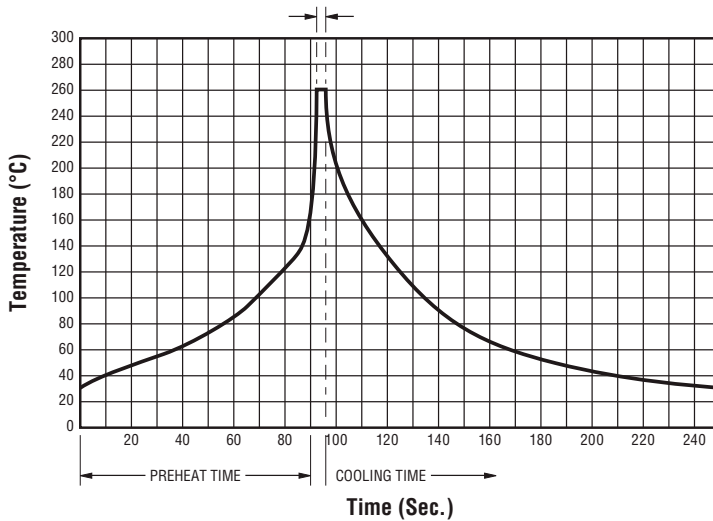


Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. ( $T_{smin}$ ) Temperature Max. ( $T_{smax}$ ) Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	150 °C 200 °C 60-180 seconds
Ramp Up Rate ( $T_L$ to $T_p$ )	3 °C / second max.
Ramp Up Rate ( $T_{smax}$ to $T_L$ )	5 °C / second max.
Liquidous 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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