

### 885 Series Fuse



#### Agency Approvals

| Agency                                                                            | Agency File Number | Ampere Range |
|-----------------------------------------------------------------------------------|--------------------|--------------|
|  | E10480             | 1A-5A        |
|  | R50395911          | 1A-5A        |

#### Electrical Characteristics for Series

| % of Ampere Rating | Opening Time       |
|--------------------|--------------------|
| 125%               | 1 hour, Minimum    |
| 200%               | 2 minutes, Maximum |
| 1000%              | 1 second, Maximum  |

#### Description

The 885 Nano<sup>2</sup>® Surface Mount Fuses are high voltage rated fuses with high interrupting current ratings at 450VDC/500VDC and 350VAC.

#### Features

- Heat resistant plastic body that meets flammability rating of V-0 to UL 94.
- 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
- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Evaluated to EN 60127-1 and EN 60127-7

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

#### Applications

- Li-ion battery packs used in electric vehicles
- Battery Management Systems (BMS)
- Sense lines
- HV DC/DC converter

#### Additional Information



Datasheet



Resources



Samples

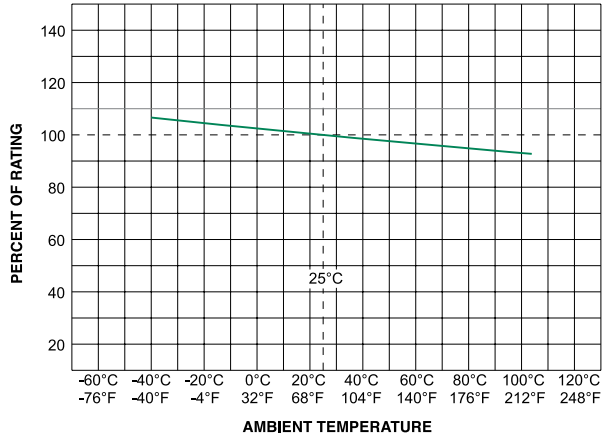
#### Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating                                                               | Nominal Cold Resistance (Ohms) <sup>1</sup> | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Nominal Voltage Drop (mV) | Nom Power Dissipation (mW) | Agency Approvals                                                                      |                                                                                       |
|-------------------|----------|------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------|---------------------------|----------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                   |          |                        |                                                                                   |                                             |                                                       |                           |                            |  |  |
| 1.00              | 001.     | 500                    | 1500A @ 350VDC<br>100A @ 500VDC<br>50A @ 600VDC<br>100A @ 350VAC<br>150A @ 250VAC | 0.0780                                      | 0.80                                                  | 105                       | 105                        | X                                                                                     | X                                                                                     |
| 1.25              | 1.25     |                        | 1500A @ 350VDC<br>100A @ 500VDC<br>100A @ 350VAC<br>150A @ 250VAC                 | 0.0630                                      | 1.25                                                  | 105                       | 131                        | X                                                                                     | X                                                                                     |
| 1.60              | 01.6     |                        |                                                                                   | 0.0473                                      | 2.30                                                  | 98                        | 157                        | X                                                                                     | X                                                                                     |
| 2.00              | 002.     |                        |                                                                                   | 0.0322                                      | 4.70                                                  | 91                        | 182                        | X                                                                                     | X                                                                                     |
| 2.50              | 02.5     |                        |                                                                                   | 0.0267                                      | 6.90                                                  | 88                        | 220                        | X                                                                                     | X                                                                                     |
| 3.15              | 3.15     | 450                    | 1500A @ 125VDC<br>100A @ 500VDC<br>100A @ 350VAC<br>150A @ 250VAC                 | 0.0196                                      | 13.35                                                 | 79                        | 249                        | X                                                                                     | X                                                                                     |
| 4.00              | 004.     |                        | 1500A @ 125VDC<br>100A @ 450VDC<br>100A @ 350VAC<br>150A @ 250VAC                 | 0.0152                                      | 21.30                                                 | 79                        | 316                        | X                                                                                     | X                                                                                     |
| 5.00              | 005.     |                        |                                                                                   | 0.0119                                      | 35.00                                                 | 79                        | 395                        | X                                                                                     | X                                                                                     |

#### Notes:

1. Cold resistance measured at less than 10% of rated current at 23°C.
2. I<sup>2</sup>t values slated for 10xln opening time
3. If you have special electrical characteristic needs, please contact Littelfuse to discuss application specific options.

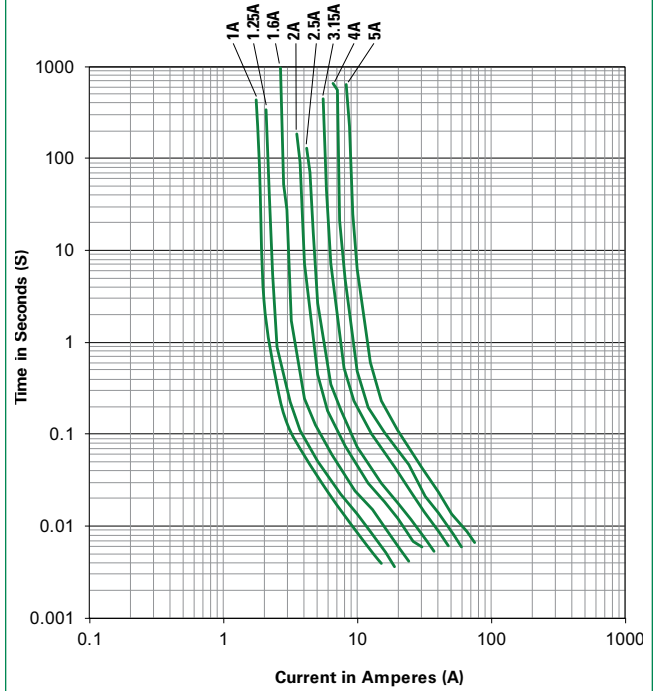
### Temperature Re-rating Curve



**Note:**

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

### Average Time Current Curves

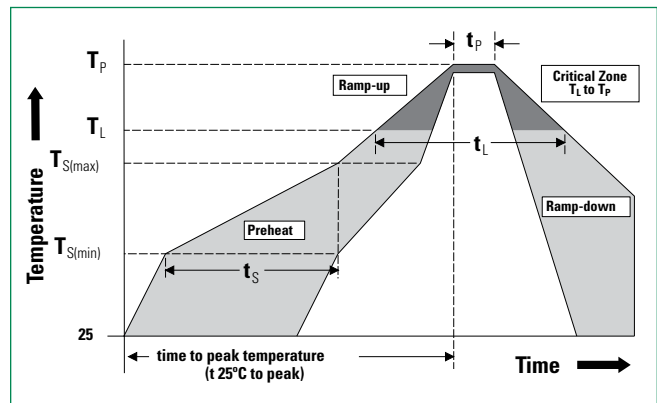


### Soldering Parameters

|                                                                       |                                    |                         |
|-----------------------------------------------------------------------|------------------------------------|-------------------------|
| <b>Reflow Condition</b>                                               |                                    | Pb – Free assembly      |
| <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 secs           |
| <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                   |

|                                  |                                        |
|----------------------------------|----------------------------------------|
| <b>Wave Soldering Parameters</b> | 260°C Peak Temperature, 3 seconds max. |
|----------------------------------|----------------------------------------|

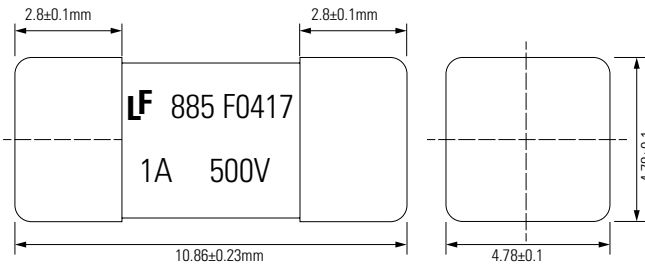


### Product Characteristics

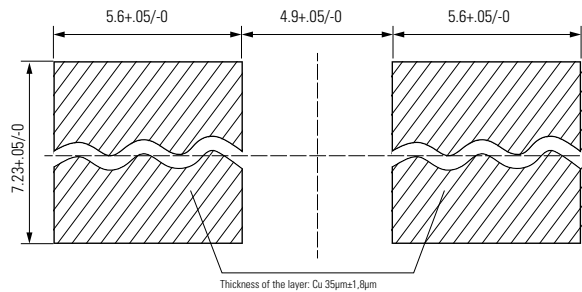
|                                     |                                                                     |
|-------------------------------------|---------------------------------------------------------------------|
| <b>Materials</b>                    | Body: Plastic UL 94 V-0<br>Cap: Tin Plated Brass                    |
| <b>Product Marking</b>              | Body: Brand Logo, Current Rating, Voltage Rating, Series, Date Code |
| <b>Solderability</b>                | JESD22-B102E Method 1                                               |
| <b>Resistance to Soldering Heat</b> | MIL-STD-202 Method 210<br>Test Condition K                          |

|                                   |                                                            |
|-----------------------------------|------------------------------------------------------------|
| <b>Operating Temperature</b>      | -40°C to +105°C with proper derating                       |
| <b>Climatic Category</b>          | IEC 60068-1, -2-1, -2-2, -2-78<br>(-40°C to +85°C/21 days) |
| <b>Vibration</b>                  | MIL-STD-202 Method 201 and 204                             |
| <b>Moisture Sensitivity Level</b> | J-STD-020, Level 1                                         |

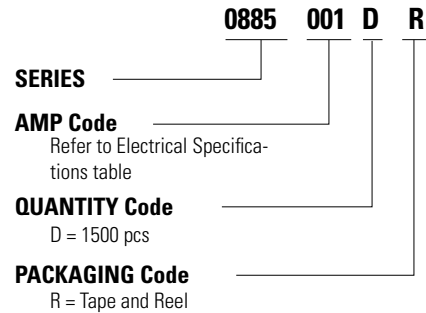
### Dimensions



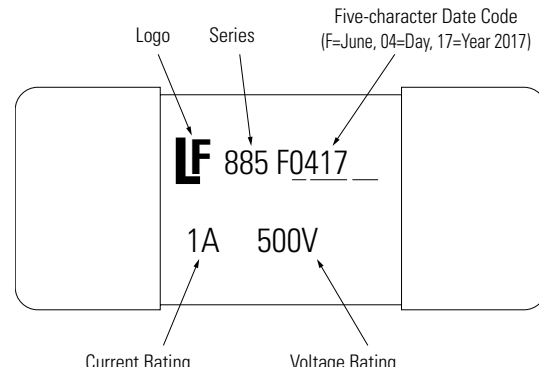
### Recommended Pad Layout



### Part Numbering System



### Date Code Information



### Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|------------------|-------------------------|----------|---------------------------|
| Tape and Reel    | EIA-481-D               | 1500     | D                         |