

871 Series

High-Current SMD Fuse



Description

The Littelfuse 871 Series high-current SMD fuse is a small square surface-mount fuse that easily supports the higher current requirements of various applications.

Features and Benefits

- Heat resistant plastic body, UL94 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
- AEC-Q200-qualified

Applications

- Datacenter
- Blade server
- Router
- Power supply–power factor correction

Web Resources



Download ECAD models, order samples, and find technical resources at www.littelfuse.com

Agency Approvals

Agency	Agency File Number	Ampere Range
cULus	E71611	150~200 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 I ² t ** (A ² sec)	Agency Approvals
							cULus
150	150.	75 Vdc	1500 A @75 Vdc	0.3	75	21500	X
200	200.	75 Vdc		0.24	90	40500	X

*Nominal Voltage Drop measured at 100% rated current

** Nominal melting I²t measured at 1500 A

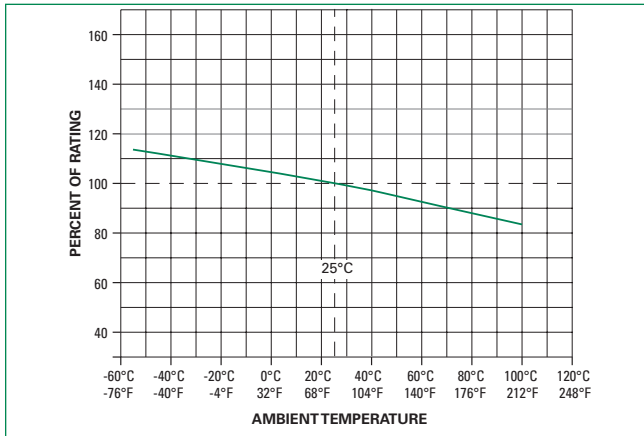
Amp Rating In(A)	Typical Case Temperature Rise(°)*		
	@50% In	@75% In	@100% In
150.	15	35	68
200.	24	76	114

* Typical values based on tests conducted with fuse mounted on FR4 circuit board of 0.093" (2.4 mm) thickness with 15 oz. (525 um) Cu @ rated current.

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Temperature Re-rating Curve



Notes:

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

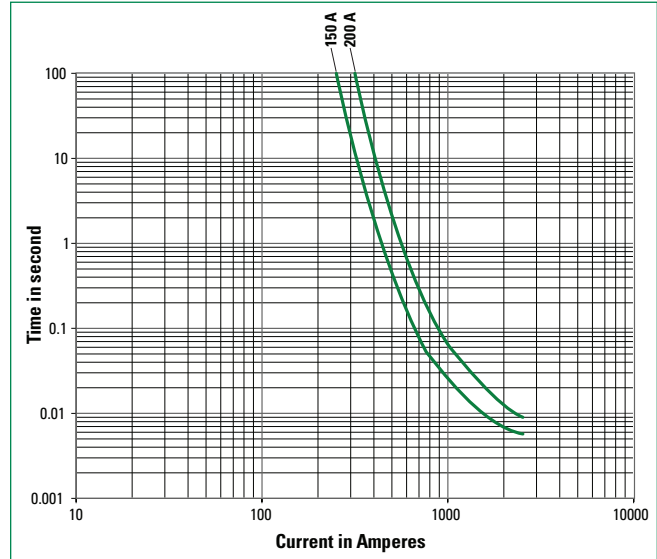
Example:

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

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

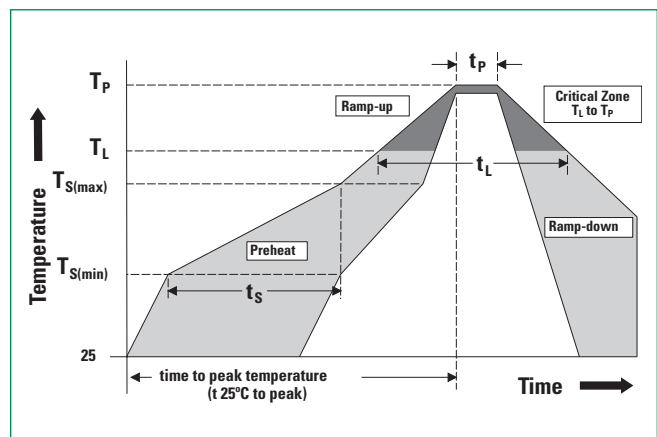
2. The temperature re-rating curve represents nominal conditions. For questions about the temperature re-rating curve, please consult Littelfuse technical support assistance.

Average Time Current Curves



Soldering Parameters

Reflow Condition		Pb-free assembly
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 \pm 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

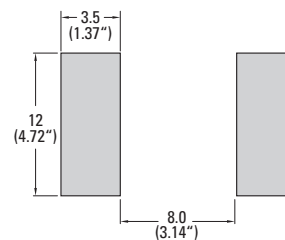
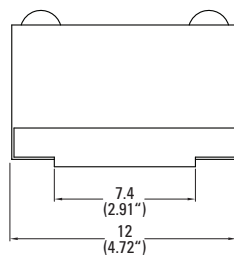
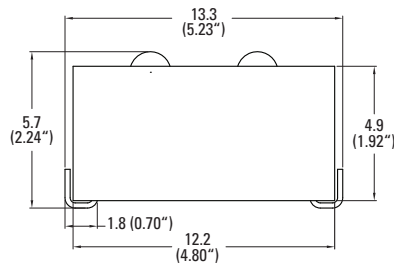


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Dimensions

Unit: mm (inch)



Recommended Pad Layout

Product Characteristics

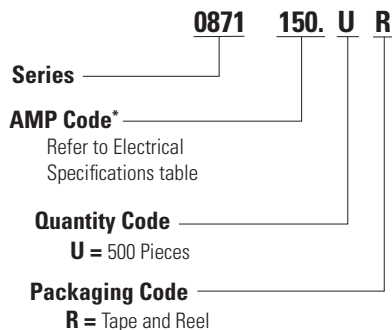
Materials	Body: Thermoplastic, RTI 150 °C Terminations: Tin-plated Copper
Product Marking	Brand logo, Voltage Rating, and Ampere Rating
Operating Temperature ^{1,2}	-55 °C to +100 °C with proper derating

Notes:

- 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.

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 2a J-STD-020
Salt Fog	MIL-STD-202 Method 101 Test Condition B (5% NaCl solution, 48 hours exposure)

Part Numbering System



***Example:**

60 amp product is 0871060_UR
(125 amp product shown above).

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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