

## SinglFuse™ SF-2410SP-W Series Features

- Single blow fuse for overcurrent protection
- 6125 (EIA 2410) footprint
- Time lag fuse
- UL 248-14 compliant
- RoHS compliant\* and halogen free\*\*
- Wire core SMD design
- Surface mount packaging for automated assembly
- High AC power one-time protection fuse

## SF-2410SP-W Series - Time Lag Wire Core Surface Mount Fuses

### Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
125 %	1 hour	—
200 %	—	120 seconds
1000 %	0.001 seconds	0.01 seconds

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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>	VDE: <a href="#">40049803</a>
SF-2410SP050W-2	0.50	0.206	250 VAC	100 A @ 250 VAC	0.11	✓	✓
SF-2410SP063W-2	0.63	0.148			0.20	✓	✓
SF-2410SP080W-2	0.80	0.109			0.35	✓	✓
SF-2410SP100W-2	1.00	0.084			0.62	✓	✓
SF-2410SP125W-2	1.25	0.065			1.00	✓	✓
SF-2410SP160W-2	1.60	0.049			1.80	✓	✓
SF-2410SP200W-2	2.00	0.038			3.00	✓	✓

\*\*\* 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.

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

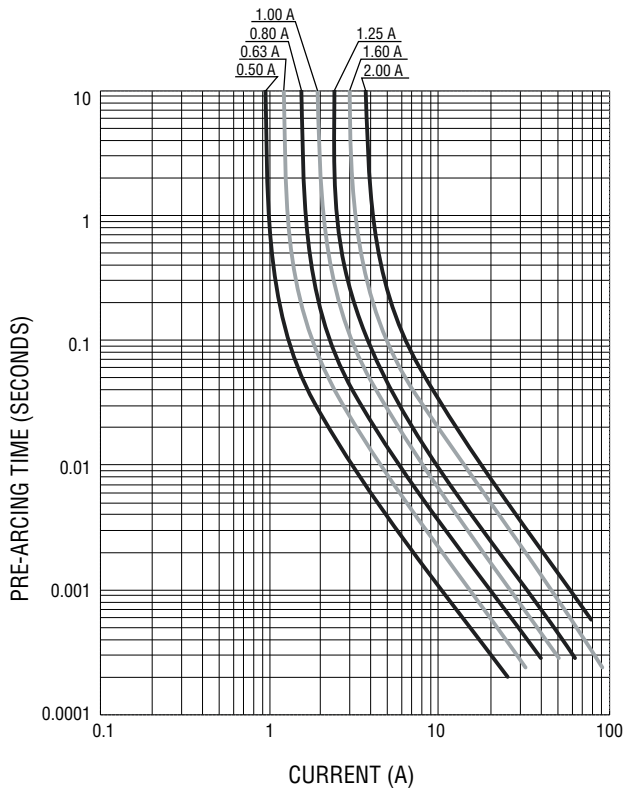
## SinglFuse™ SF-2410SP-W Series Applications

- White goods
- Lighting ballasts
- LED drivers
- Medical equipment (excluding critical life support)
- DC/DC converters
- Power chargers
- Power adapters
- Industrial equipment

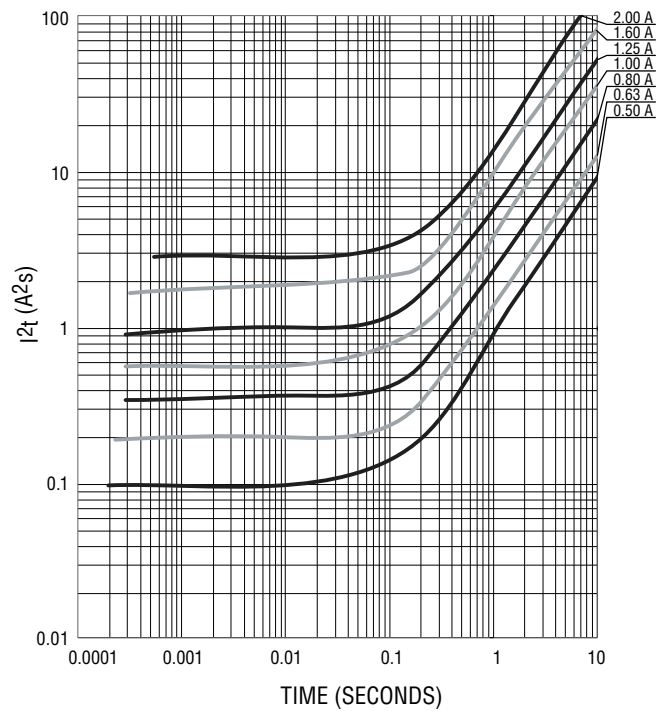
### SF-2410SP-W Series – Time Lag Wire Core Surface Mount Fuses

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**Average Pre-Arcing Time vs. Current Curves**



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



### 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

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## SF-2410SP-W Series – Time Lag Wire Core Surface Mount Fuses

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### Typical Part Marking

Represents total content. Layout may vary.



RATED CURRENT (A)  
 C = 0.50    F = 1.25  
 S = 0.63    T = 1.60  
 H = 0.80    I = 2.00  
 E = 1.00

### How to Order

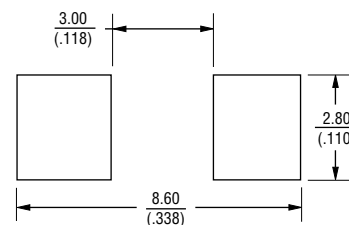
**SF - 2410 SP 100 W - 2**

SinglFuse™  
 Product Designator  
 SMD Footprint  
 2410 = 6125 (EIA 2410) size  
 Fuse Blow Type  
 SP = Time Lag  
 Rated Current  
 050 ~ 200 (0.5 A ~ 2.0 A)  
 Structure Type  
 W = Wire Core  
 Packaging Type  
 - 2 = Tape & Reel

### Packaging

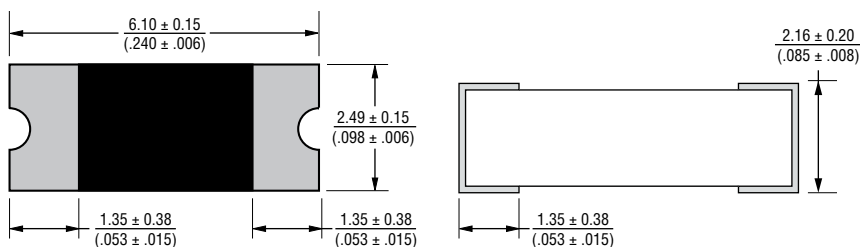
Reel Dimension	7-inch Tape and Reel
Specification	EIA 481-2
Quantity	2,000 pieces
Packaging Code	-2

### Recommended Pad Layout



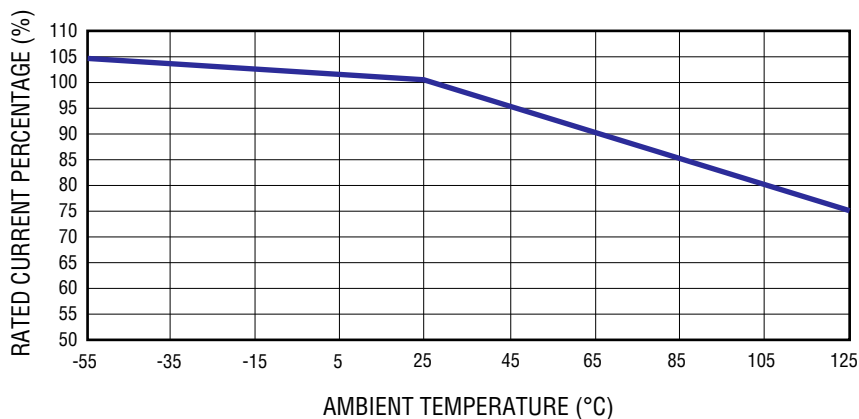
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

### Product Dimensions



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

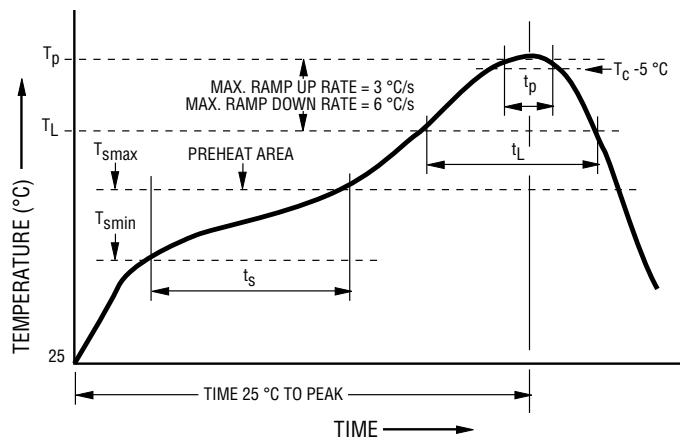
### Current Rating Thermal Derating Curve



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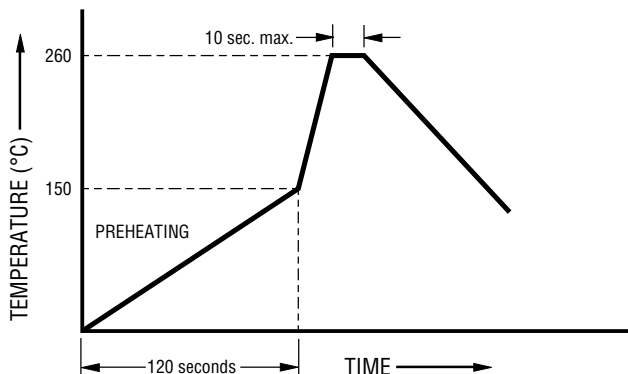
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**Solder Reflow Recommendations**

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 2410 size models.

**SF-2410SP-W Series – Time Lag Wire Core Surface Mount Fuses****BOURNS®****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 $\geq 75\%$	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. C 03/21

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