

# 881F Series

## High-Current Fast Opening SMD Fuse



### Description

This high-current SMD fuse is a small, square, surface mount fuse that is designed as supplemental overcurrent protection for high-current circuits in various applications. This faster opening version enhances protection of the product from overload and short circuit current events in the application.

### Features & Benefits

- Available in 70A, 80A, and 100A ratings
- High interrupting rating - 1500A @ 75Vdc
- With faster opening time response
- Surface mountable high current fuse
- Robust and solderless fuse design
- Lead-free, Halogen-free, and RoHS compliant
- UL Recognized to UL/CSA/NMX 248-1
- Single fuse solution for high current applications
- Suitable for a wide variety of voltage requirement and application
- Guaranteed protection against overload and short circuit current events
- Compatible with high volume assembly requirements
- Enhanced product reliability and performance
- Conforms to IEC/EN 60127-1 and IEC/EN 60127-7

### Additional Information



Resources



Accessories



Samples

### Applications

- Blade Servers
- Routers
- High-power Battery Systems
- Power Factor Correction (PFC) in high wattage power supplies
- Power Distribution Units (PDUs)

### Agency Approvals

Agency	Agency File Number	Ampere Range
CE	N/A	70A – 100A
UKCA	N/A	70A – 100A
cULus	E71611	70A – 100A
△	J50501628	70A – 100A

### Electrical Characteristics for Series

% of Ampere Rating	Opening Time
100%	1 Hour, Min.
200%	60 Seconds, Max.

### Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (mOhms)	Nominal Voltage Drop * (mV)	Nominal Melting ** I <sup>2</sup> t (A <sup>2</sup> sec)	Agency Approvals			
							CE	UKCA	cULus	△
70	070.	75Vdc	1500A @75Vdc	0.82	89	1050	X	X	X	X
80	080.			0.63	86	2000	X	X	X	X
100	100.			0.52	96	4800	X	X	X	X

\* Nominal Voltage Drop measured at 100% rated Current. \*\* Nominal Melting I<sup>2</sup>t measured at 1500A.

### Thermal Characteristics

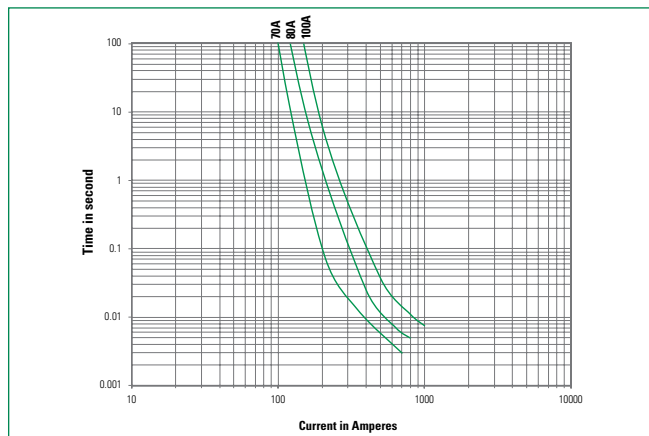
Ampere Rating I <sub>n</sub> (A)	Typical Case Temperature Rise (°C) *		
	@ 50%I <sub>n</sub>	@ 75%I <sub>n</sub>	@ 100%I <sub>n</sub>
70	16	38	73
80	25	58	88
100	32	60	127

\* Typical values based on tests conducted with fuse mounted on FR-4 circuit board of 0.062" (1.6 mm) thickness with 6 oz. (210 µm) Cu.

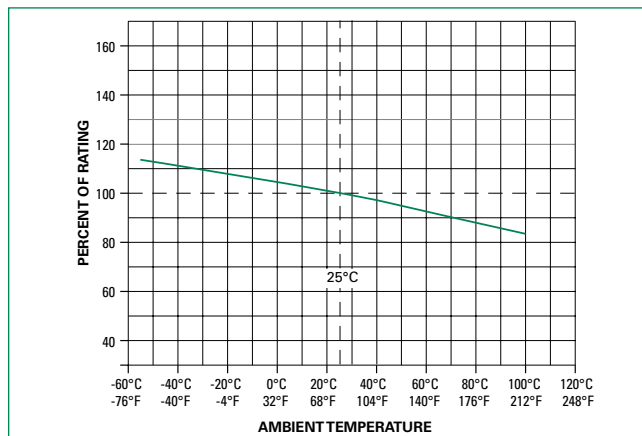
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## High-Current Fast Opening SMD Fuse

Average Time Current Curves



Temperature Re-rating Curve

**Note:**

1. Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Example:

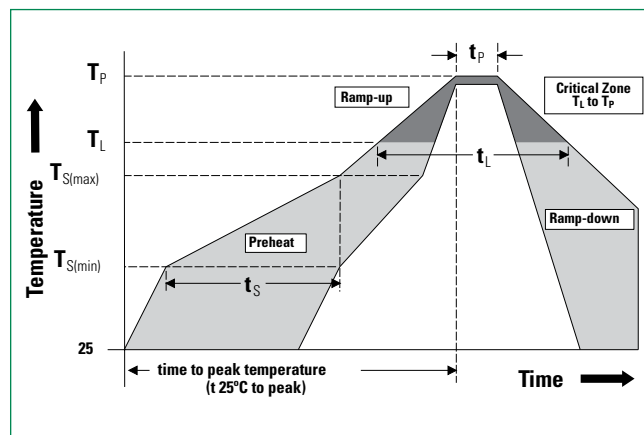
For continuous operation at 70°C, the fuse should be re-rated as follows:

$$I = (0.75)(0.90)I_n = (0.675)I_n$$

2. The temperature re-rating curve represents nominal conditions. For questions about the temperature re-rating curve, please consult Littelfuse technical support assistance.

## Soldering Parameters

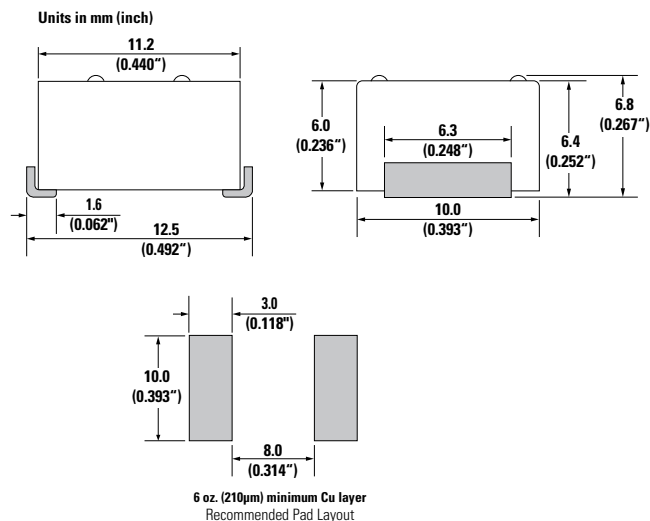
<b>Reflow Condition</b>		Pb – Free assembly
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (Min to Max) ( $t_s$ )	60 – 180 secs
<b>Average ramp up rate (Liquidus Temp (<math>T_L</math>) to peak</b>		5°C/second max.
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		5°C/second max.
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Temperature ( $t_L$ )	60 – 150 seconds
<b>Peak Temperature (<math>T_p</math>)</b>		260 <sup>+0/-5</sup> °C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		20 – 40 seconds
<b>Ramp-down Rate</b>		5°C/second max.
<b>Time 25°C to peak Temperature (<math>T_p</math>)</b>		8 minutes max.
<b>Do not exceed</b>		260°C



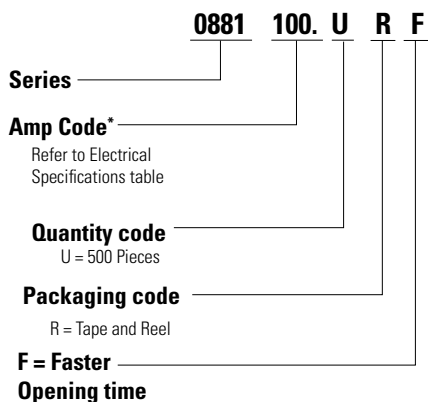
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## High-Current Fast Opening SMD Fuse

### Dimensions



### Part Numbering System



**\*Example:**  
 80 amp product is 088080.UR  
 (100 amp product shown above)

### Product Characteristics

<b>Materials</b>	Body: Thermoplastic, RTI 150°C Terminations: Tin-plated Copper
<b>Product Marking</b>	Brand logo, Voltage Rating, 'F' (Faster Opening Time), and Ampere Rating
<b>Operating Temperature</b> <sup>1 2</sup>	-55° to +100°C with proper derating

#### Notes:

- Based on loading at 75% of ampere rating when mounted using recommended pad layout.
- Usage outside of stated operating temperature range requires testing in application.  
 Maintain case temperature below 150°C in application.

<b>Thermal Shock</b>	MIL-Std 202 Method 107 Test Condition B (-65°C to 125°C, 5 cycles).
<b>Moisture Resistance</b>	MIL-Std 202 method 106 High Humidity (90-98% RH), Heat (65°C)
<b>Vibration</b>	MIL-STD-202, Method 201 (10-55 Hz)
<b>Mechanical Shock</b>	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)
<b>Resistance to Solder Heat</b>	MIL-Std 202 Method 210 Test Condition B (10sec at 260°C)
<b>Solderability</b>	MIL-STD-202 Method 208
<b>MSL Test</b>	Level 2a J-STD-020
<b>Salt Fog</b>	MIL-Std 202 Method 101 Test Condition B (5% NaCL solution, 48 hours exposure)

### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
24mm Tape and Reel	EIA-481 Rev. D (IEC 60286-3)	500	UR

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