



## Features

- Slow blow fusing speed
- EIA 1206 (3216 metric) footprint
- AEC-Q200 compliant\*
- UL 248-14 compliant
- RoHS compliant\*\* and halogen free\*\*\*

## SF-1206SA-W Series - Automotive Grade Slow Blow SMD Fuses

### Clearing Time Characteristics for Series

% of Current Rating	Clearing Time @ 25 °C	
	Min.	Max.
100 %	4 hours	—
250 %	—	5 seconds

### Additional Information

Click these links for more information:



### Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.*****	Rated Voltage	Interrupting Rating	Typical I <sup>2</sup> t (A <sup>2</sup> s) *****	Certifications
						cUL: <a href="#">E198545</a>
SF-1206SA150W-2	1.5	0.05	110 VDC	50 A @ 110 VDC	0.37	✓
SF-1206SA160W-2	1.6	0.043			0.52	✓
SF-1206SA200W-2	2	0.032			0.88	✓
SF-1206SA250W-2	2.5	0.028	65 VDC	50 A @ 65 VDC	1.1	✓
SF-1206SA300W-2	3	0.0224			1.9	✓
SF-1206SA315W-2	3.15	0.0203			2.2	✓
SF-1206SA350W-2	3.5	0.018			2.6	✓
SF-1206SA400W-2	4	0.0161			3.3	✓
SF-1206SA500W-2	5	0.0129	32 VDC	50 A @ 32 VDC	5.4	✓
SF-1206SA630W-2	6.3	0.01			8.9	✓
SF-1206SA700W-2	7	0.0094			10.4	✓
SF-1206SA800W-2	8	0.0084			13.5	✓
SF-1206SA1000W-2	10	0.005			11.2	✓
SF-1206SA1200W-2	12	0.0041			15	✓
SF-1206SA1500W-2	15	0.0035			24.5	✓

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

\*\*\*\*\* Melting I<sup>2</sup>t calculated at 0.001 second pre-arcing time.



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://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.

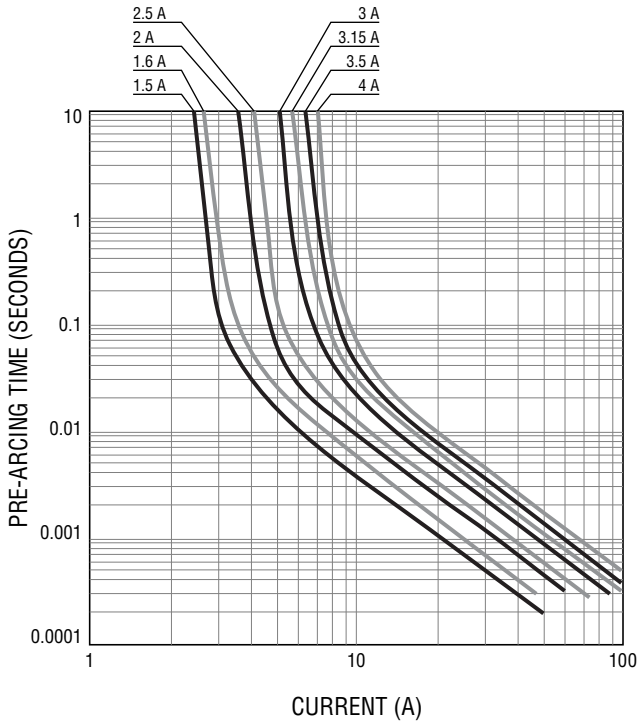
"SinglFuse" is a trademark of Bourns, Inc.

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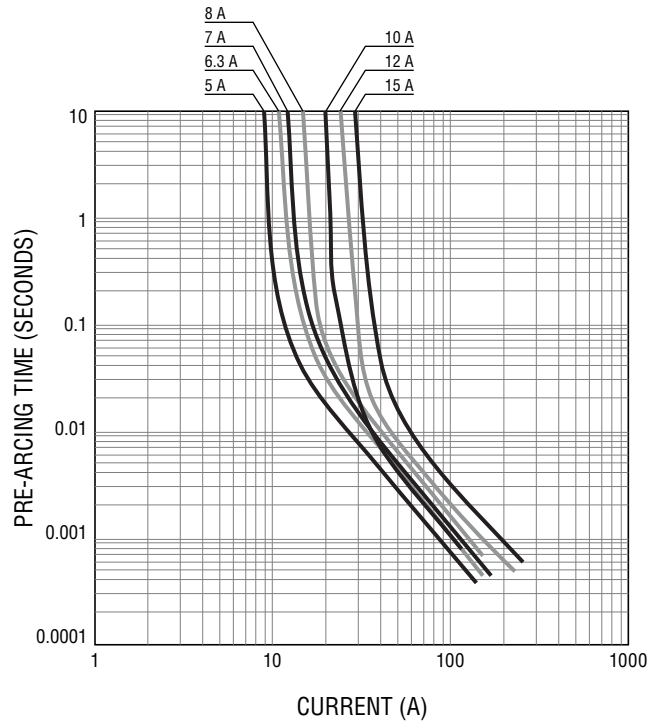
Users should verify actual device performance in their specific applications.

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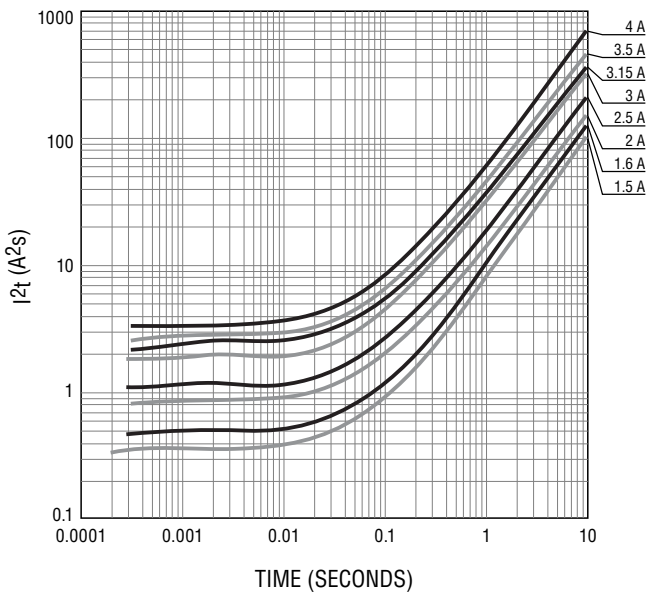
Average Pre-Arcing Time vs. Current Curves (1.5 - 4 A)



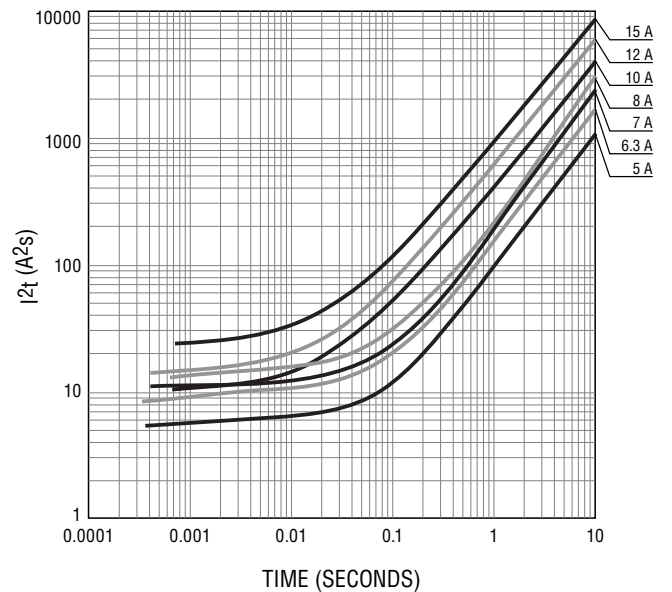
Average Pre-Arcing Time vs. Current Curves (5 - 15 A)



Average  $I^2t$  vs. t Curves (1.5 - 4 A)



Average  $I^2t$  vs. t Curves (5 - 15 A)



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# SF-1206SA-W Series – Automotive Grade Slow Blow SMD Fuses

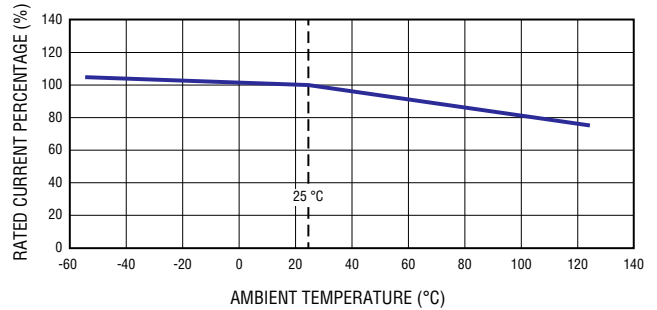


## Environmental Characteristics

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 <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. Markings in blue color.



Rated Current	Part Marking	Rated Current	Part Marking
1.5 A	G	5 A	N
1.6 A	T	6.3 A	O
2 A	I	7 A	P
2.5 A	J	8 A	R
3 A	K	10 A	Q
3.15 A	V	12 A	X
3.5 A	L	15 A	Y
4 A	M		

## How to Order

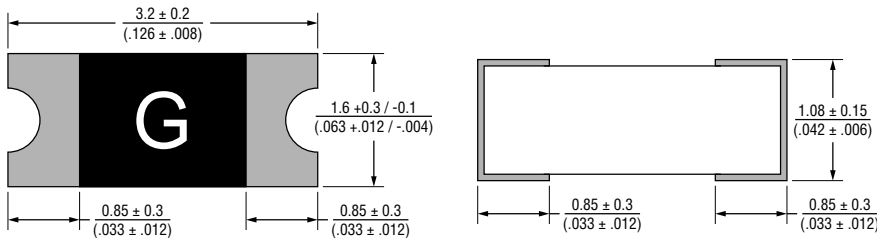
### SF - 1206 S A 150 W - 2

SinglFuse™ \_\_\_\_\_  
 Product Designator \_\_\_\_\_  
 SMD Footprint \_\_\_\_\_  
 1206 = EIA 1206  
 (3216 metric) \_\_\_\_\_  
 Fuse Blow Type \_\_\_\_\_  
 S = Slow Blow \_\_\_\_\_  
 Automotive Grade \_\_\_\_\_  
 Rated Current \_\_\_\_\_  
 150 ~ 1500 = 1.5 A ~ 15 A \_\_\_\_\_  
 Structure Type \_\_\_\_\_  
 W = Wire Core \_\_\_\_\_  
 Packaging Type \_\_\_\_\_  
 - 2 = Tape & Reel \_\_\_\_\_

## Packaging

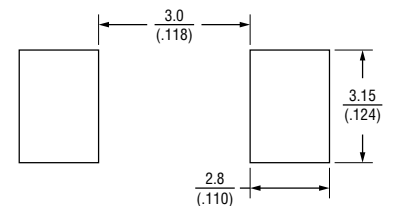
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	3,500 pieces
Packaging Code	-2

## Product Dimensions



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

## Recommended Pad Layout



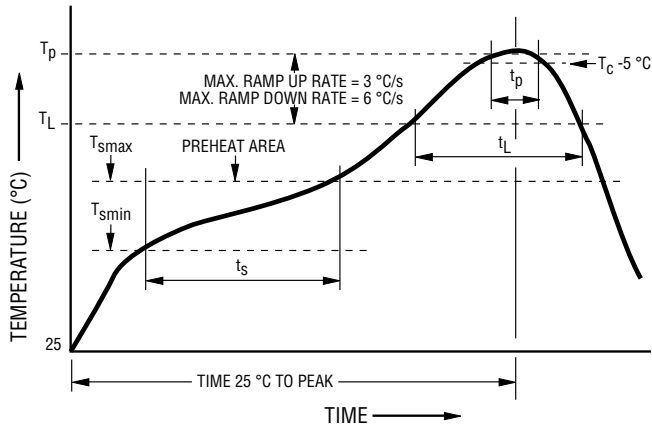
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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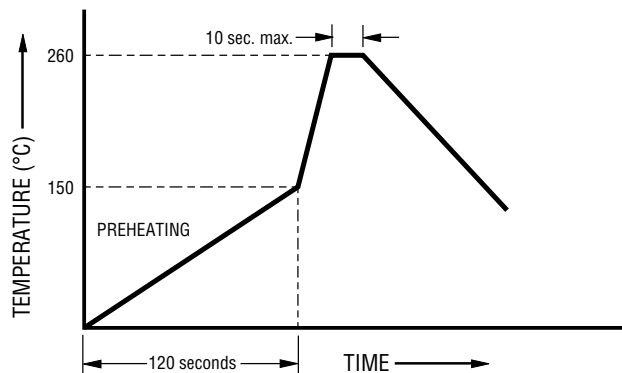
**Solder Reflow Recommendations**



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.

\* ~~Total peak~~ Total peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

**Solder Wave Recommendations**



**Reliability Tests**

Test Items	Reference Standard
Visual Inspection	MIL-STD-883 Method 2009
High Temperature Storage	MIL-STD-202 Method 108
Low Temperature Storage	IEC 60068-2-1
Temperature Cycling	JESD22 Method JA-104
Biased Humidity	MIL-STD-202 Method 103
High Temperature Operating Life	MIL-STD-202 Method 108
Physical Dimension	JESD22 Method JB-100
Mechanical Vibration	MIL-STD-202 Method 204
Mechanical Shock	MIL-STD-202 Method 213
Resistance to Soldering Heat	MIL-STD-202 Method 210
Salt Spray	MIL-STD-202 Method 101
Solderability	MIL-STD-202 Method 208
Terminal Strength	AEC-Q200-006
Board Flex	AEC-Q200-005
Electrical Characterization	Bourns Specification



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