881 Series
High-Current 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.

Features & Benefits

- Heat resistant plastic body, UL 94 V-0
- Meets Littelfuse Automotive qualifications*
- 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

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

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 – 100 A
	J50501628	60 A – 100 A

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 ** I²t (A²sec)	Agency Approvals	
							cULus	
60	060.	115VDC	1500 A@75 VDC 1000 A@100 VDC 500 A@115 VDC 6000 A@24 VDC IR/ 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 IR/ 350 A@125 VDC	0.74	85	1250	X	X
80	080.			0.56	80	3300	X	X
90	090.			0.54	85	4300	X	X
100	100.			0.45	80	6900	X	X

* Nominal Voltage Drop measured at 100% rated Current.
** Nominal Melting I²t measured at 1500A.
*** Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details.

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

* 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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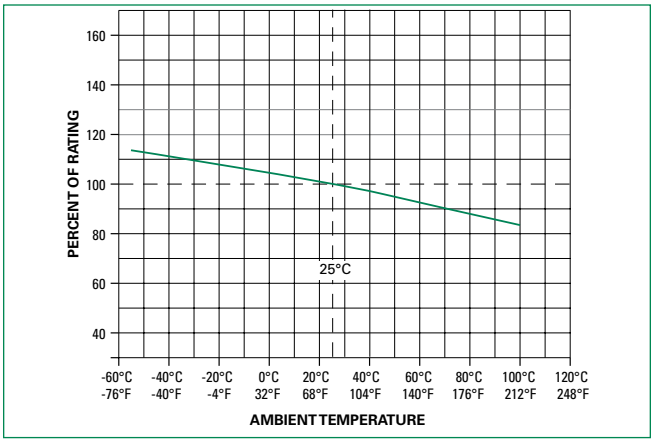
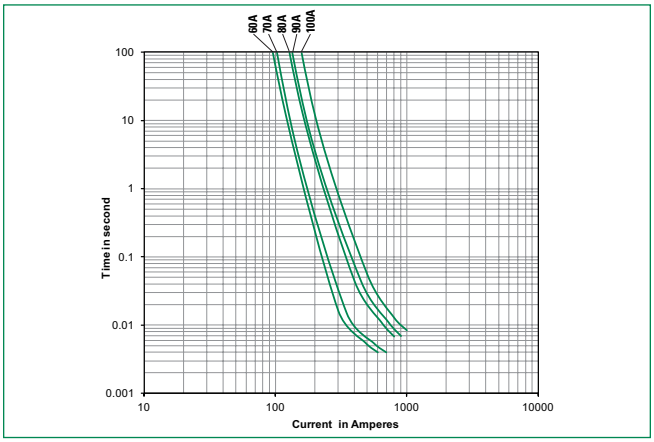
Temperature Re-rating Curve



Average Time Current Curves

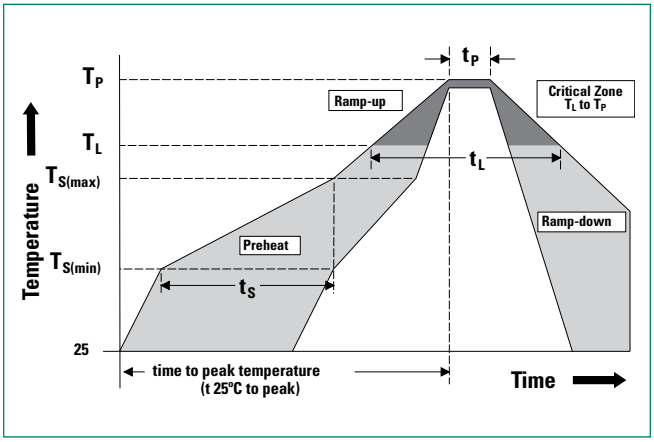


Note:

1. Rerating 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

Reflow Condition		Pb–Free assembly
Number of allowed reflow cycles		3
Pre Heat	**- Temperature Min ($T_{s(min)}$)**	150 °C
	- Temperature Max ($T_{s(max)}$)	200 °C
	- Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		5 °C/second max.
$T_{S(max)}$ to T_L - Ramp-up Rate		5 °C/second max.
Reflow	**- Temperature (T_L) (Liquidus)**	217 °C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5 °C/second max.
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260 °C



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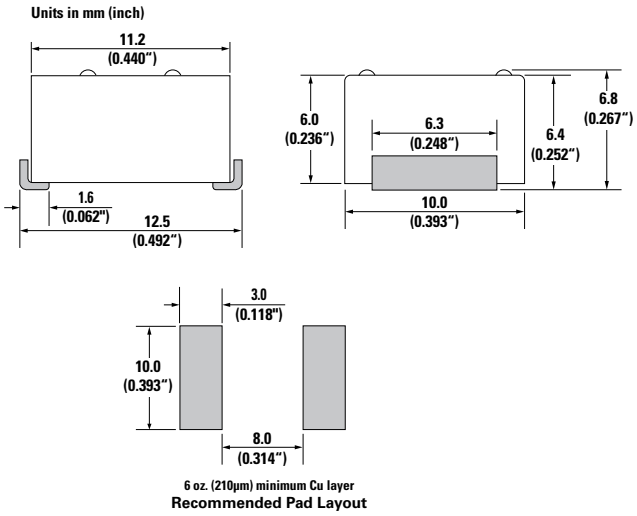
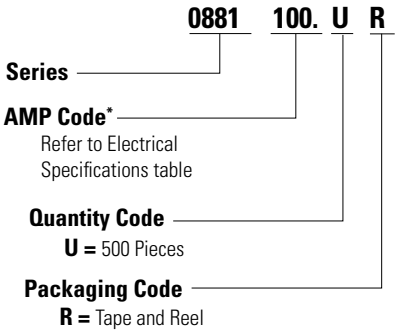
Dimensions



Part Numbering System



***Example:**
60 amp product is 0881060.UR
(100 amp product shown above).

Product Characteristics

Materials	Body: Thermoplastic, RTI 150 °C Terminations: Tin-plated Copper
Product Marking	Brand logo, Voltage Rating, and Ampere Rating
Operating Temperature [1, 2]	-55 °C 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.

Thermal Shock	MIL-STD-202 Method 107 Test Condition B (-65°C to 125°C, 5 cycles).
Moisture Resistance	MIL-STD-202 method 106 High Humidity (90-98%RH), Heat (65°C)
Vibration	MIL-STD-202, Method 201 (10-55 Hz)
Mechanical Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)
Resistance to Solder Heat	MIL-STD-202 Method 210 Test Condition B (10sec at 260°C)
Solderability	MIL-STD-202 Method 208
MSL Test	Level 1 J-STD-020
Salt Fog	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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