SinglFuse™ SF-1206HHA-R Series Features

- Metal foil chip design for overcurrent protection
- EIA 1206 (3216 metric) footprint
- Small chip size with high rating current up to 30 A
- AEC-Q200 (Grade 1) compliant*
- UL 248 compliant
- RoHS compliant** and halogen free***

SF-1206HHA-R Series - Automotive Grade SMD Fuses

<table>
<thead>
<tr>
<th>% of Current Rating</th>
<th>Clearing Time at 25 °C</th>
<th>Agency Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>100 %</td>
<td>4 hours</td>
<td>—</td>
</tr>
<tr>
<td>250 % (8~20 A)</td>
<td>—</td>
<td>5 seconds</td>
</tr>
<tr>
<td>350 % (8~30 A)</td>
<td>—</td>
<td>1 second</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 I²t (A²s) *****</th>
<th>Agency Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF-1206HHA800R-2</td>
<td>8</td>
<td>0.0045</td>
<td></td>
<td></td>
<td>18.4</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA1000R-2</td>
<td>10</td>
<td>0.0040</td>
<td></td>
<td></td>
<td>29.1</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA1200R-2</td>
<td>12</td>
<td>0.0032</td>
<td>50 VDC</td>
<td>200 A @ 50 VDC</td>
<td>105.6</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA1500R-2</td>
<td>15</td>
<td>0.0026</td>
<td>100 A @ 50 VDC</td>
<td></td>
<td>77.0</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA2000R-2</td>
<td>20</td>
<td>0.00215</td>
<td>200 A @ 50 VAC</td>
<td></td>
<td>171.7</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA2500R-2</td>
<td>25</td>
<td>0.0013</td>
<td></td>
<td></td>
<td>280.2</td>
<td>✓</td>
</tr>
<tr>
<td>SF-1206HHA3000R-2</td>
<td>30</td>
<td>0.0010</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ± 25 %.
***** Melting I²t calculated at 10 times rated current.

Environmental Characteristics

Operating Temperature: -55 °C to +125 °C
Storage Conditions
- Temperature: +5 °C to +35 °C
- Humidity: 40 % to 75 %
- Moisture Sensitivity Level: Class 1
- ESD Classification (HBM): Class 6

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* Meets Bourns' internal AEC-Q200 equivalent test plan.
*** 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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Average Pre-Arcing Time vs. Current Curves

Average I^2t vs. t Curves

Product Dimensions

Recommended Pad Layout
**SF-1206HHA-R Series – Automotive Grade SMD Fuses**

**Current Rating Thermal Derating Curve**

<table>
<thead>
<tr>
<th>AMBIENT TEMPERATURE (°C)</th>
<th>0</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATED CURRENT PERCENTAGE (%)</td>
<td>140</td>
<td>120</td>
<td>100</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
</tbody>
</table>

**Packaging**

- **Reel Dimension**: 7-inch Tape and Reel
- **Specification**: EIA 481-2
- **Quantity**: 3,000 pieces
- **Packaging Code**: -2

**Typical Part Marking**

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

<table>
<thead>
<tr>
<th>Rated Current</th>
<th>Part Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 A</td>
<td>8</td>
</tr>
<tr>
<td>10 A</td>
<td>10</td>
</tr>
<tr>
<td>12 A</td>
<td>12</td>
</tr>
<tr>
<td>15 A</td>
<td>15</td>
</tr>
<tr>
<td>20 A</td>
<td>20</td>
</tr>
<tr>
<td>25 A</td>
<td>25</td>
</tr>
<tr>
<td>30 A</td>
<td>30</td>
</tr>
</tbody>
</table>

**Solder Reflow Recommendations**

- **Temperature Min.** ($T_{\text{min}}$): 150 °C
- **Temperature Max.** ($T_{\text{max}}$): 200 °C
- **Time ($t_L$) from ($T_{\text{min}}$ to $T_{\text{max}}$)**: 60~120 seconds
- **Ramp Up Rate** ($T_L$ to $T_P$): 3 °C/s 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/s 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.

**How to Order**

- **SingFuse™**
- **Product Designator**: SF - 1206 HH A 1000 R - 2
- **SMD Footprint**: 1206 = EIA 1206 (3216 metric) size
- **Fusing Characteristic**: HH = 1 sec. max. @ 350 % $I_n$
- **Automotive Grade**: Rated Current 800 ~ 3000 = 8 A ~ 30 A
- **Rated Current**
  - 8 A
  - 10 A
  - 12 A
  - 15 A
  - 20 A
  - 25 A
  - 30 A

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