



**THE DATASHEET OF
SF-1206S200M-2**





SingIFuse™ SF-1206S-M Series Features

- Single blow fuse for overcurrent protection
- 3216 (EIA 1206) miniature footprint
- Slow blow fuse (Fusing time ≤ 5 seconds at 250 % rated current)
- UL 248-14 compliant
- Surface mount packaging for automated assembly
- Multilayer SMD design
- RoHS compliant* and halogen free**

SF-1206S-M Series - Slow Blow Multilayer Surface Mount Fuses

Clearing Time Characteristics for Series

| % of Current Rating | Clearing Time at 25 °C | |
|---------------------|------------------------|--------------|
| | Min. | Max. |
| 100 % | 4 hours | — |
| 250 % | — | 5 seconds |
| 400 % | — | 0.05 seconds |

Additional Information

Click these links for more information:



Electrical Characteristics

| Model | Rated Current (A) | Resistance (Ω) Typ.*** | Rated Voltage | Interrupting Rating (Ω) | Typical I^2t (A ² s)**** | Certifications |
|----------------|-------------------|---------------------------------|---------------|----------------------------------|---------------------------------------|------------------------------|
| | | | | | | cUL: E198545 |
| SF-1206S050M-2 | 0.50 | 0.726 | 63 VDC | 50 A @ 63 VDC | 0.0020 | ✓ |
| SF-1206S075M-2 | 0.75 | 0.510 | | | 0.0051 | ✓ |
| SF-1206S100M-2 | 1.00 | 0.2189 | | | 0.0112 | ✓ |
| SF-1206S150M-2 | 1.50 | 0.1194 | | | 0.024 | ✓ |
| SF-1206S175M-2 | 1.75 | 0.0995 | | | 0.0455 | ✓ |
| SF-1206S200M-2 | 2.00 | 0.0498 | | | 0.0758 | ✓ |
| SF-1206S250M-2 | 2.50 | 0.0348 | 32 VDC | 50 A @ 32 VDC | 0.111 | ✓ |
| SF-1206S300M-2 | 3.00 | 0.0308 | | | 0.21 | ✓ |
| SF-1206S400M-2 | 4.00 | 0.0219 | | | 0.354 | ✓ |
| SF-1206S500M-2 | 5.00 | 0.0149 | | | 0.61 | ✓ |
| SF-1206S600M-2 | 6.00 | 0.0129 | | 45 A @ 32 VDC | 1.01 | ✓ |
| SF-1206S700M-2 | 7.00 | 0.0109 | | | 1.62 | ✓ |
| SF-1206S800M-2 | 8.00 | 0.0080 | | | 2.32 | ✓ |

*** Resistance value measured with ≤ 10 % rated current at 25 °C ambient. Tolerance ± 30 %.

****Melting I^2t calculated at 0.001 second pre-arcing time.



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**WARNING Cancer
and Reproductive Harm**
www.P65Warnings.ca.gov

*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.

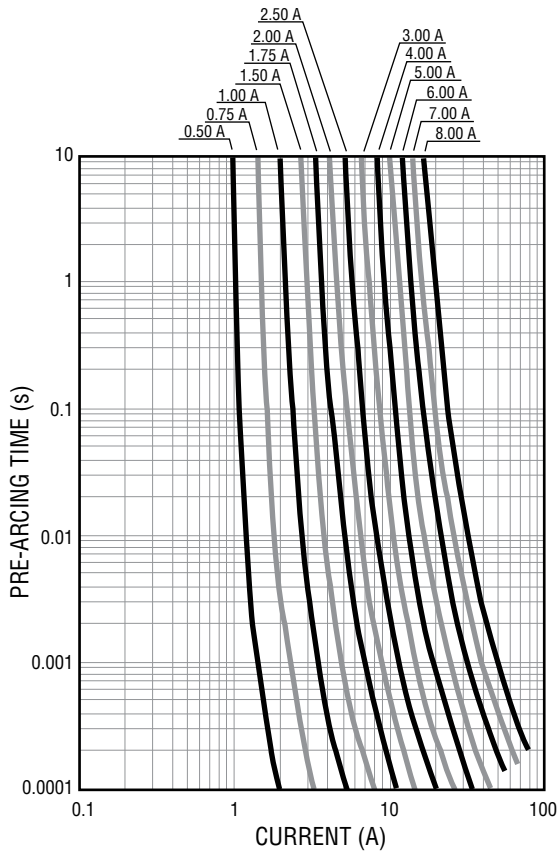
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SinglFuse™ SF-1206S-M Series Applications

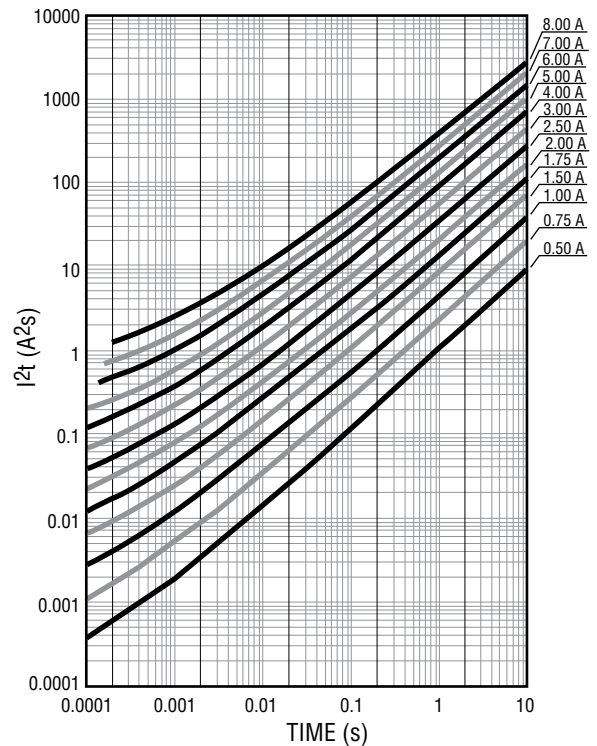
- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- MP3 players
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set-top boxes
- Industrial controllers
- Battery Management Systems (BMS)
- LED lighting
- Power tools

SF-1206S-M Series – Slow Blow Multilayer Surface Mount Fuses BOURNS®

Average Pre-Arcing Time vs. Current Curves



Average I²t 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 |

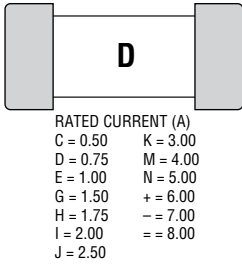
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SF-1206S-M Series – Slow Blow Multilayer Surface Mount Fuses



Typical Part Marking

Represents total content. Layout may vary.



How to Order

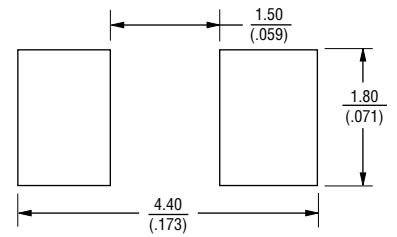
SF - 1206 S 100 M - 2

SingIFuse™
 Product Designator
 SMD Footprint
 1206 = 3216 (EIA 1206) size
 Fuse Blow Type
 S = Slow blow
 Rated Current
 050 ~ 800 (0.50 A - 8.00 A)
 Structure Type
 M = Multilayer
 Packaging Type
 - 2 = Tape & Reel

Packaging

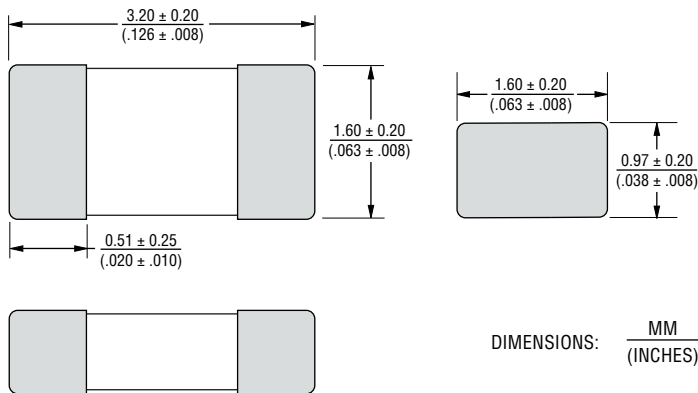
| | |
|----------------|----------------------|
| Reel Dimension | 7-inch Tape and Reel |
| Specification | EIA 481-2 |
| Quantity | 3,000 pieces |
| Packaging Code | -2 |

Recommended Pad Layout

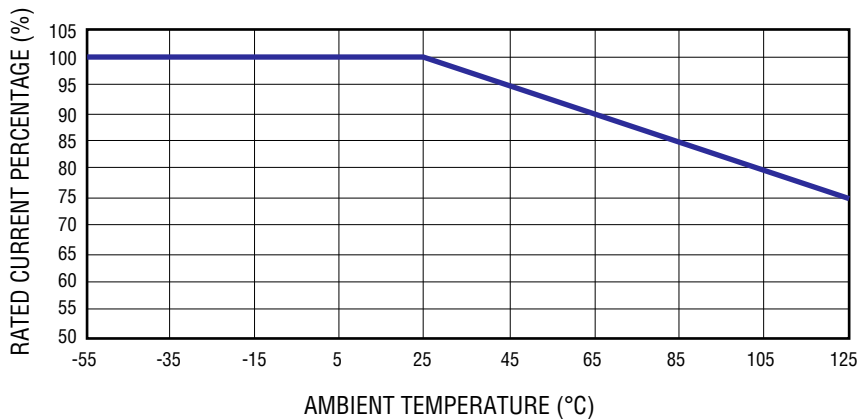


DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Product Dimensions



Current Rating Thermal Derating Curve

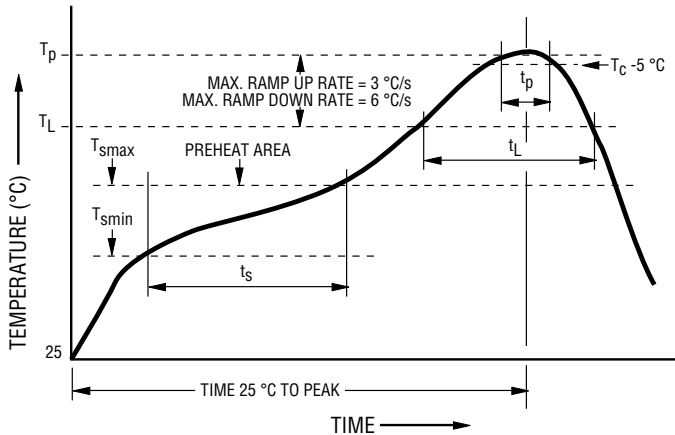


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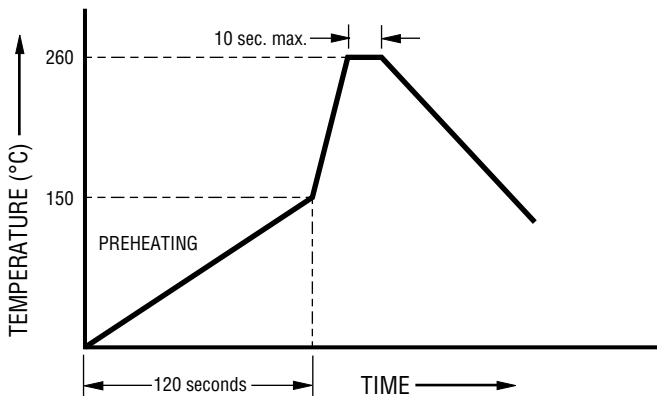
Solder Reflow Recommendations



| 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 1206 size models.

Reliability Testing

| No. | Test | Requirement | Test Condition | Test Reference |
|-----|---------------------------|---|--|---------------------------|
| 1 | Soldering heat resistance | DCR change $\leq \pm 10\%$ No mechanical damage | One dip at 260 °C for 60 seconds | MIL-STD-202 Method 210 |
| 2 | Solderability | Minimum 95 % coverage | One dip at 245 °C for 5 seconds | MIL-STD-202 Method 208 |
| 3 | Thermal shock | DCR change $\leq \pm 10\%$ No mechanical damage | 100 cycles between -65 °C and +125 °C | MIL-STD-202 Method 107 |
| 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 | Life | No electrical “opens” during testing. Voltage drop change shall be less than $\pm 20\%$ of initial value. | 80 % rated current (75 % for ≤ 1 A fuses) for 2000 hours at ambient temperature +20 °C ~ +30 °C | Refer to STP document |

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