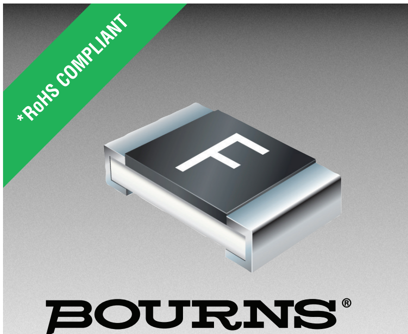



## SinglFuse™ SF-1206SP Series Features

- Time lag thin film chip fuse for overcurrent protection
- 3216 (EIA 1206) miniature footprint
- Surface mount packaging for automated assembly
- UL listed (UL 248-14)
- RoHS compliant* and halogen free**

# SF-1206SP Series - Time Lag Surface Mount Fuses

### Electrical Characteristics

| Model | Rated Current (Amps) | Fusing Time | Resistance (mΩ) Typ.*** | Rated Voltage | Breaking Capacity | Typical $I^2t$ ($A^2s$) **** |
|---|---|---|---|---|---|---|
| SF-1206SP050 | 0.50 | Open within 1~120 sec. at 200 % rated current | 738.5 | DC 63 V | DC 63 V 50 A | 0.027 |
| SF-1206SP080 | 0.80 | | 215 | | | 0.072 |
| SF-1206SP100 | 1.00 | | 163.5 | | | 0.134 |
| SF-1206SP125 | 1.25 | | 100 | | | 0.233 |
| SF-1206SP150 | 1.50 | | 68.5 | | | 0.305 |
| SF-1206SP200 | 2.00 | | 48.5 | | | 0.509 |
| SF-1206SP250 | 2.50 | | 35 | DC 32 V | DC 32 V 50 A | 0.777 |
| SF-1206SP300 | 3.00 | | 27 | | | 1.285 |
| SF-1206SP400 | 4.00 | | 14 | | | 2.374 |
| SF-1206SP500 | 5.00 | | 11 | | | 5.510 |
| SF-1206SP700 | 7.00 | | 7.5 | | | 10.170 |

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

### Reliability Testing

| Parameter | Requirement | Test Method |
|---|---|---|
| Carrying Capacity | No fusing | Rated current, 4 hours |
| Fusing Time | Within 120 seconds | 200 % 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, 1 time, 30 seconds |
| Resistance to Solder Heat | ±20 % | 260 °C ±5 °C,10 seconds ±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 |

UL File Number ........................................E198545
http://www.ul.com/ Follow link to Online Certificates Directory, then enter UL File No. E198545, or click here

### 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

BOURNS®

**Asia-Pacific:**
Tel: +886-2 2562-4117
Email: asiacus@bourns.com

**Europe:**
Tel: +36 88 520 390
Email: eurocus@bourns.com

**The Americas:**
Tel: +1-951 781-5500
Email: americus@bourns.com

**www.bourns.com**

* 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.
“SinglFuse” 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-1206SP 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-1206SP Series - Time Lag Surface Mount Fuses

### Typical Part Marking

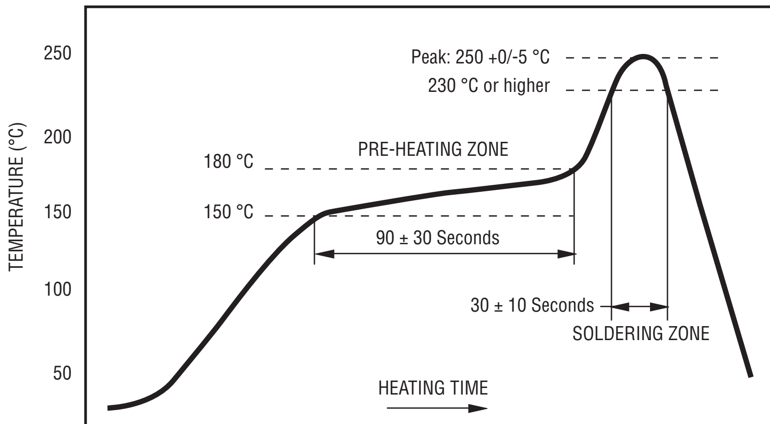
Represents total content. Layout may vary.

RATED 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 | |

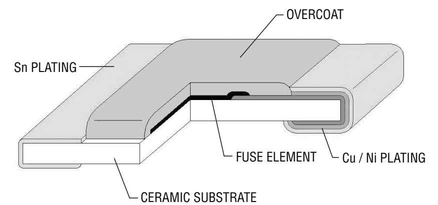
### How to Order

### Solder Reflow Recommendations

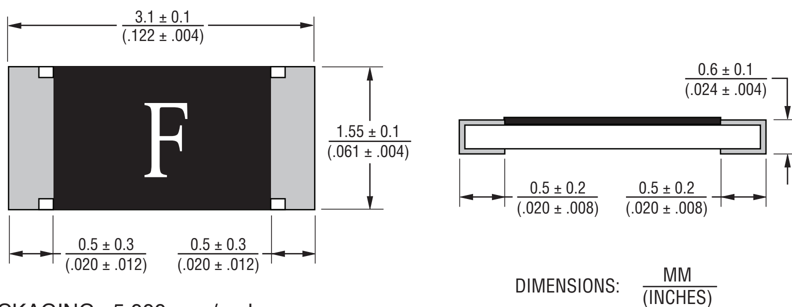



PEAK: 250 +0/-5 °C, 5 seconds
PRE-HEATING ZONE: 150 to 180 °C, 90 ± 30 seconds
SOLDERING ZONE: 230 °C or higher, 30 ± 10 seconds

### Construction & Material Content

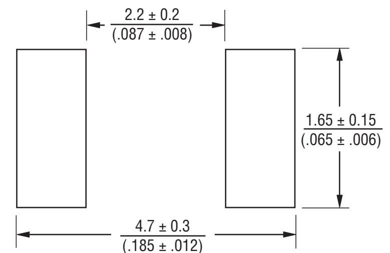



### Product Dimensions




PACKAGING: 5,000 pcs./reel

### Recommended Pad Layout

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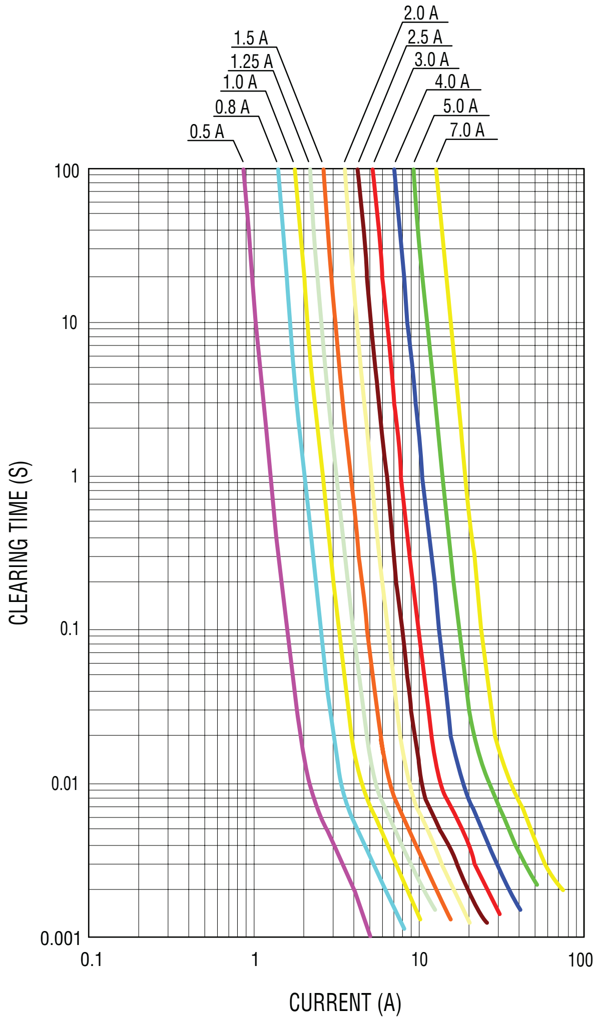
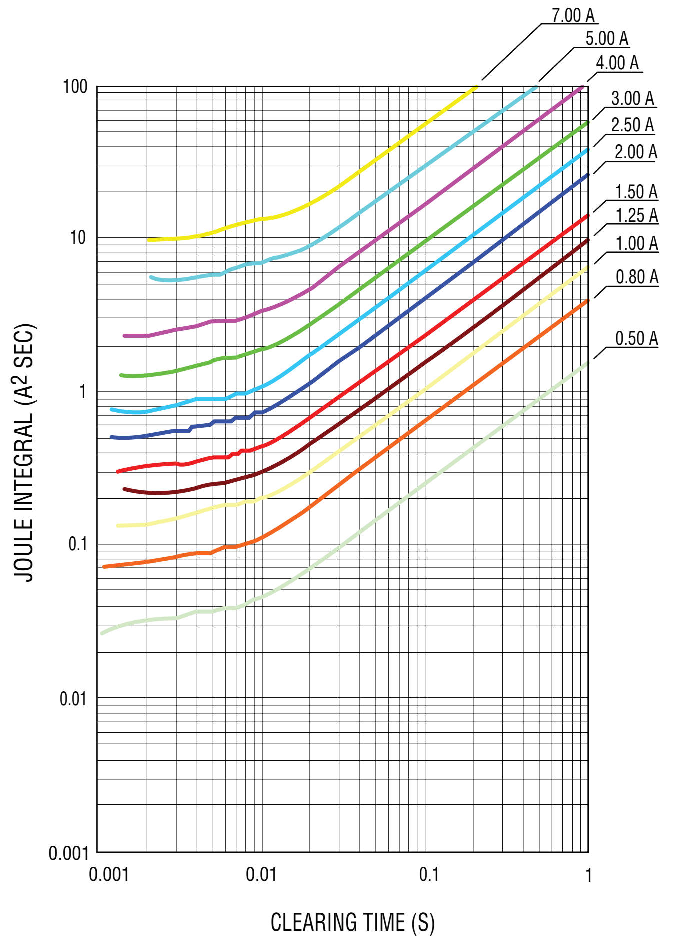
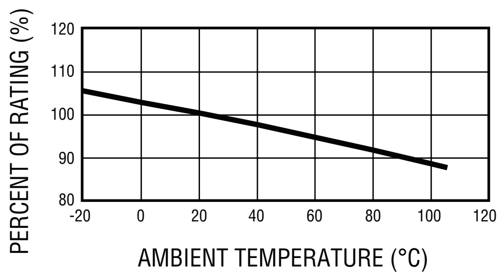
## Average Time Current Curves




## Minimum I²T V Clear Time Curves




## Thermal Derating Curve




REV. C 10/17

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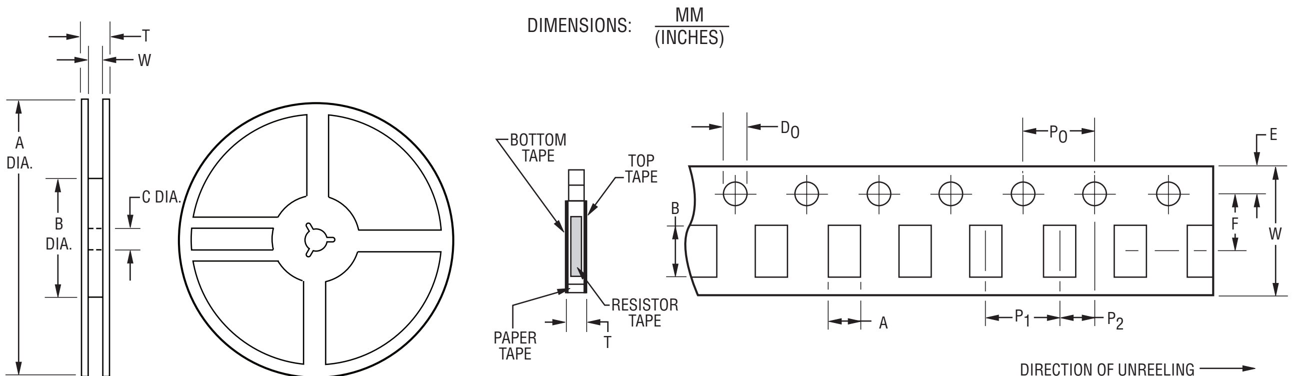
# SF-1206SP Series Tape and Reel Specifications

BOURNS®

| Tape Dimensions | SF-1206SP 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 | 178 ± 0.2 (7.087 ± .079) |
| B Min. | 60.0 ± 1.0 (2.362 ± .039) |
| 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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