

SingIFuse™ SF-3812F-T Series Features

- Single blow fuse for overcurrent protection
- EIA 3812 (10030 metric) footprint
- Ceramic tube design for fast acting fusing speed applications
- UL 248-14 compliant
- Surface mount packaging for automated assembly
- RoHS compliant* and halogen free**

SF-3812F-T Series – Fast Acting SMD Fuses

Clearing Time Characteristics for Series

% of Current Rating	Clearing Time at 25 °C	
	Min.	Max.
100 %	4 hours	—
200 %	—	60 seconds

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Electrical Characteristics

Model	Rated Current (A)	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I^2t (A^2s) ****	Certifications
						cUL: E198545
SF-3812F1000T-2	10	0.0067	250 VAC	100 A @ 250 VAC 150 A @ 125 VAC 50 A @ 250 VDC 130 A @ 80 VDC 300 A @ 72 VDC	75	✓
SF-3812F1500T-2	15	0.005			141.75	✓
SF-3812F2000T-2	20	0.003			356	✓
SF-3812F2500T-2	25	0.0024		100 A @ 250 VAC 150 A @ 125 VAC 130 A @ 80 VDC 300 A @ 72 VDC	625	✓
SF-3812F3000T-2	30	0.0018			900	✓
SF-3812F3500T-2	35	0.0014			1320	✓
SF-3812F4000T-2	40	0.00126		100 A @ 250 VAC 150 A @ 125 VAC 300 A @ 65 VAC 100 A @ 100 VDC 200 A @ 75 VDC 600 A @ 60 VDC	1897.6	✓
SF-3812F5000T-2	50	0.00108			3150	✓
SF-3812F6000T-2	60	0.0009			4224	✓

*** Resistance value measured with ≤10 % rated current at 25 °C ambient. Tolerance ± 30 %.
**** Melting I^2t calculated at 10 times rated current.

Environmental Characteristics

Operating Temperature ..... -55 °C to +125 °C
Storage Conditions
- Temperature ..... +15 °C to +30 °C
- Humidity ..... 20 % to 70 %
- Shelf Life ..... 2 years from manufacturing date

Moisture Sensitivity Level 1
ESD Classification (HBM) ..... Class 6

CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See 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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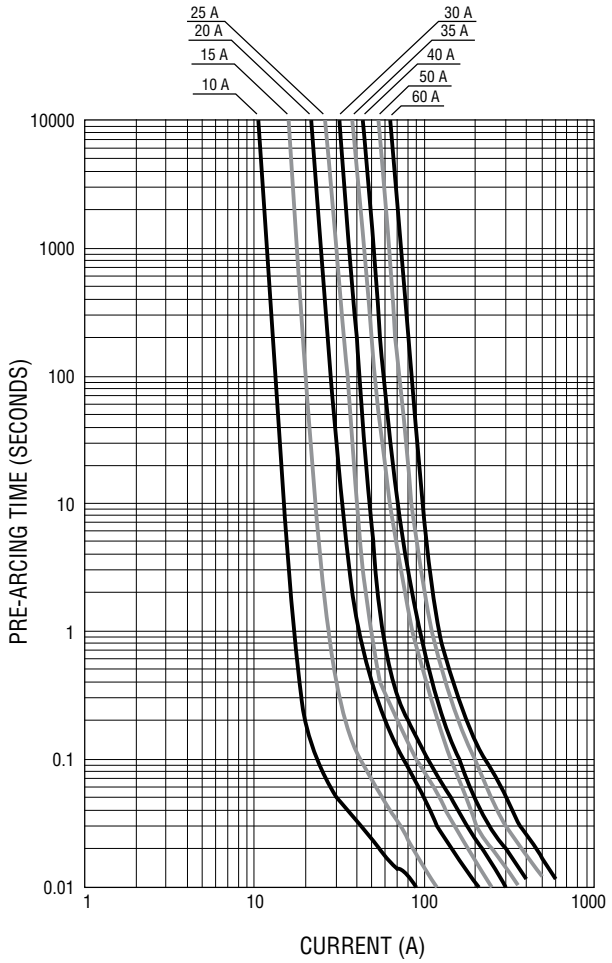
SingIFuse™ SF-3812F-T Series Applications

- Battery Management Systems
- Blade Computing
- PC Servers
- POE, POE+
- Voltage Regulator Modules
- Power Supplies
- Advanced Telecommunication Computing Architecture (ATCA) Applications

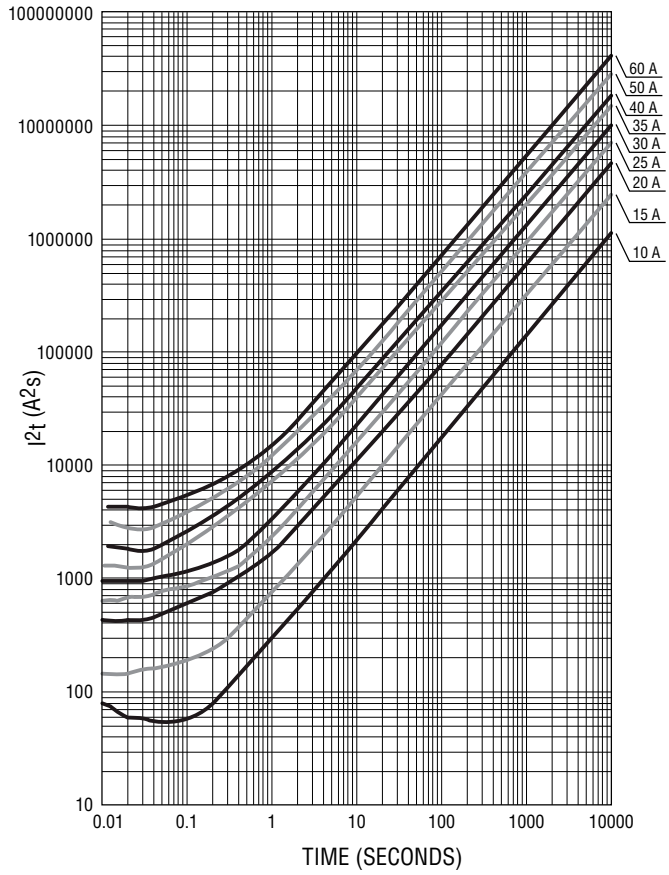
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Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves



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Typical Part Marking

Represents total content. Layout may vary.



Rated Current	Part Marking
10 A	L 10 A
15 A	L 15 A
20 A	L 20 A
25 A	L 25 A
30 A	L 30 A
35 A	L 35 A
40 A	L 40 A
50 A	L 50 A
60 A	L 60 A

How to Order

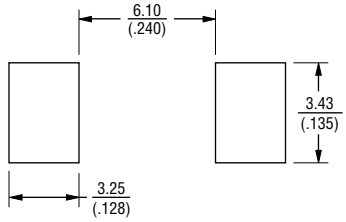
SF - 3812 F 1000 T - 2

- SinglFuse™ Product Designator
- SMD Footprint
  - 3812 = EIA 3812 (10030 metric)
- Fuse Blow Type
  - F = Fast Acting
- Rated Current
  - 1000 ~ 6000 (10 A ~ 60 A)
- Structure Type
  - T = Ceramic Tube
- Packaging Type
  - - 2 = Tape & Reel

Packaging

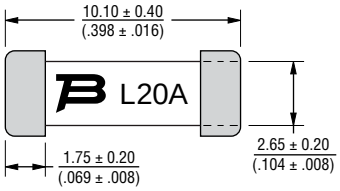
Reel Dimension	13-inch Tape and Reel
Specification	EIA 481-2
Quantity	2,500 pieces
Packaging Code	-2

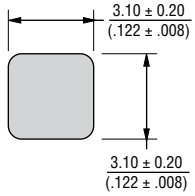
Recommended Pad Layout



DIMENSIONS: MM / (INCHES)

Product Dimensions

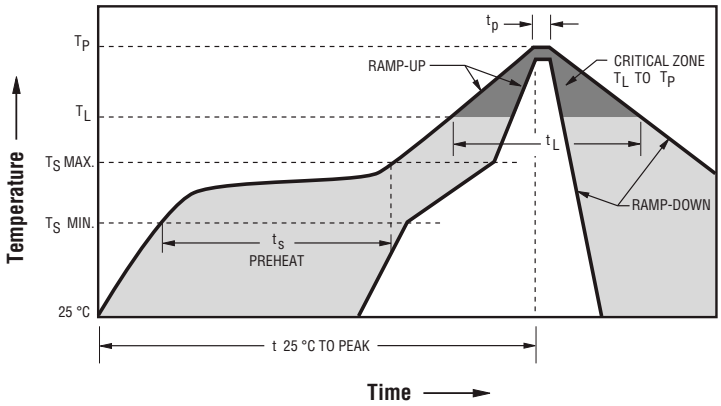




DIMENSIONS: MM / (INCHES)

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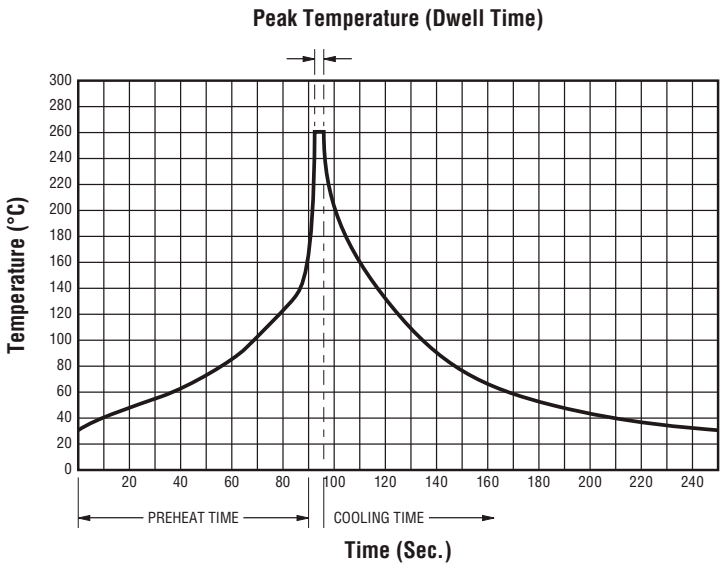
Solder Reflow Recommendations



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 60~180 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Ramp Up Rate (T_{smax} to T_L)	5 °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 +0/-5 °C
Time within 5 °C of actual peak temperature (T_p)	10~30 seconds*
Ramp Down Rate (T_p to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.
Do not exceed	260 °C

* Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.

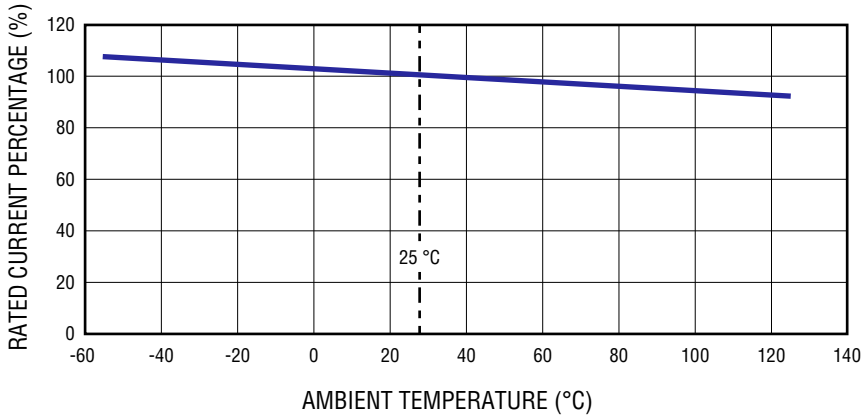
Solder Wave Recommendations



Profile Feature	Pb-Free Assembly
Preheat: Temperature Max. (T_{smax}) Time (Min. to Max.)	 150 °C 60~90 seconds
Solder Pot Temperature	260 °C max.
Solder Dwell Time	2~3 seconds

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Current Rating Thermal Derating Curve



Reliability Testing

No.	Test	Test Condition	Requirement	Test Reference
1	Solderability	Temperature setup: 235 ±5 °C Time setup: 10 ±1 sec.	After test terminal electrode wetting area must be greater than 95 %	IEC 60068-2-58
2	Resistance to soldering heat	Temperature setup: 260 +0/-5 °C Time setup: 10 sec. max.	DCR change ≤ ±15 %	IEC 60068-2-58
3	Thermal shock	Temperature setup: 25 °C ~ -65 °C ~ 25 °C ~ 125 °C Time setup: -65 °C (30 min) ~ 25 °C (5 min) ~ 125 °C (30 min) ~ 25 °C (5 min), 5 cycles	DCR change ≤ ±15 % No mechanical damage	MIL-STD-202G Method 107G Test Condition B
4	Humidity unload	Heat (85 ±0.5 °C) High Humidity (85 ±1 % RH) 240 hours	DCR change ≤ ±15 % No mechanical damage	MIL-STD-202G Method 103B Test Condition A
5	Salt spray	Salt spray concentration: 5 ±1 % Test liquid temperature: 35 ±0.5 °C 96 hours	DCR change ≤ ±15 % No mechanical damage	MIL-STD-202G Method 101E Test Condition A
6	Bending	The board shall be bent by 1 mm at a rate of 1 mm/sec.	DCR change ≤ ±15 %	IEC 60127-4
7	Vibration	Frequency setup: 10 ~ 55 ~ 10 Hz Time setup: 1 Minute/cycle (X-Y-Z, 120 cycles, 6 hours)	DCR change ≤ ±15 % No mechanical damage	MIL-STD-202G Method 201A

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