Features

- Metal foil chip design for overcurrent protection
- EIA 1206 (3216 metric) footprint
- Small chip size with high current rating up to 20 A
- Agency recognition: c UL us
- RoHS* compliant and halogen free**
- AEC-Q200 compliant***

SF-1206SA-R Series – Automotive Grade SMD Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
250 %	—	5 seconds
350 %	—	1 second

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.[1]	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s)[2]	Agency Recognition cUL: E198545
SF-1206SA1000R-2	10	0.004	32 VDC	100 A @ 32 VDC	21.3	✓
SF-1206SA1200R-2	12	0.0032			29.7	✓
SF-1206SA1500R-2	15	0.0026			49.1	✓
SF-1206SA2000R-2	20	0.00215			70.9	✓

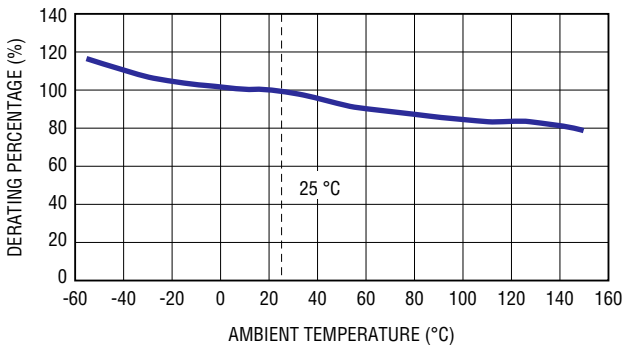
Notes:
1. Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ±25 %.
2. Melting I^2t calculated at 0.001 second pre-arcing time.

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[3]	Class 6

[3]per AEC-Q200-2, HBM

Current Rating Thermal Derating Curve



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

"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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SF-1206SA-R Series – Automotive Grade SMD Fuses

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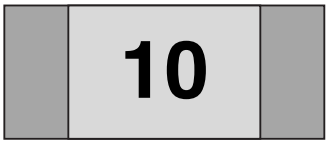
Typical Part Marking

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



Rated Current	Part Marking
10 A	10
12 A	12
15 A	15
20 A	20

How to Order

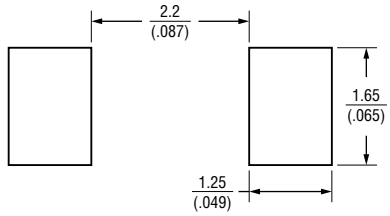
SF - 1206 S A 1000 R - 2

- SingIFuse™ Product Designator
- SMD Footprint
  1206 = EIA 1206 (3216 metric)
- Fusing Characteristic
  S = 5 sec. max. @ 250 % I_n
- Automotive Grade
- Rated Current
  1000~2000 = 10 A~20 A
- Structure Type
  R = Metal Foil
- Packaging Type
  - 2 = Tape & Reel

Packaging

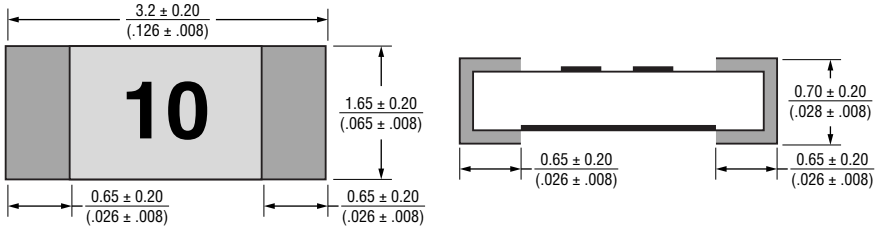
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	5,000 pieces
Packaging Code	-2

Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

Product Dimensions



DIMENSIONS: MM / (INCHES)

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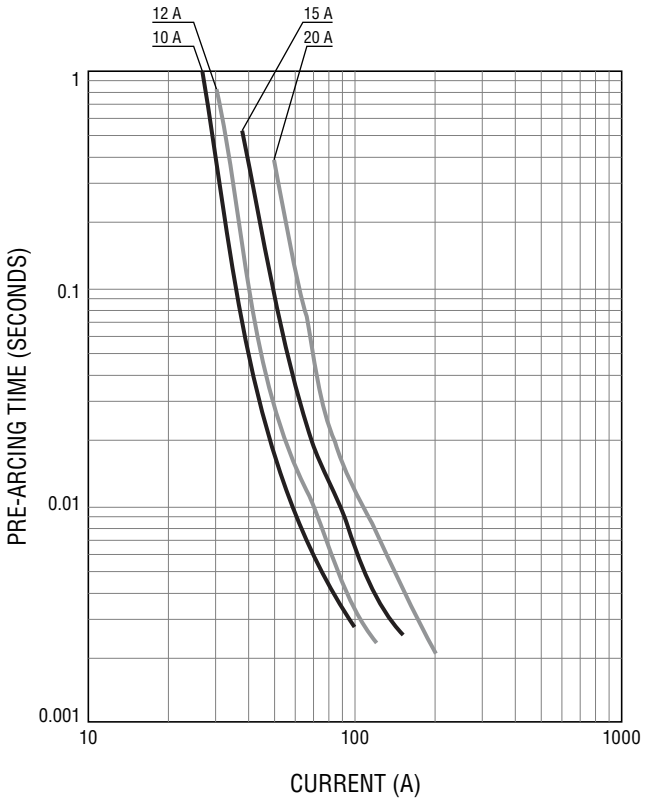
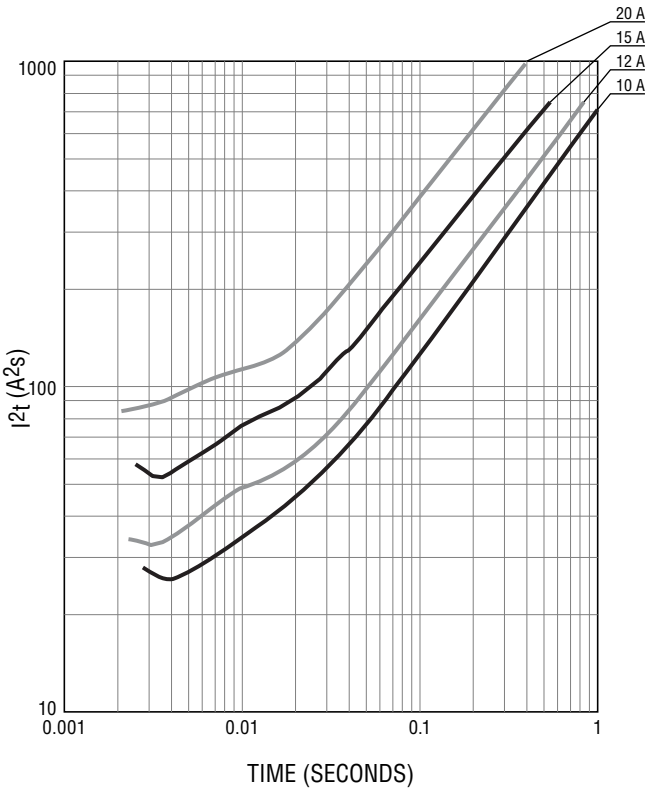
Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



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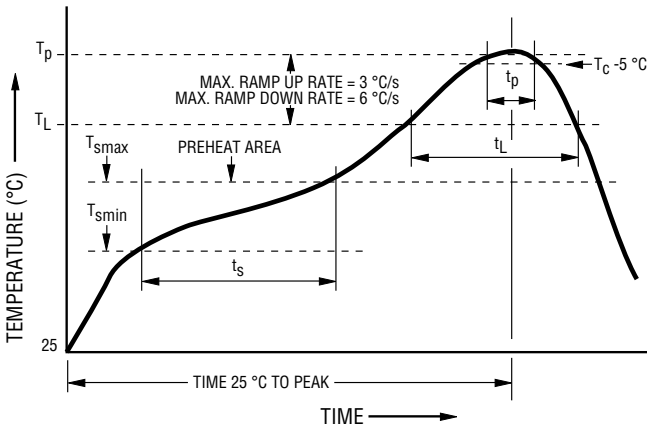
Solder Reflow Recommendations



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
Solderability	J-STD-002; Condition B
Resistance to Soldering Heat	MIL-STD-202; Method 210; Condition B
Moisture Resistance	MIL-STD-202; Method 106
Thermal Shock	MIL-STD-202; Method 107; Condition B
Mechanical Shock	MIL-STD-202; Method 213; Condition A
Vibration	MIL-STD-202; Method 201
Terminal Strength	IEC 60115-1 4.32
High Temperature Storage	MIL-STD-202; Method 108
Temperature Cycling	JESD22 Method JA-104, Test Conditions B and N
Bias Humidity	MIL-STD-202; Method 103
Operational Life	MIL-STD-202; Method 108; Condition D
Resistance to Solvent	MIL-STD-202; Method 215
Board Flex (Bending)	AEC-Q200-005
Carrying Capacity	UL 248-14
Fusing Time	UL 248-14
Interrupting Ability	UL 248-14
Temperature Rise	UL 248-14
Residual Resistance	UL 248-14
Low Temperature Storage	JESD22-A119

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