

# 881 Series

## High-Current SMD Fuse



### Description

This high-current SMD fuse is a small, square, surface mount, AEC-Q200 qualified fuse that is designed as supplemental overcurrent protection for high-current circuits in various applications.

### Features & Benefits

- Heat resistant plastic body, UL 94 V-0
- Low voltage drop
- High Reliability Solderless Fuse
- High pulse resistance
- Compatible with lead-free solders and higher temperature profiles
- Halogen-free and RoHS compliant
- UL Recognized to UL/CSA/NMX 248-1
- CE Mark indicates compliance with Low-Voltage and RoHS Directives
- Conforms to IEC/EN 60127-1 and IEC/EN 60127-7
- AEC-Q200 Qualified

### 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
cULus	E71611	60 A – 125A
△	J50501628	60 A – 125A

### 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	
							cULus	△
60	060.	115VDC	1500 A@75 VDC 1000 A@100 VDC 500 A@115 VDC 6000 A@24 VDC 350 A@125 VDC	0.8	75	1050	X	X
70	070.	100VDC	1500 A@75 VDC 1000 A@100 VDC 6000 A@24 VDC 350 A@125 VDC	0.74	85	1250	X	X
80	080.		1500 A@75 VDC 1000 A@100 VDC 6000 A@24 VDC 350 A@125 VDC	0.56	80	3300	X	X
90	090.		1500 A@75 VDC 1000 A@100 VDC 6000 A@24 VDC	0.54	85	4300	X	X
100	100.		1500 A@75 VDC 1000 A@100 VDC 6000 A@24 VDC	0.45	80	6900	X	X
125	125.	75 VDC	1500 A @75 VDC	0.43	85	7450	X	X

\* Nominal Voltage Drop measured at 100% rated Current.

\*\* Nominal Melting I<sup>2</sup>t measured at 1500A.

\*\*\* Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details.

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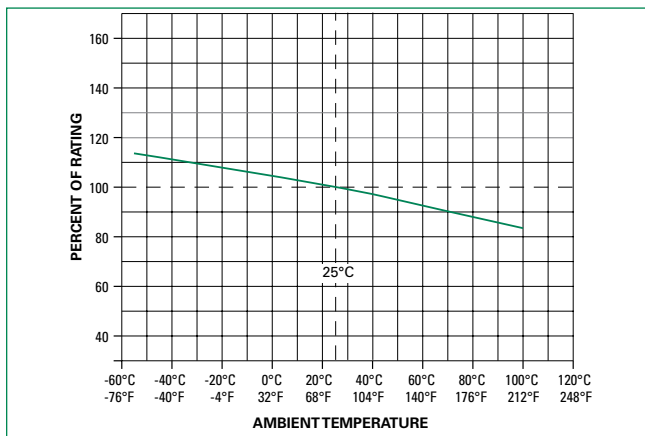
### Thermal Characteristics

Ampere Rating $I_n$ (A)	Typical Case Temperature Rise (°C) *		
	@ 50% $I_n$	@ 75% $I_n$	@ 100% $I_n$
60	14	35	60
70	15	37	70
80	16	39	85
90	19	49	105
100	23	53	120
125.**	34	58	90

\* 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  $\mu$ m) Cu.

\*\* 125 A based on tests conducted with fuse mounted on FR4 circuit board of 0.062" (1.6 mm) thickness with 10 oz. (350  $\mu$ m) Cu @ rated current.

### Temperature Re-rating Curve



**Note:**

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

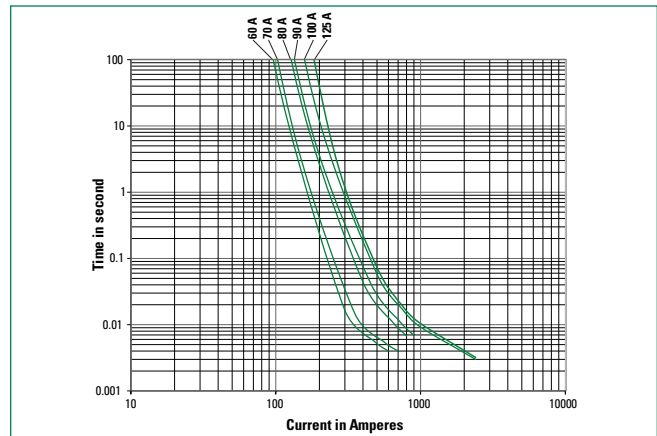
Example:

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

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

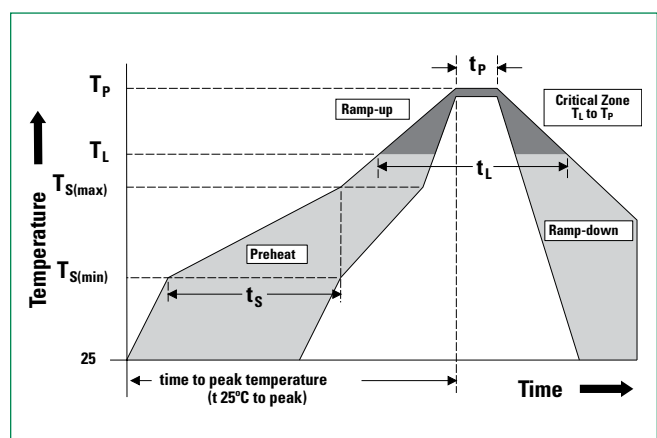
2. The temperature re-rating curve represents nominal conditions. For questions about the temperature re-rating curve, please consult Littelfuse technical support assistance.

### Average Time Current Curves



## Soldering Parameters

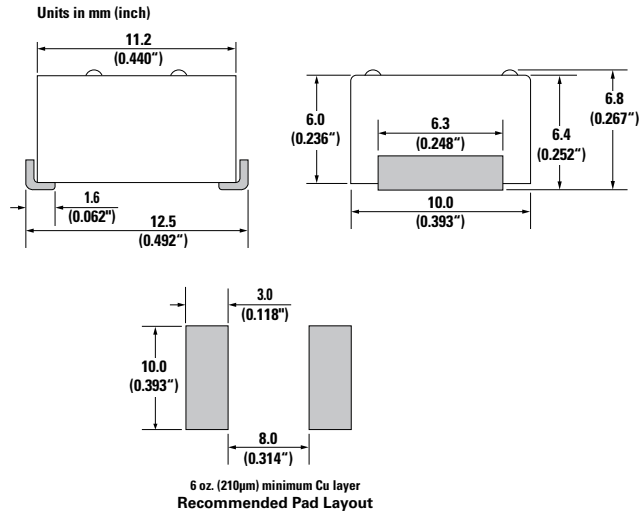
<b>Reflow Condition</b>	Pb - Free assembly	
<b>Number of allowed reflow cycles</b>	3	
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150 °C
	- Temperature Max ( $T_{s(max)}$ )	200 °C
	- Time (Min to Max) ( $t_s$ )	60 – 180 secs
<b>Average ramp up rate (Liquidus Temp (<math>T_L</math>) to peak)</b>	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 $^{+0/-5}$ °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	



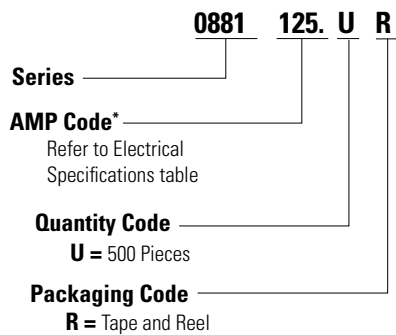
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## High-Current SMD Fuse

### Dimensions



### Part Numbering System



**\*Example:**  
60 amp product is 0881060.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, and Ampere Rating
<b>Operating Temperature</b> <sup>1,2</sup>	-55 °C 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
24 mm Tape and Reel	EIA-481 Rev. D (IEC 60286-3)	500	UR

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