

### 485 Series Fuse (Not Recommended for Automotive Applications)



#### Agency Approvals

| Agency                                                                            | Agency File Number | Ampere Rating |
|-----------------------------------------------------------------------------------|--------------------|---------------|
|  | E10480             | 1A - 3.15A    |
|  | 29862              | 1A - 3.15A    |

#### Electrical Characteristics for Series

| % of Ampere Rating | Opening Time at 25°C |
|--------------------|----------------------|
| 100%               | 4 hours, Minimum     |
| 200%               | 60 seconds, Maximum  |

#### Description

The 485 Nano<sup>2</sup>® Fuse Series is a small, fast-acting, surface mount ceramic fuse rated at a remarkable 600VDC at its small size and with 100A breaking capacity. It is primarily designed for circuit protection in high energy applications. This product is fully compatible with lead-free solder alloys and higher temperature profiles associated with lead-free assembly.

#### Features

- Fast-Acting / Surface mount high fuse for high voltage (up to 600VDC) applications.
- Relatively high breaking capacity at 100A.
- Fully compatible with lead-free solder alloys and higher temperature profiles associated with lead-free assembly.
- RoHS-compliant and Halogen-free
- Ampere Ratings: 1A - 3.15A

#### Applications

- PC server and Telecom systems
- LCD TV inverter boards DC input protection
- Uninterruptible Power Supply (UPS) / 3-Phase Power Supplies
- 380VDC server / lighting in data center

#### Additional Information



**Datasheet**



**Resources**



**Samples**

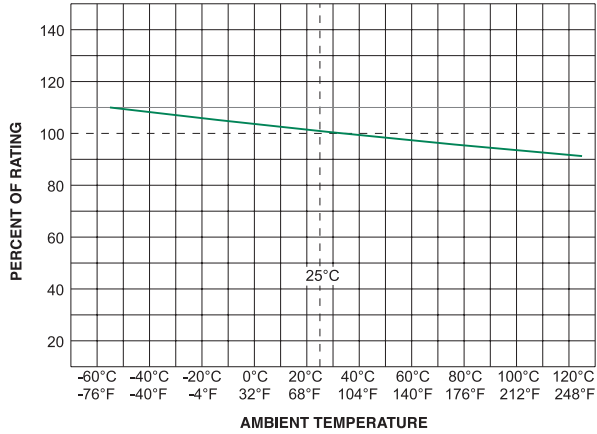
#### Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating      | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Agency Approvals                                                                      |                                                                                       |
|-------------------|----------|------------------------|--------------------------|--------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                   |          |                        |                          |                                |                                                       |  |  |
| 1.00              | 001.     | 600                    | 100A@600VDC, 100A@250VAC | 0.264                          | 0.3044                                                | X                                                                                     | X                                                                                     |
| 1.50              | 01.5     | 600                    |                          | 0.123                          | 0.3917                                                | X                                                                                     | X                                                                                     |
| 2.00              | 002.     | 600                    |                          | 0.0744                         | 0.8962                                                | X                                                                                     | X                                                                                     |
| 2.50              | 02.5     | 600                    |                          | 0.0583                         | 1.4921                                                | X                                                                                     | X                                                                                     |
| 3.15              | 3.15     | 600                    |                          | 0.0395                         | 3.304                                                 | X                                                                                     | X                                                                                     |

#### Notes:

1. Cold resistance measured at less than 10% of rated current at 23°C.
2. Agency Approval Table Key: X=Approved or Certified, P=Pending and Blank=Not Approved.
3. I<sup>2</sup>t values stated for 8 msec opening time.

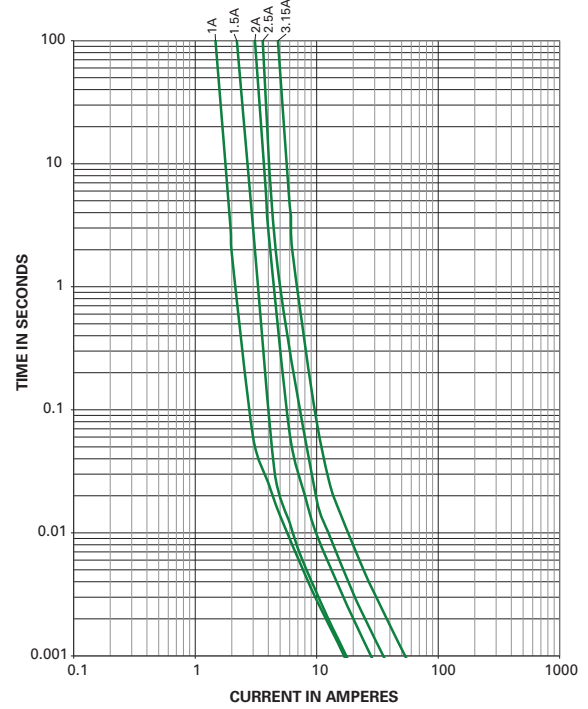
## Temperature Re-rating Curve



**Note:**

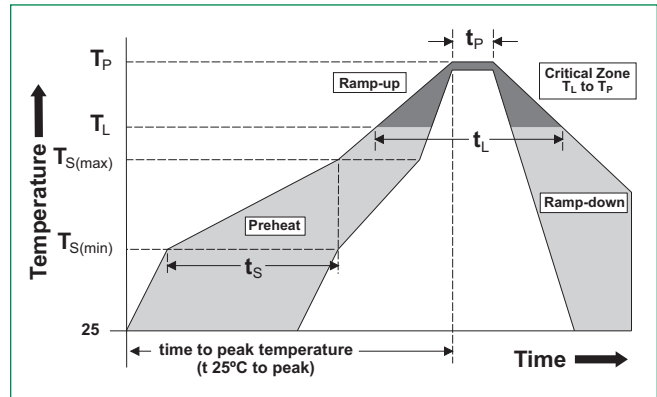
1. Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

## Average Time Current Curves



## Soldering Parameters - Reflow Soldering

| 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 ses            |
| 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 <sup>+0/-5</sup> °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                   |

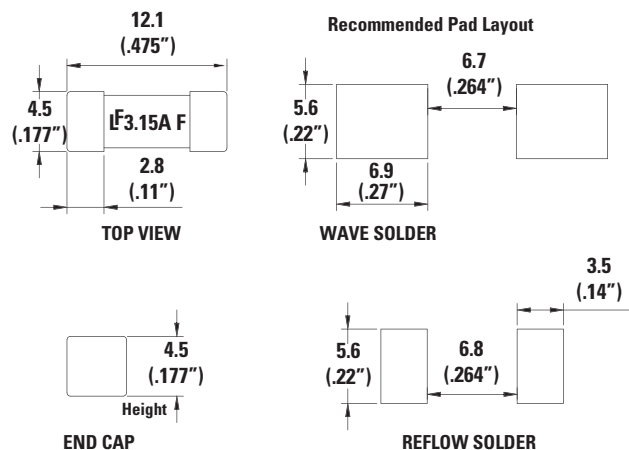


### Product Characteristics

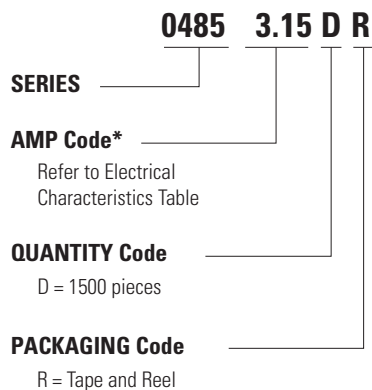
|                                              |                                                                     |
|----------------------------------------------|---------------------------------------------------------------------|
| <b>Material</b>                              | Body: Ceramic<br>Cap: Silver Plated Brass                           |
| <b>Product Marking</b>                       | Body: Brand Logo, Current Rating                                    |
| <b>Operating Temperature</b>                 | -55°C to 125°C with proper derating                                 |
| <b>Moisture Sensitivity Level</b>            | Level 1 J-STD-020                                                   |
| <b>Solderability</b>                         | MIL-STD-202, Method 208                                             |
| <b>Insulation Resistance (after Opening)</b> | MIL-STD-202, Method 302,<br>Test Condition A (10,000 ohms, Minimum) |

|                                     |                                                                                                                                            |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Thermal Shock</b>                | MIL-STD-202, Method 107,<br>Test Condition B, 5 cycles, -65°C to 125°C, 15 minutes @ each extreme                                          |
| <b>Mechanical Shock</b>             | MIL-STD-202, Method 213,<br>Test Condition I: Deenergized. 100G's peak amplitude, sawtooth wave 6ms duration, 3 cycles XYZ+xyz = 18 shocks |
| <b>Vibration</b>                    | MIL-STD-202, Method 201: 0.03" amplitude, 10-55 Hz in 1 min. 2 hrs. each XYZ=6hrs                                                          |
| <b>Moisture Resistance</b>          | MIL-STD-202, Method 106, 10 cycles                                                                                                         |
| <b>Salt Spray</b>                   | MIL-STD-202, Method 101,<br>Test Condition B (48hrs)                                                                                       |
| <b>Resistance to Soldering Heat</b> | MIL-STD-202, Method 210,<br>Test Condition B (10 sec at 260°C)                                                                             |

### Dimensions



### Part Numbering System



**\*Example**  
3.15 amp is 04853.15DR

### Packaging

| Packaging Option   | Packaging Specification         | Quantity | Quantity & Option Code |
|--------------------|---------------------------------|----------|------------------------|
| 24mm Tape and Reel | EIA-RS 481-1, (IEC 286, Part 3) | 1500     | DR                     |