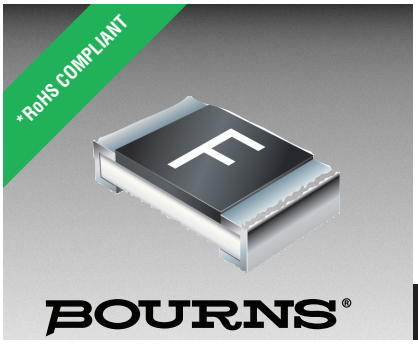


## SingIFuse™ SF-1206S Series Features

- Single blow fuse for overcurrent protection
- 3216 (EIA 1206) miniature footprint
- Slow blow fuse
- UL listed
- RoHS compliant* and halogen free**
- Thin film chip fuse
- Surface mount packaging for automated assembly

# SF-1206S Series - Slow Blow Surface Mount Fuses

### Electrical Characteristics

| Model | Rated Current (Amps) | Fusing Time | Resistance (mΩ) Typ.*** | Rated Voltage | Breaking Capacity | Typical $I^2t$ ($A^2s$) **** |
|---|---|---|---|---|---|---|
| SF-1206S050 | 0.50 | Open within 5 sec. at 250 % rated current | 596 | DC 63 V | DC 63 V 50 A | 0.030 |
| SF-1206S080 | 0.80 | | 165 | | | 0.068 |
| SF-1206S100 | 1.00 | | 132 | | | 0.098 |
| SF-1206S125 | 1.25 | | 90 | | | 0.155 |
| SF-1206S150 | 1.50 | | 79 | | | 0.236 |
| SF-1206S200 | 2.00 | | 41 | | | 0.339 |
| SF-1206S250 | 2.50 | | 33 | DC 32 V | DC 32 V 50 A | 0.605 |
| SF-1206S300 | 3.00 | | 23 | | | 0.933 |
| SF-1206S400 | 4.00 | | 15.5 | | | 1.537 |
| SF-1206S500 | 5.00 | | 13 | | | 2.533 |
| SF-1206S700 | 7.00 | | 7 | | | 5.684 |

*** Resistance value was measured with less than 10 % of rated current. Resistance tolerance is ±25 %.
****Typical $I^2t$ value is measured at 10x rated current.

### Reliability Testing

| Parameter | Requirement | Test Method |
|---|---|---|
| Carrying Capacity | No fusing | Rated current, 4 hours |
| Fusing Time | Within 5 seconds | 250 % of its rated current |
| Interrupting Ability | No mechanical damages | After the fuse is interrupted, rated voltage applied for 30 seconds again |
| Bending Test | No mechanical damages | Distance between holding points: 90 mm, Bending: 3 mm,1time, 30 seconds |
| Resistance to Solder Heat | ±20 % | 260 °C ±5 °C,10 ±1 second |
| Solderability | 95 % coverage minimum | 235 °C ±5 °C, 2 ±0.5 second<br>245 °C ±5 °C, 2 ±0.5 second (lead free) |
| Temperature Rise | <75 °C | 100 % of its rated current, measure of surface temperature |
| Resistance to Dry Heat | ±20 % | 105 °C ±5 °C,1000 hours |
| Resistance to Solvent | No evident damage on protective coating and marking | 23 °C ±5 °C of isopropyl alcohol, 90 seconds |
| Residual Resistance | 10k ohms or more | Measure DC resistance after fusing |
| Thermal Shock | ΔR < 10 % | -20 °C / +25 °C /+125 °C /+25 °C, 10 cycles |

### Environmental Characteristics

Operating Temperature ..... -20 °C to +105 °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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* RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
** Bourns is using the definition that appears to be the prevalent definition used as the industry standard at this time. The Bourns definition of "halogen-free" is: Bromine (Br) content: ≤ 900 ppm; Chlorine (Cl) content: ≤ 900 ppm; Total Br + Cl content: ≤1500 ppm.

"SingIFuse" is a trademark of Bourns, Inc.
Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

## SinglFuse™ SF-1206S Series Applications

- Portable memory
- LCD monitors
- Disk drives
- PDAs
- Digital cameras
- DVDs
- Cell phones
- Rechargeable battery packs
- Battery chargers
- Set top boxes
- Industrial controllers

# SF-1206S Series - Slow Blow Surface Mount Fuses

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### Typical Part Marking

Represents total content. Layout may vary.

RATING CURRENT (A)

| | |
|---|---|
| F = 0.50 | T = 2.50 |
| K = 0.80 | 3 = 3.00 |
| L = 1.00 | W = 4.00 |
| M = 1.25 | Y = 5.00 |
| P = 1.50 | Z = 7.00 |
| S = 2.00 | |

### How to Order

**SF - 1206 S 050 - 2**

SinglFuse™ Product Designator

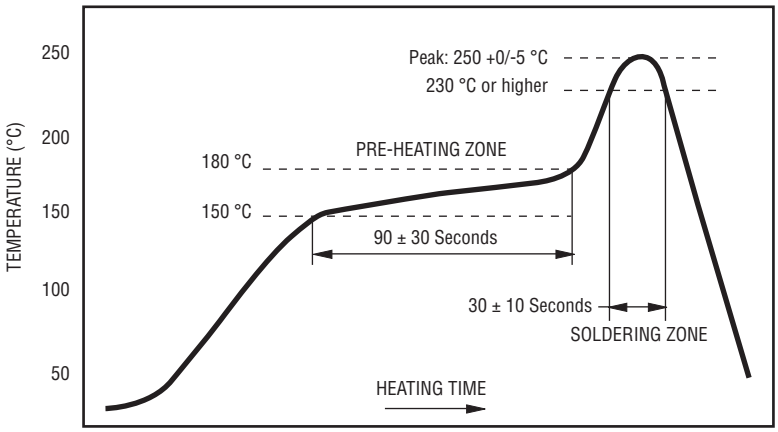
SMD Footprint
3216 (EIA 1206) size

Fuse Blow Type
F = Fast Acting FP = Fast Acting Precision
S = Slow Blow SP = Time Lag

Rated Current
050-700 (500 mA - 7.00 A)

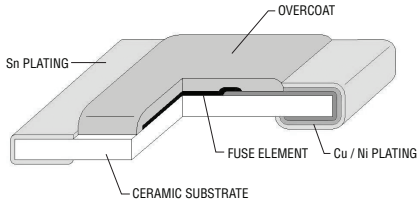
Packaging Type
- 2 = Tape & Reel (5,000 pcs./reel)

### Solder Reflow Recommendations

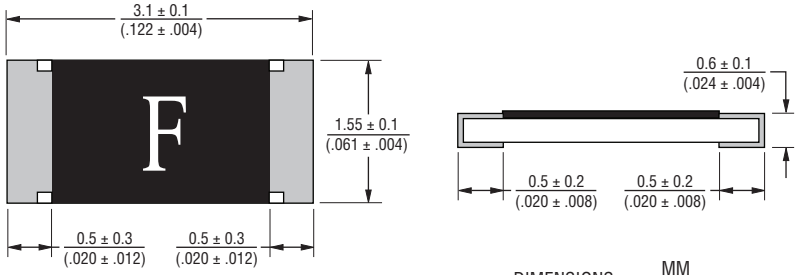



PEAK: 250 +0/-5 °C, 5 seconds
PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds
SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

### Construction & Material Content



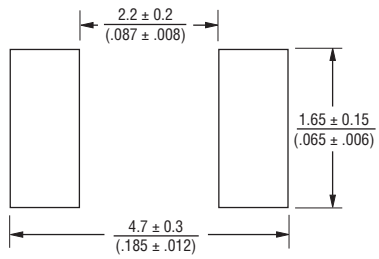

### Product Dimensions




DIMENSIONS: MM / (INCHES)

PACKAGING: 5,000 pcs./reel

### Recommended Pad Layout

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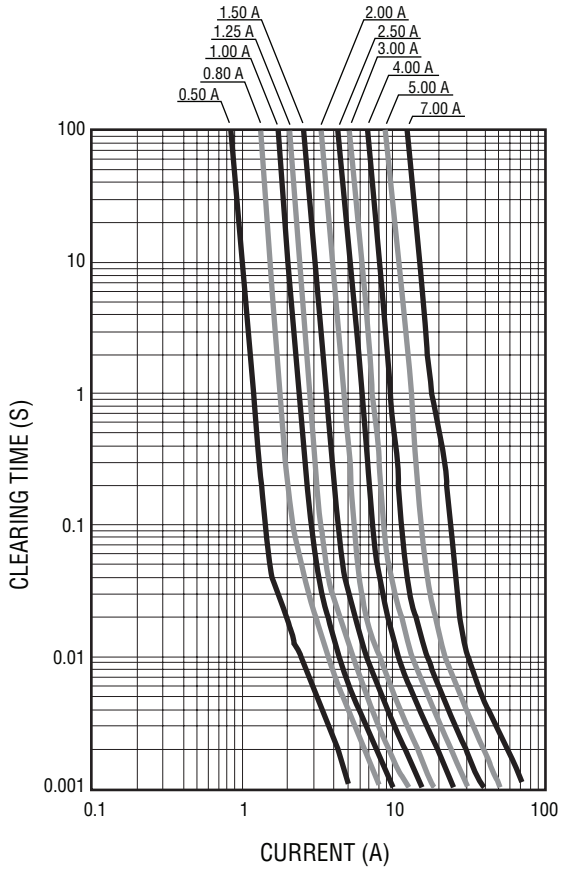
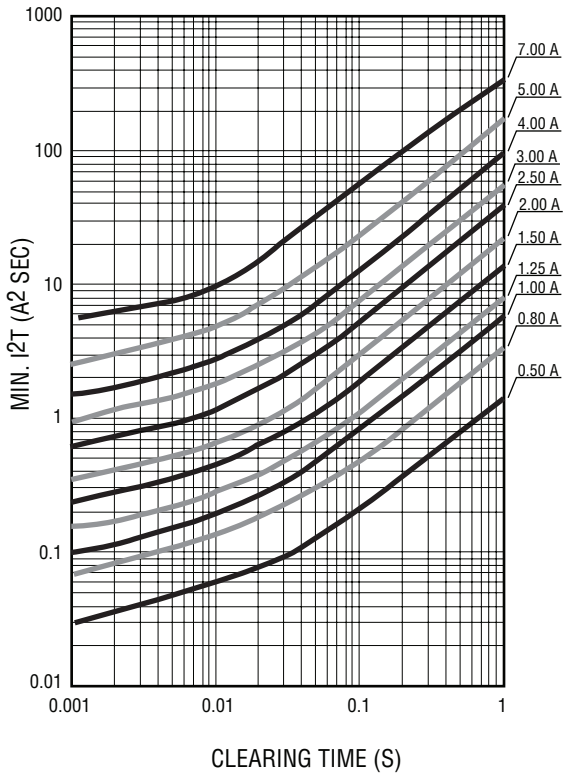
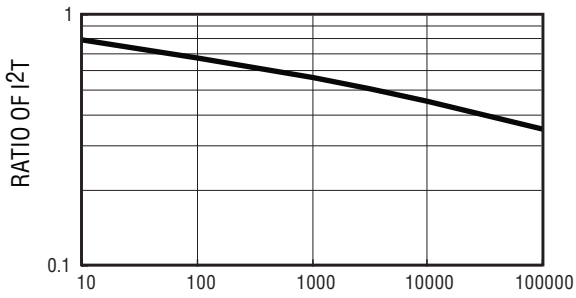
## Average Time Current Curves



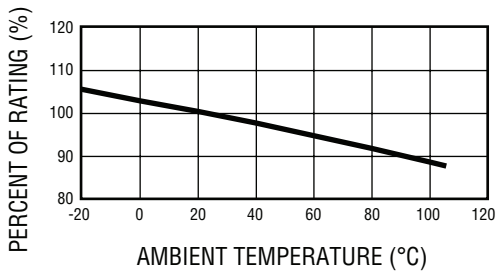

## Minimum I²T V Clear Time Curves




## I2T Derating Curve by Repeater Rush Current




## Thermal Derating Curve




REV. F 07/17

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# SF-1206S Series Tape and Reel Specifications

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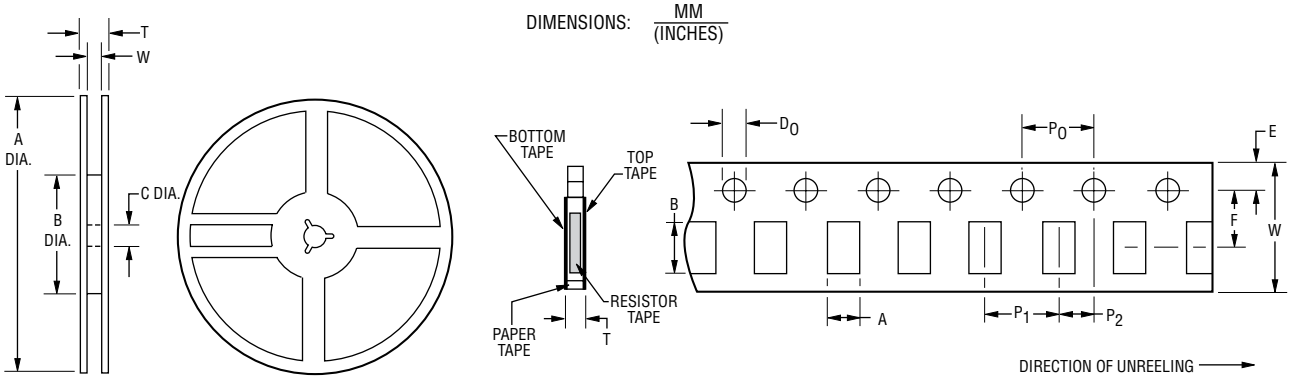
| Tape Dimensions | SF-1206S Series per EIA 481-2 |
|---|---|
| W | 8.0 ± 0.2 (.315 ± .008) |
| $P_0$ | 4.0 ± 0.1 (.157 ± .004) |
| $P_1$ | 4.0 ± 0.1 (.157 ± .004) |
| $P_2$ | 2.0 ± 0.05 (.079 ± .002) |
| A | 2.0 ± 0.15 (.079 ± .006) |
| B | 3.6 ± 0.2 (.142 ± .008) |
| F | 3.5 ± 0.05 (.138 ± .002) |
| E | 1.75 ± 0.1 (.069 ± .004) |
| $D_0$ | 1.5 + 0.1/-0 (.059 + .004/-0) |
| T | 0.84 ± 0.1 (.033 ± .004) |
| **Reel Dimensions** | |
| A | 180 +0/-3.0 (7.087 +0/-.118) |
| B Min. | 60.0 (2.362) |
| C | 13.0 ± 1.0 (.512 ± .039) |
| W | 9.0 ± 1.0 (.354 ± .039) |
| T | 11.4 ± 2.0 (.449 ± .079) |

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