881F Series

High-Current Fast Opening SMD Fuse

Additional Information

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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

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
UK CA	N/A	70A – 100A
c UL us	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^2t (A^2sec)	Agency Approvals			
							CE	UK CA	c UL us	
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^2t measured at 1500A.

Thermal Characteristics

Ampere Rating I_n (A)	Typical Case Temperature Rise (°C) *		
	@ 50%I_n	@ 75%I_n	@ 100%I_n
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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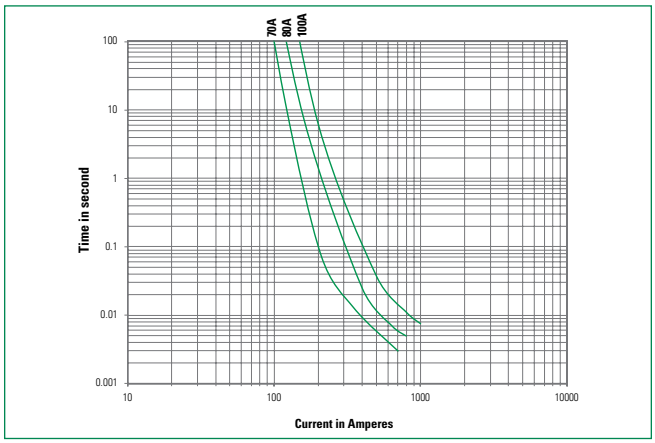
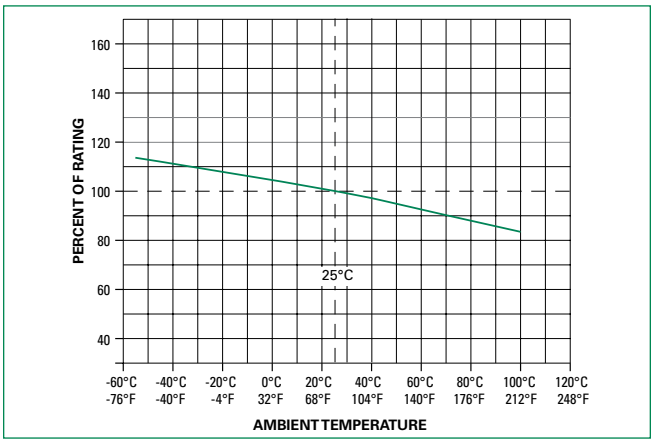
Average Time Current Curves



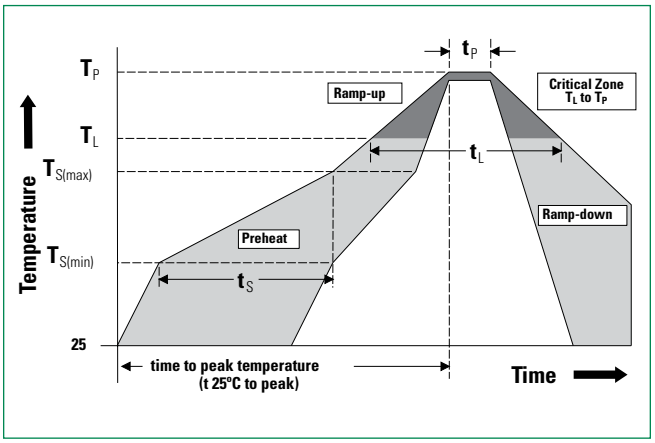
Temperature Re-rating Curve



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
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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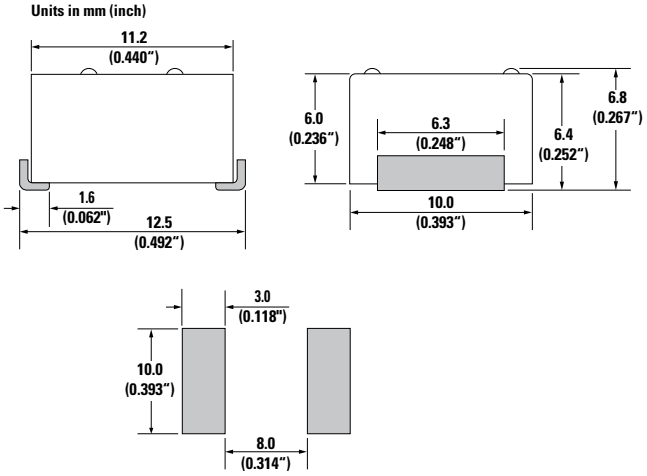
Dimensions



Product Characteristics

Materials	Body: Thermoplastic, RTI 150°C Terminations: Tin-plated Copper
Product Marking	Brand logo, Voltage Rating, 'F' (Faster Opening Time), and Ampere Rating
Operating Temperature [1] [2]	-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.

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

0881 100. U R F

Series

Amp Code*
Refer to Electrical Specifications table

Quantity code
U = 500 Pieces

Packaging code
R = Tape and Reel

F = Faster Opening time

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

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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