



## Features

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

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

### Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 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)*****	Agency Recognition
						cUL: <a href="#">E198545</a>
SF-1206SA050M-2	0.50	1.080	65 VDC	50 A @ 65 VDC	0.006	✓
SF-1206SA075M-2	0.75	0.514			0.016	✓
SF-1206SA100M-2	1.00	0.420			0.048	✓
SF-1206SA150M-2	1.50	0.210			0.121	✓
SF-1206SA200M-2	2.00	0.140			0.333	✓
SF-1206SA250M-2	2.50	0.071			0.485	✓
SF-1206SA300M-2	3.00	0.051			0.606	✓
SF-1206SA350M-2	3.50	0.039			0.758	✓
SF-1206SA400M-2	4.00	0.032			0.909	✓
SF-1206SA450M-2	4.50	0.027			1.131	✓
SF-1206SA500M-2	5.00	0.023			1.515	✓

\*\*\*\* 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.

## BOURNS®

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[www.bourns.com](http://www.bourns.com)



**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.

\*\*\*Meets Bourns' internal AEC-Q200-equivalent test plan.

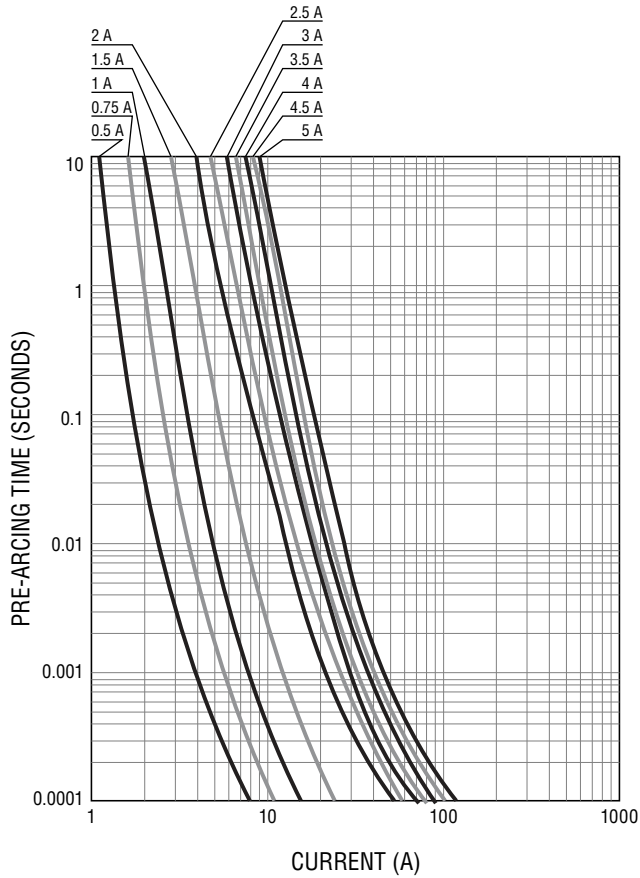
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Specifications are subject to change without notice.

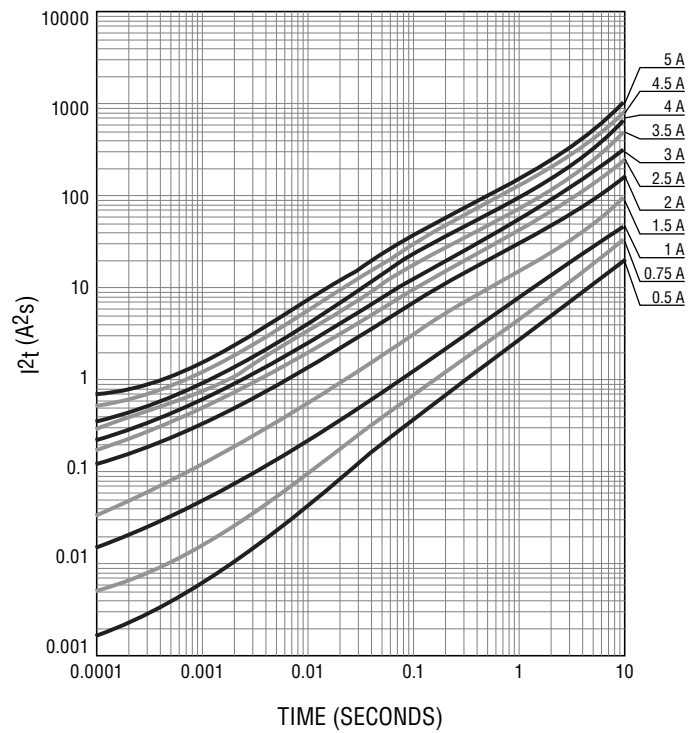
Users should verify actual device performance in their specific applications.

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Average Pre-Arcing Time vs. Current Curves



Average I²t vs. t Curves

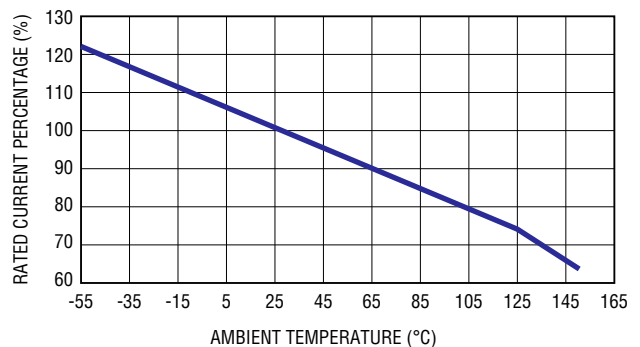


Environmental Characteristics

Operating Temperature	-55 °C to +150 °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



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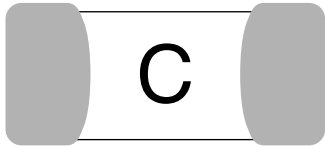
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# SF-1206SA-M Series - Automotive Grade Slow Blow SMD Fuses



## Typical Part Marking

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



Rated Current	Part Marking	Rated Current	Part Marking
0.5 A	C	3 A	K
0.75 A	D	3.5 A	L
1 A	E	4 A	M
1.5 A	G	4.5 A	T
2 A	I	5 A	N
2.5 A	J		

## How to Order

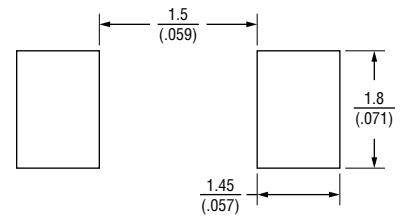
**SF - 1206 S A 050 M - 2**

SinglFuse™ \_\_\_\_\_  
 Product Designator \_\_\_\_\_  
 SMD Footprint \_\_\_\_\_  
 1206 = EIA 1206  
 (3216 metric) \_\_\_\_\_  
 Fuse Blow Type \_\_\_\_\_  
 S = Slow Blow \_\_\_\_\_  
 Automotive Grade \_\_\_\_\_  
 Rated Current \_\_\_\_\_  
 050 ~ 500 = 0.5 A ~ 5 A \_\_\_\_\_  
 Structure Type \_\_\_\_\_  
 M = Ceramic Multilayer \_\_\_\_\_  
 Packaging Type \_\_\_\_\_  
 - 2 = Tape & Reel \_\_\_\_\_

## Packaging

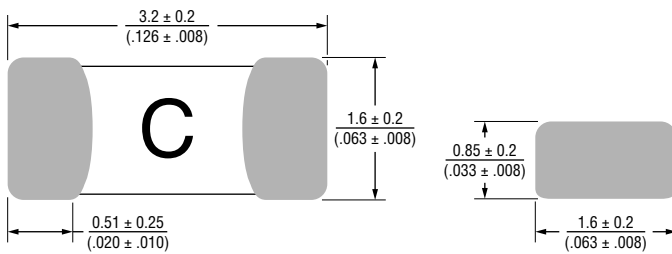
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	3,000 pieces
Packaging Code	-2

## Recommended Pad Layout



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

## Product Dimensions



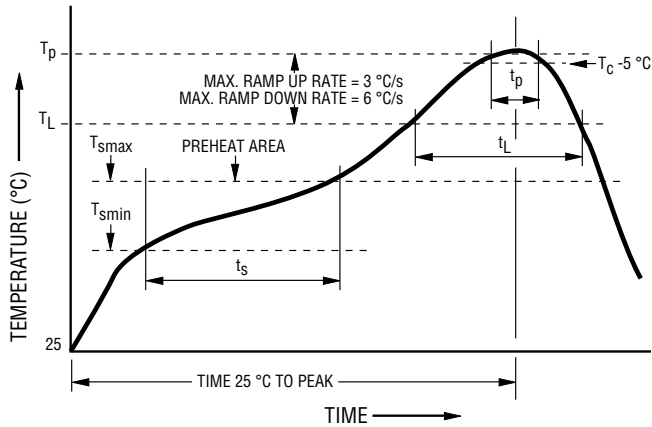
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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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.

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

**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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