

881 Series High-Current SMD Fuse



**Agency Approvals**

Agency	Agency File Number	Ampere Range
	E71611	60A – 100A

**Electrical Characteristics for Series**

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

**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.

**Features**

- Heat resistant plastic body, UL 94 V-0
- Meets Littelfuse's Automotive qualifications\*
- Low voltage drop
- High Reliability Solderless Fuse
- High pulse resistance
- Lead-free -- 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.

\* Largely based on Littelfuse internal AEC-Q200 test plan.

**Applications**

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

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

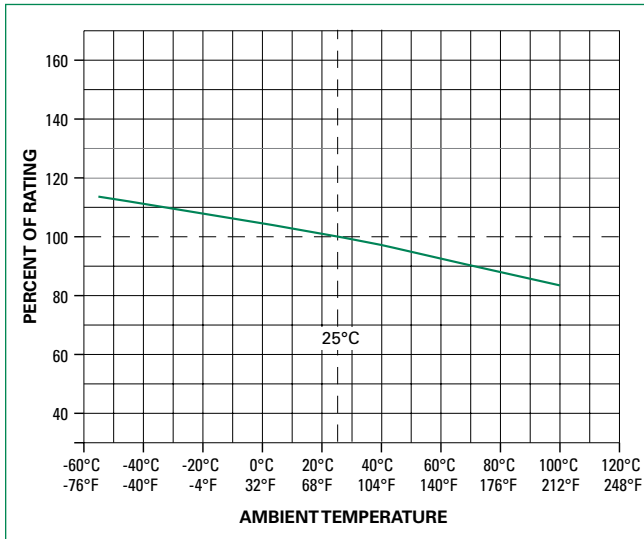
\* Nominal Voltage Drop measured at 100% rated Current.  
\*\* Nominal Melting I<sup>2</sup>t measured at 1500A.

**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>
60	14	35	60
70	15	37	70
80	16	39	85
90	19	49	105
100	23	53	120

\* 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.

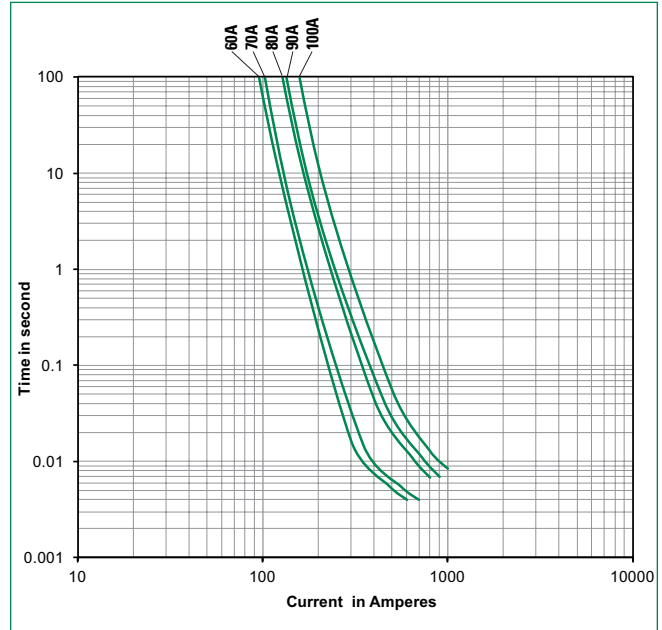
### Temperature Re-rating Curve



**Note:**

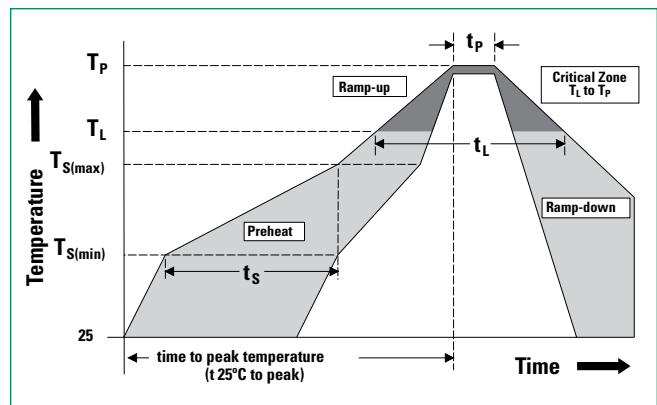
1. Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.  
Example:  
For continuous operation at 70°C, the fuse should be re-rated as follows:  
 $I = (0.75)(0.90)_{RAT} = (0.675)_{RAT}$
2. The temperature re-rating curve represents nominal conditions. For questions about the temperature re-rating curve, please consult Littelfuse technical support assistance.

### Average Time Current Curves

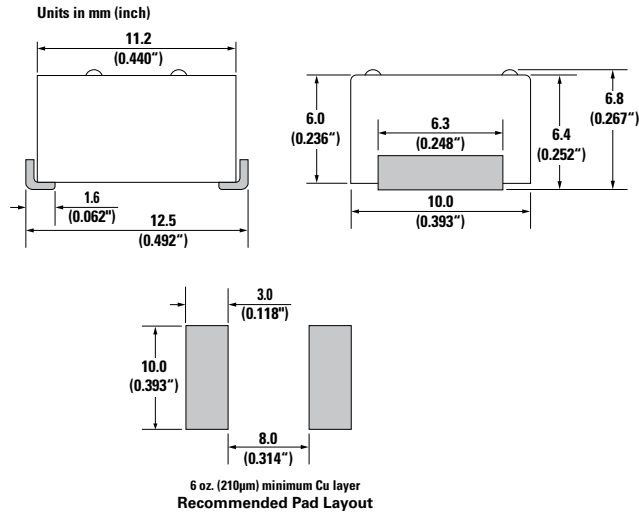


### Soldering Parameters

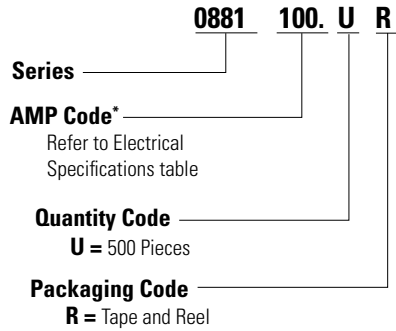
<b>Reflow Condition</b>	Pb – Free assembly	
<b>Number of allowed reflow cycles</b>	3	
<b>Pre Heat</b>	- Temperature Min ( $T_{s(min)}$ )	150°C
	- Temperature Max ( $T_{s(max)}$ )	200°C
	- Time (Min to Max) ( $t_s$ )	60 – 180 secs
<b>Average ramp up rate (Liquidus Temp (<math>T_L</math>) to peak)</b>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



### 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° to +100°C with proper derating

**Notes:**

1. Based on loading at 75% of ampere rating when mounted using recommended pad layout.
2. 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 1 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, part 3)	500	UR