



SinglFuse™ SF-1210S-W Series Features

- Single blow fuse for overcurrent protection
- 3225 (EIA 1210) footprint
- Slow blow fuse
- UL 248-14 compliant
- RoHS compliant* and halogen free**
- Wire core SMD design
- Surface mount packaging for automated assembly

SF-1210S-W Series - Slow Blow Wire Core Surface Mount 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 ² t (A ² s)****	Certifications cUL: E198545
SF-1210S100W-2	1.00	0.079	125 VAC	100 A @ 125 VAC	0.20	✓
SF-1210S150W-2	1.50	0.050			0.50	✓
SF-1210S200W-2	2.00	0.037			0.90	✓
SF-1210S250W-2	2.50	0.033			1.20	✓
SF-1210S300W-2	3.00	0.028			1.50	✓

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

**** Melting I²t calculated at 0.001 second pre-arcing time.

Environmental Characteristics

Operating Temperature.....	-55 °C to +125 °C
Storage Conditions	
Temperature	+5 °C to +35 °C
Humidity.....	40 % to 75 %
Shelf Life.....	2 years from manufacturing date
Moisture Sensitivity Level	1
ESD Classification (HBM).....	Class 6

Typical Part Marking

Represents total content. Layout may vary.



RATED CURRENT (A)
E = 1.00 J = 2.50
G = 1.50 K = 3.00
I = 2.00

How to Order

SF - 1210 S 150 W - 2

SinglFuse™
Product Designator
SMD Footprint
1210 = 3225 (EIA 1210) size
Fuse Blow Type
S = Slow Blow
Rated Current
100 ~ 300 (1.00 A ~ 3.00 A)
Structure Type
W = Wire Core
Packaging Type
- 2 = Tape & Reel

Packaging

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

*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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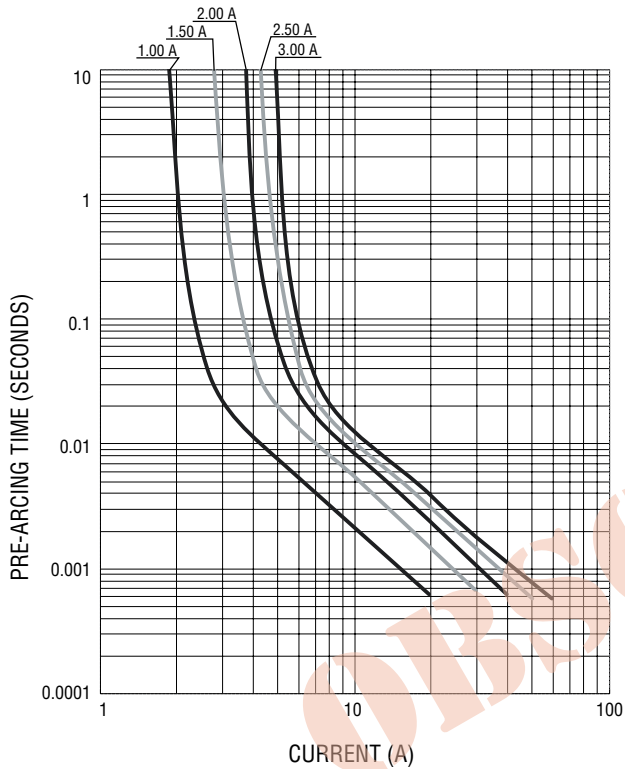
SinglFuse™ SF-1210S-W Series Applications

- White goods
- Lighting and drivers
- DC/DC converters
- Low voltage power and chargers
- Industrial equipment

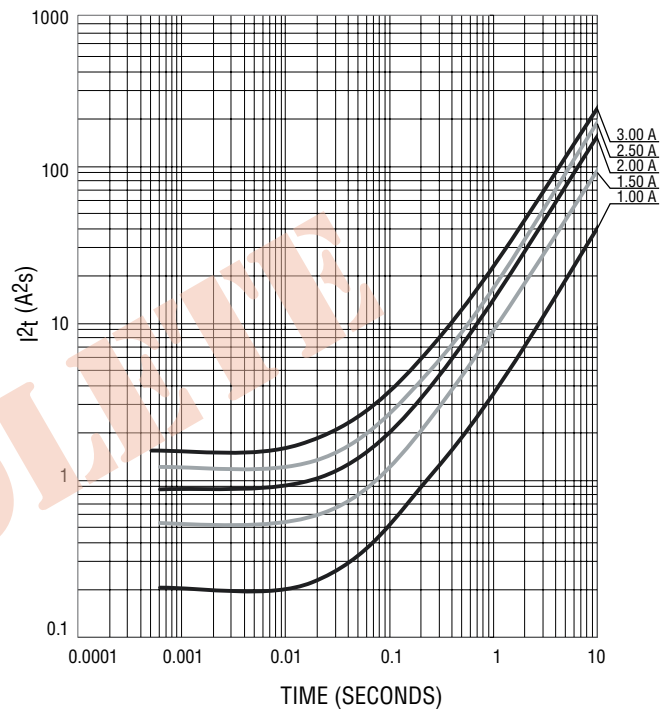
SF-1210S-W Series – Slow Blow Wire Core Surface Mount Fuses

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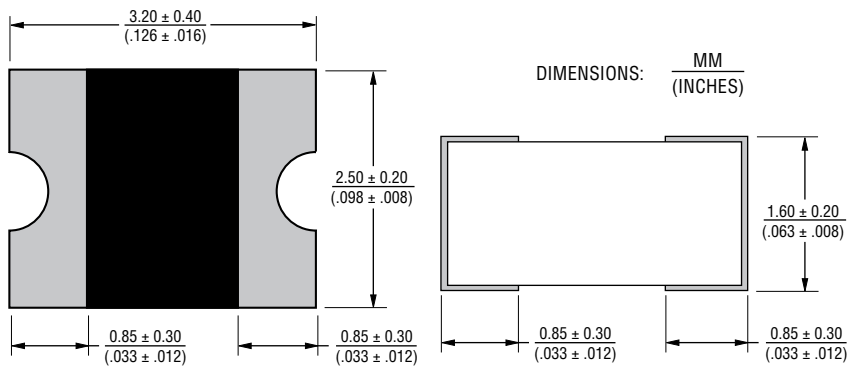
Average Pre-Arcing Time vs. Current Curves



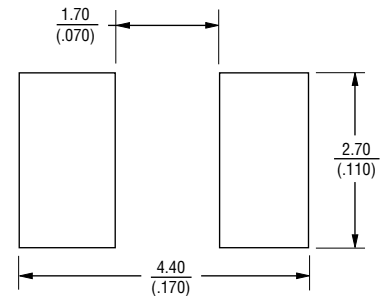
Average I^2t vs. t Curves



Product Dimensions



Recommended Pad Layout

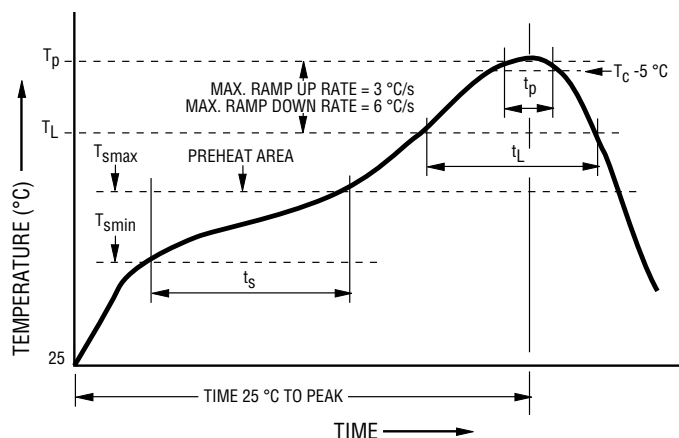


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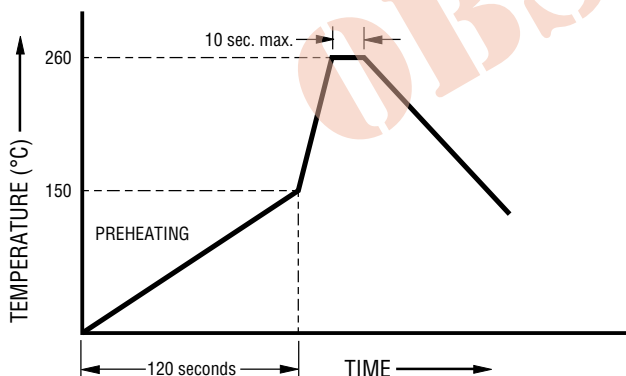
Solder Reflow Recommendations



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.

Recommended Temperature Profile for Wave Soldering



Wave soldering is suitable for 1210 size models.

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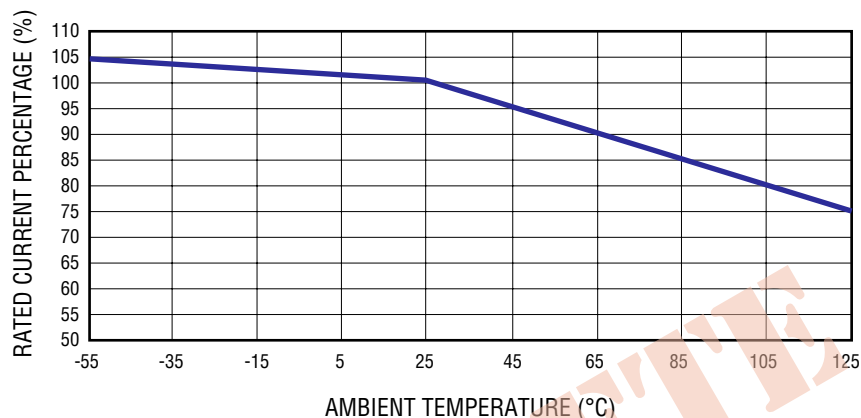
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SF-1210S-W Series – Slow Blow Wire Core Surface Mount Fuses

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Current Rating Thermal Derating Curve



Reliability Testing

No.	Test	Requirement	Test Condition	Test Reference
1	Reflow and bend	DCR change $\leq 20\%$ ($\leq 10\%$ for $\leq 1\text{ A}$) No mechanical damage	3 reflows at $245\text{ }^{\circ}\text{C}$ followed by a 2 mm bend	Refer to STP document
2	Solderability	Minimum 90 % coverage	One dip at $245\text{ }^{\circ}\text{C}$ for 5 seconds	MIL-STD-202 Method 208
3	Soldering heat resistance	DCR change $\leq 20\%$ ($\leq 10\%$ for $\leq 1\text{ A}$) New solder coverage $\leq 75\%$	One dip at $260\text{ }^{\circ}\text{C}$ for 10 seconds	MIL-STD-202 Method 210
4	Moisture resistance	DCR change $\leq \pm 15\%$ No excessive corrosion	10 cycles	MIL-STD-202 Method 106
5	Salt spray	DCR change $\leq \pm 10\%$ No excessive corrosion	48 hour exposure, 5 % salt solution	MIL-STD-202 Method 101
6	Mechanical vibration	DCR change $\leq \pm 10\%$ No mechanical damage	0.4 inch D.A. or 30 G between 5-3000 Hz	MIL-STD-202 Method 204
7	Mechanical shock	DCR change $\leq \pm 10\%$ No mechanical damage	1500 G, 0.5 ms, half-sine shocks	MIL-STD-202 Method 213
8	Thermal Shock	DCR change $\leq \pm 10\%$ No mechanical damage	100 cycles between $-65\text{ }^{\circ}\text{C}$ and $+125\text{ }^{\circ}\text{C}$	MIL-STD-202 Method 107
9	Life	No electrical "opens" during testing Voltage drop change shall be less than $\pm 20\%$ of initial value	80 % rated current (75 % for $< 1\text{ A}$ fuses) for 2000 hours at ambient temperature $+25\text{ }^{\circ}\text{C}$	Refer to STP document

REV. D 10/22

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