# 881F Series

## High-Current Fast Opening SMD Fuse


## Additional Information

Resources | Accessories | Samples

## 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 |

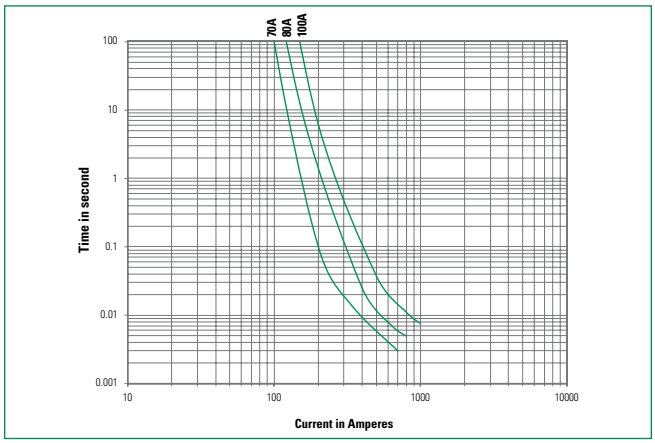
* Typical values based on tests conducted with fuse mounted on FR-4 circuit board of 0.062" (1.6 mm) thickness with 6 oz. (210 µm) Cu.



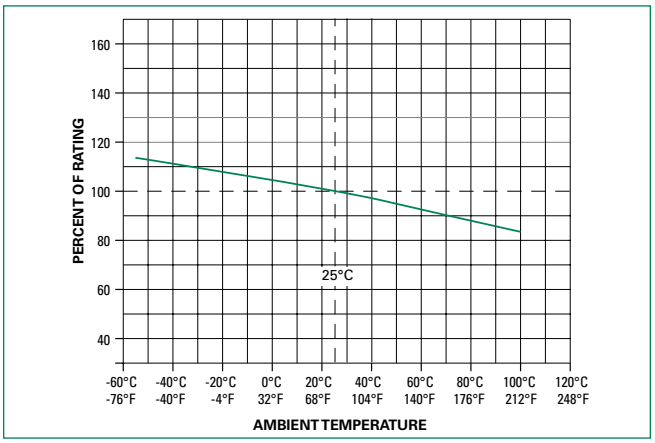
Revised: GD. 10/25/22

# 881F Series
## High-Current Fast Opening SMD Fuse

### Average Time Current Curves



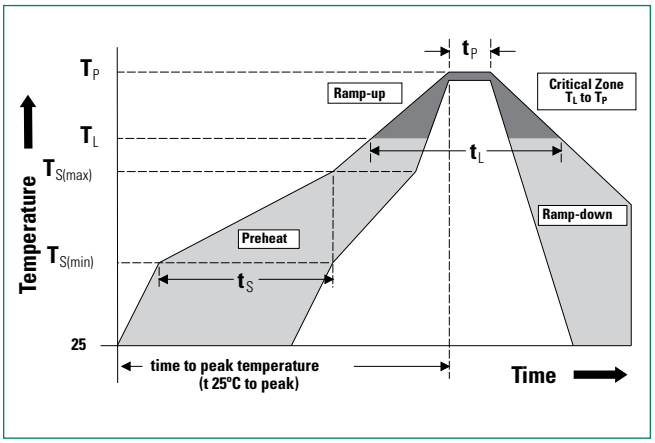

### Temperature Re-rating Curve




**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

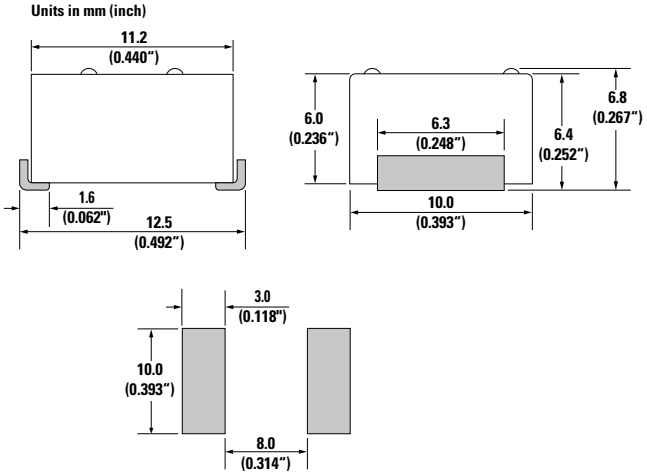
| | | |
|---|---|---|
| **Reflow Condition** | | Pb – Free assembly |
| **Pre Heat** | **- Temperature Min ($T_{s(min)}$)** | 150°C |
| | **- Temperature Max ($T_{s(max)}$)** | 200°C |
| | **- Time (Min to Max) ($t_s$)** | 60 – 180 secs |
| **Average ramp up rate (Liquidus Temp ($T_L$) to peak** | | 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 |



# 881F Series

## High-Current Fast Opening SMD Fuse

### Dimensions




### Product Characteristics

| | |
|---|---|
| **Materials** | Body: Thermoplastic, RTI 150°C<br>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<br>Test Condition B (-65°C to 125°C, 5 cycles). |
| **Moisture Resistance** | MIL-Std 202 method 106<br>High Humidity (90-98%RH), Heat (65°C) |
| **Vibration** | MIL-STD-202, Method 201 (10-55 Hz) |
| **Mechanical Shock** | MIL-STD-202, Method 213,<br>Test Condition I<br>(100 G's peak for 6 milliseconds) |
| **Resistance to Solder Heat** | MIL-Std 202 Method 210<br>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<br>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 |






Revised: GD. 10/25/22