

## Features

- Fast acting fusing speed
- EIA 2410 (6125 metric) footprint
- AEC-Q200 compliant\*
- UL 248-14 listed
- RoHS compliant\*\* and halogen free\*\*\*

## SF-2410FA-W Series - Automotive Grade Fast Acting SMD Fuses

### Clearing Time Characteristics for Series

% of Current Rating	Clearing Time @ 25 °C	
	Min.	Max.
100 %	4 hours	—
200 %	0.01 second	20 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) *****	Certifications
						cUL: <a href="#">E198545</a>
SF-2410FA1200W-2	12	0.0053	65 VDC	50 A @ 65 VDC 300 A @ 32 VDC	39.3	✓
SF-2410FA1500W-2	15	0.0037			102.5	✓
SF-2410FA2000W-2	20	0.0029		100 A @ 65 VDC 300 A @ 32 VDC	126.2	✓

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

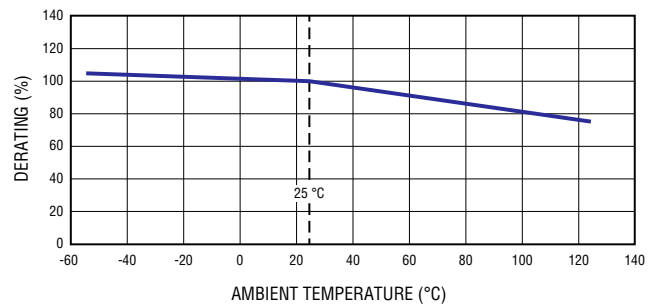
\*\*\*\*\* Melting I<sup>2</sup>t calculated at 0.001 second pre-arcing time.

### 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



**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.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

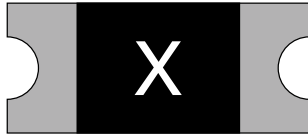
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# SF-2410FA-W Series – Automotive Grade Fast Acting SMD Fuses



## Typical Part Marking

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



Rated Current	Part Marking
12 A	X
15 A	Y
20 A	Z

## How to Order

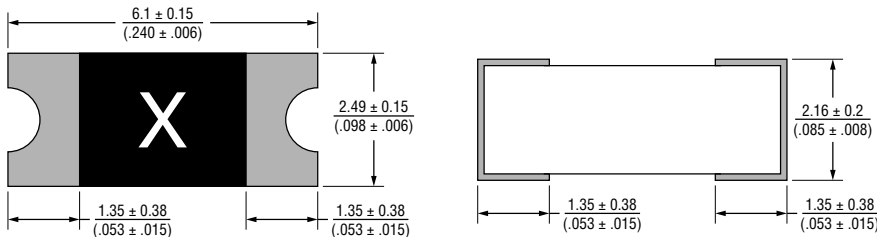
**SF - 2410 F A 1200 W - 2**

SinglFuse™ \_\_\_\_\_  
 Product Designator \_\_\_\_\_  
 SMD Footprint \_\_\_\_\_  
 2410 = EIA 2410  
 (6125 metric) \_\_\_\_\_  
 Fuse Blow Type \_\_\_\_\_  
 F = Fast Acting \_\_\_\_\_  
 Automotive Grade \_\_\_\_\_  
 Rated Current \_\_\_\_\_  
 1200 ~ 2000 = 12 A ~ 20 A \_\_\_\_\_  
 Structure Type \_\_\_\_\_  
 W = Wire Core \_\_\_\_\_  
 Packaging Type \_\_\_\_\_  
 - 2 = Tape & Reel \_\_\_\_\_

## Packaging

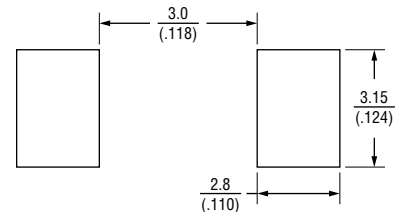
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	2,000 pieces
Packaging Code	-2

## Product Dimensions



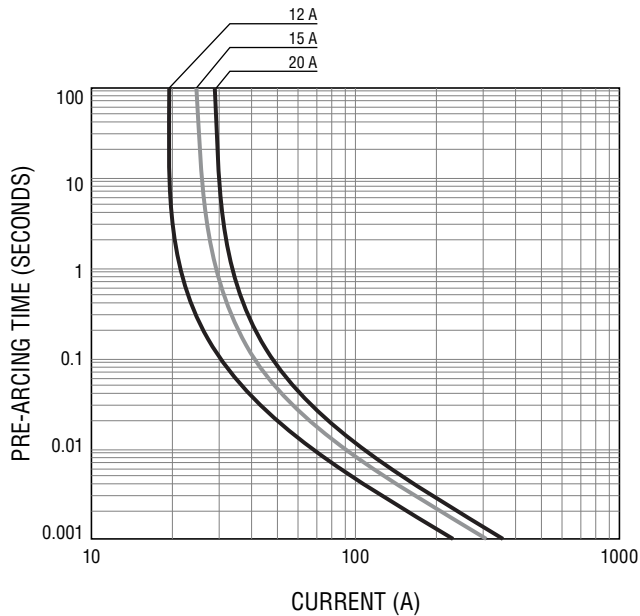
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Recommended Pad Layout

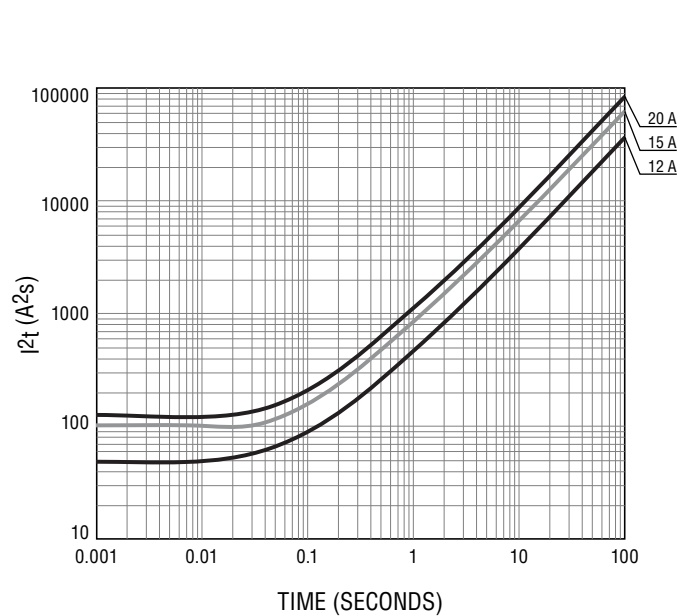


DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Average Pre-Arcing Time vs. Current Curves



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

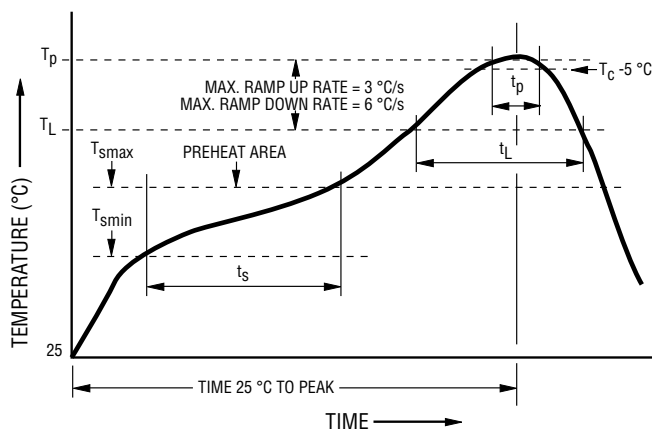


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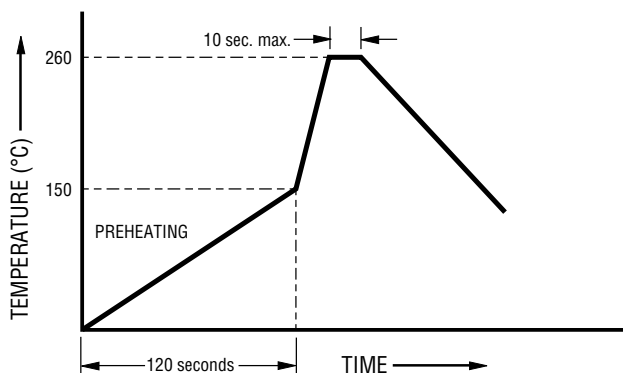
**Solder Reflow Recommendations**



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.

**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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