**SingiFuse™ 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

<table>
<thead>
<tr>
<th>% of Current Rating</th>
<th>Clearing Time at 25 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
</tr>
<tr>
<td>100 %</td>
<td>4 hours</td>
</tr>
<tr>
<td>250 %</td>
<td>—</td>
</tr>
</tbody>
</table>

#### Electrical Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Current (A)</th>
<th>Resistance (Ω) Typ.***</th>
<th>Rated Voltage</th>
<th>Interrupting Rating</th>
<th>Typical Pt (A)s****</th>
<th>Certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF-1210S100W-2</td>
<td>1.00</td>
<td>0.079</td>
<td>125 VAC</td>
<td>100 A @ 125 VAC</td>
<td>0.20</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1210S150W-2</td>
<td>1.50</td>
<td>0.050</td>
<td></td>
<td></td>
<td>0.50</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1210S200W-2</td>
<td>2.00</td>
<td>0.037</td>
<td></td>
<td></td>
<td>0.90</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1210S250W-2</td>
<td>2.50</td>
<td>0.033</td>
<td></td>
<td></td>
<td>1.20</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1210S300W-2</td>
<td>3.00</td>
<td>0.028</td>
<td></td>
<td></td>
<td>1.50</td>
<td>✓</td>
</tr>
</tbody>
</table>

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

**** Melting $I^2t$ 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

#### How to Order

**SingiFuse™**
- Product Designator: SF - 1210 S 150 W - 2
- 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

<table>
<thead>
<tr>
<th>Reel Dimension</th>
<th>7-inch Tape and Reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification</td>
<td>EIA 481-2</td>
</tr>
<tr>
<td>Quantity</td>
<td>2,500 pieces</td>
</tr>
<tr>
<td>Packaging Code</td>
<td>-2</td>
</tr>
</tbody>
</table>

---

** 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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**WARNING Cancer and Reproductive Harm**

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)
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

Average Pre-Arcing Time vs. Current Curves

Average I²t vs. t Curves

Product Dimensions

Recommended Pad Layout

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Solder Reflow Recommendations

**Profile Feature** | **Pb-Free Assembly**
--- | ---
Preheat / Soak: | 150 °C
Temperature Min. (T_{smin}) | 200 °C
Temperature Max. (T_{smax}) | 60–120 seconds
Time (t_s) from (T_{smin} to T_{smax}) | 60–150 seconds
Ramp Up Rate (T_L to T_p) | 3 °C / second max.
Liquidous Temperature (T_L) | 217 °C
Time (t_L) maintained above T_L | 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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Current Rating Thermal Derating Curve

Reliability Testing

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