



SinglFuse™ SF-3812FG-T Series Features

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

SF-3812FG-T Series – Fast Acting & Low Voltage SMD Fuses

Electrical Characteristics

Model	Rated Current (A)	Fusing Time	Resistance (Ω) Typ.***	Rated Voltage	Interrupting Rating	Typical I ² t (A ² s)****	Certifications
							cUL E198545
SF-3812FG2000T-2	20	Open within 60 sec. at 200 % rated current	0.0033	125 VAC	100 A @ 125 VAC 300 A @ 100 VDC	18	✓
SF-3812FG2500T-2	25		0.0022		100 A @ 125 VAC 100 A @ 100 VDC	45	✓
SF-3812FG3000T-2	30		0.0016			101	✓

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

**** Melting I²t calculated at 10 times rated current.

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: 235 ±5 °C Time setup: 30 ±5 sec.	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

Agency Recognition

UL File NumberE198545

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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.

"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-3812FG-T Series Applications

- Storage Systems
- PC Servers
- Voltage Regulator Modules
- Power Supplies

SF-3812FG-T Series – Fast Acting & Low Voltage SMD Fuses **BOURNS®**

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

Typical Part Marking

Represents total content. Layout may vary.



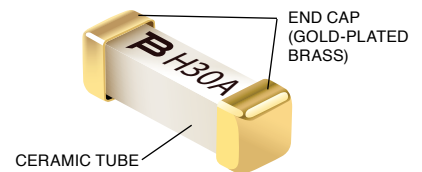
Rated Current	Part Marking
20 A	H 10 A
25 A	H 15 A
30 A	H 20 A

How to Order

SF - 3812 FG 2000 T - 2

SinglFuse™
 Product Designator
 SMD Footprint
 3812 = EIA 3812
 (10030 metric)
 Fuse Blow Type
 FG = Fast Acting & Low Voltage
 Rated Current
 2000 ~ 3000 (20 A ~ 30 A)
 Structure Type
 T = Ceramic Tube
 Packaging Type
 - 2 = Tape & Reel

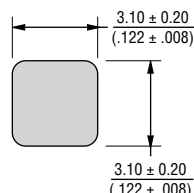
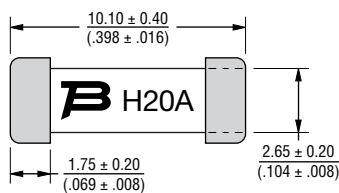
Construction



Packaging Quantity

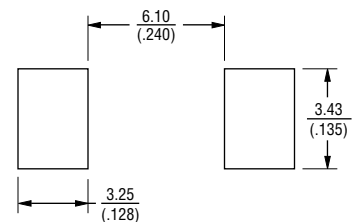
2,500 pieces per 13-inch reel

Product Dimensions



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

Recommended Pad Layout



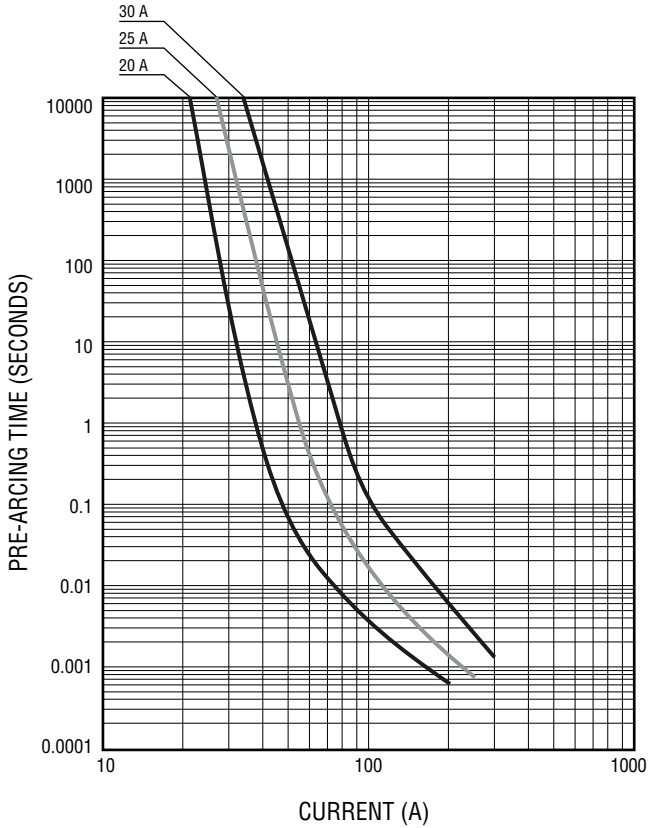
DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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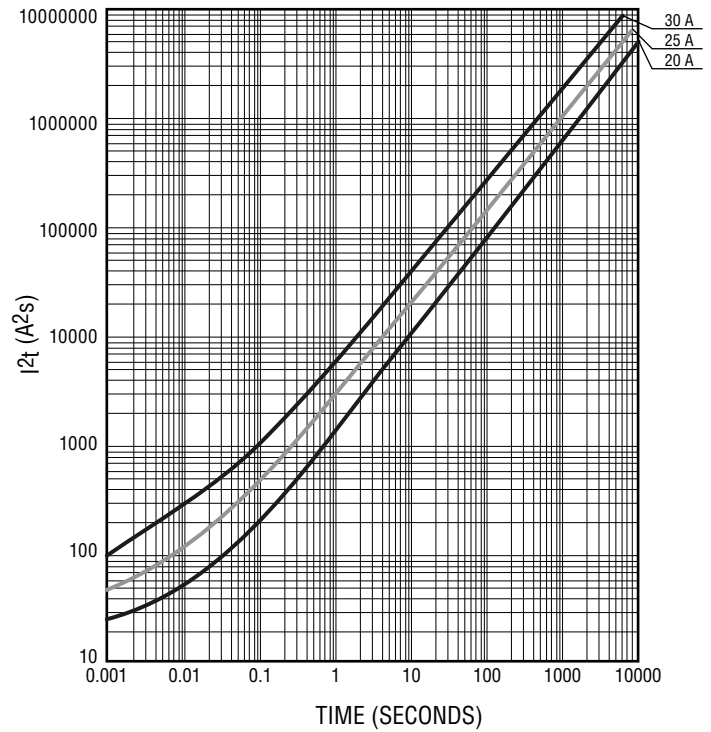
Users should verify actual device performance in their specific applications.

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Average Pre-Arcing Time vs. Current Curves



Average I^2t vs. t Curves

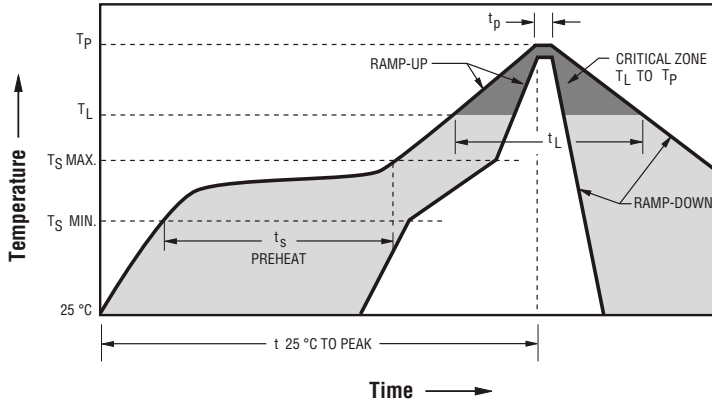


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Solder Reflow Recommendations

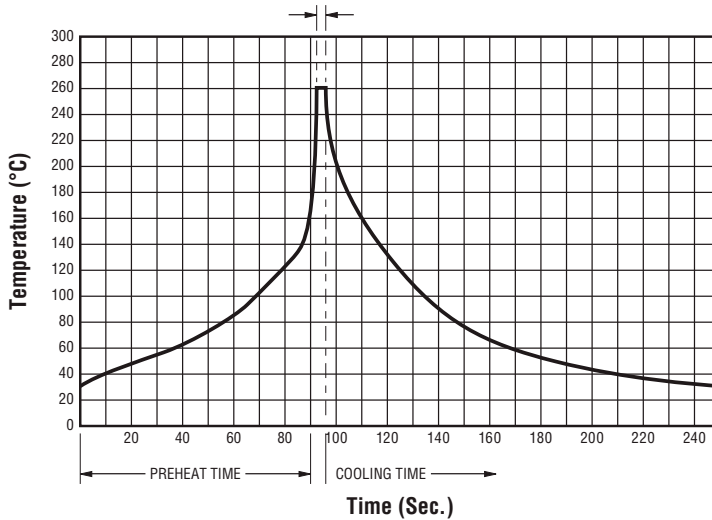


Profile Feature	Pb-Free Assembly
Preheat / Soak: Temperature Min. (T_{smin}) Temperature Max. (T_{smax}) Time (t_s) from (T_{smin} to T_{smax})	150 °C 200 °C 60~180 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Ramp Up Rate (T_{smax} to T_L)	5 °C / second max.
Liquidous Temperature (T_L) Time (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 (T_p) is defined as a supplier minimum and a user maximum.

Solder Wave Recommendations

Peak Temperature (Dwell Time)



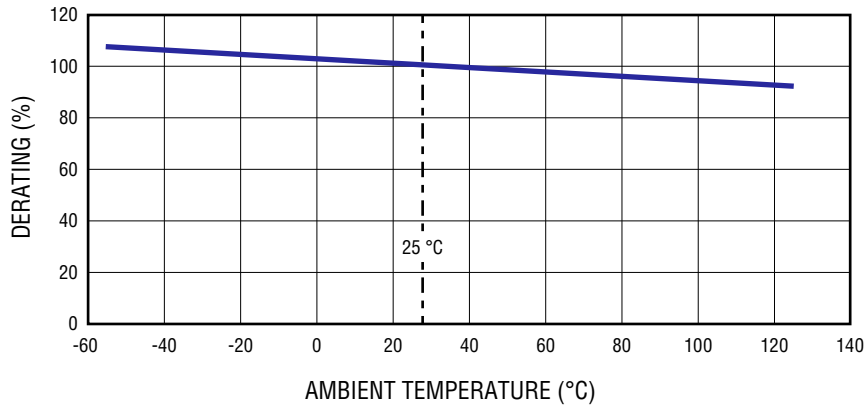
Profile Feature	Pb-Free Assembly
Preheat: Temperature Max. (T_{smax}) Time (Min. to Max.)	150 °C 60~90 seconds
Solder Pot Temperature	260 °C max.
Solder Dwell Time	2~3 seconds

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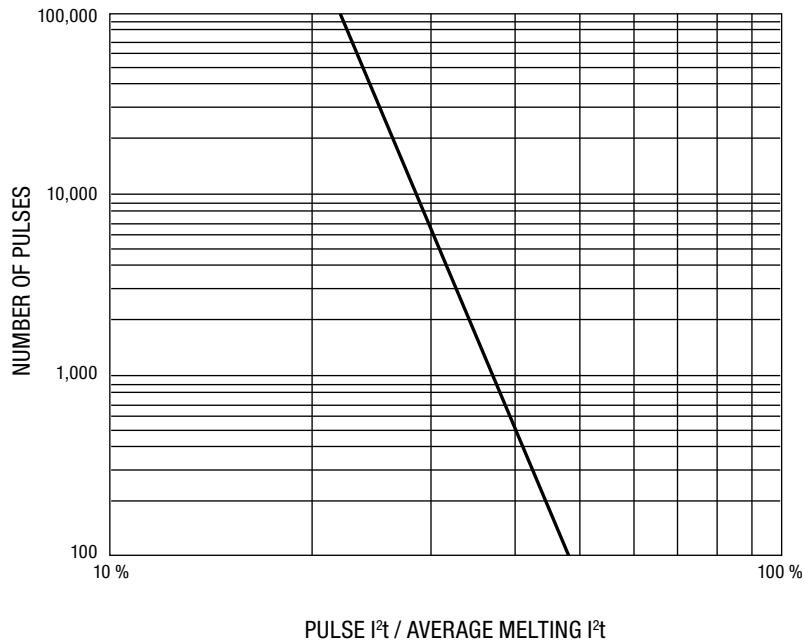
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Current Rating Thermal Derating Curve



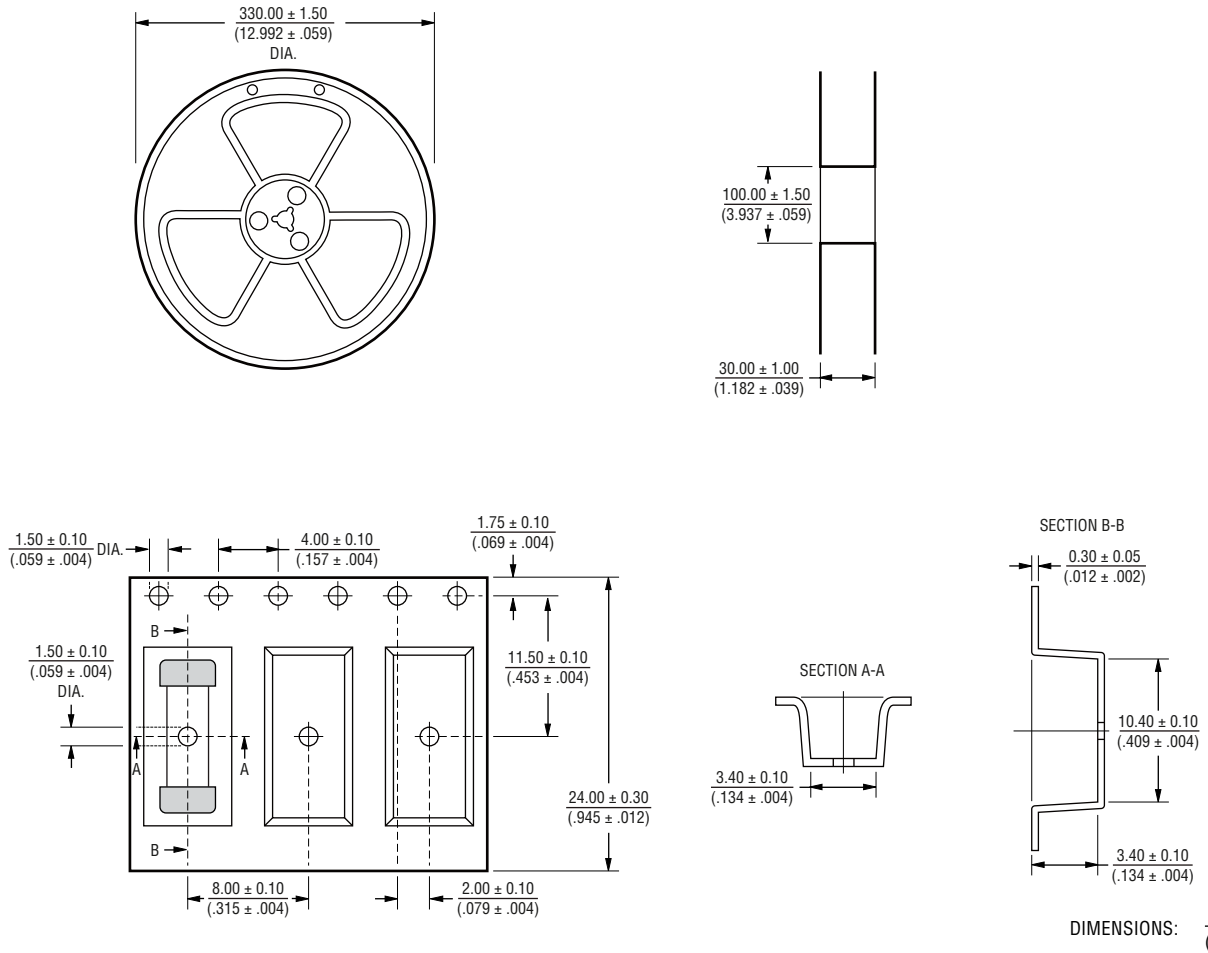
Pulse Cycle Withstand Capability



SF-3812FG-T Series – Fast Acting & Low Voltage SMD Fuses

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Packaging Specifications



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

REV. 03/19

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