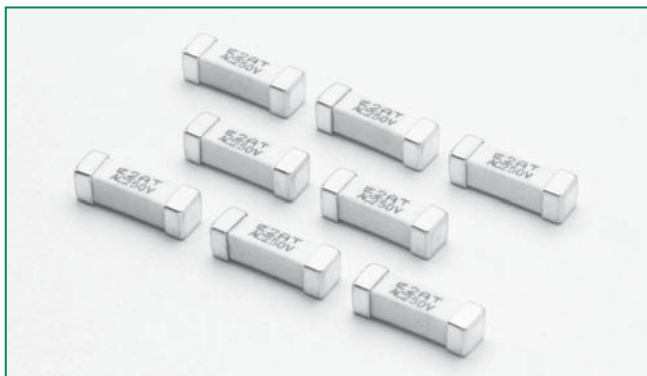




### 443 Series Fuse



#### Agency Approvals

| AGENCY | AGENCY FILE NUMBER | AMPERE RANGE   |
|--------|--------------------|----------------|
|        | E10480             | 0.500A - 5.00A |

#### Electrical Characteristics for Series

| % of Ampere Rating | Opening Time         |
|--------------------|----------------------|
| 100%               | 4 hours, Minimum     |
| 250%               | 120 seconds, Maximum |

#### Description

The 250V Nano<sup>2</sup> Fuse is a small square surface mount fuse that is designed to enable compliance with the RoHS directive. This product is fully compatible with lead-free solder alloy and higher temperature profiles associated with lead-free assembly.

#### Features

- 250 VAC voltage rating
- Time-Lag
- Available 0.50A – 5.00A
- RoHS Compliant
- Fully compatible with lead-free solder alloys and higher temperature profiles associated with lead-free assembly

#### Applications

- AC/DC power adaptor
- Telecom equipment system power
- Portable system built-in AC/DC converter
- High voltage DC/DC converter
- Lighting System
- LED Lighting

443 Series

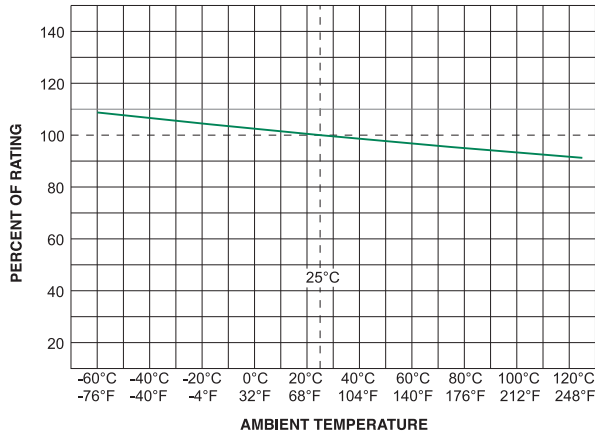
#### Electrical Specifications by Item

| 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) | Nominal Voltage Drop (mV) | Agency Approvals |
|-------------------|----------|------------------------|---------------------|--------------------------------|-------------------------------------------------------|---------------------------|------------------|
| 0.50              | .500     | 250                    | 50A @250VAC         | 0.600                          | 1.61                                                  | 448                       | x                |
| 0.75              | .750     | 250                    |                     | 0.275                          | 1.00                                                  | 285                       | x                |
| 1                 | 001.     | 250                    |                     | 0.180                          | 10.17                                                 | 234                       | x                |
| 1.50              | 01.5     | 250                    |                     | 0.100                          | 14.72                                                 | 196                       | x                |
| 2                 | 002.     | 250                    |                     | 0.052                          | 18.06                                                 | 154                       | x                |
| 2.50              | 02.5     | 250                    |                     | 0.035                          | 18.13                                                 | 139                       | x                |
| 3                 | 003.     | 250                    |                     | 0.028                          | 51.44                                                 | 113                       | x                |
| 3.50              | 03.5     | 250                    |                     | 0.019                          | 53.14                                                 | 98                        | x                |
| 4                 | 004.     | 250                    |                     | 0.016                          | 70.56                                                 | 81                        | x                |
| 5                 | 005.     | 250                    |                     | 0.0115                         | 127.79                                                | 80                        | 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. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options.

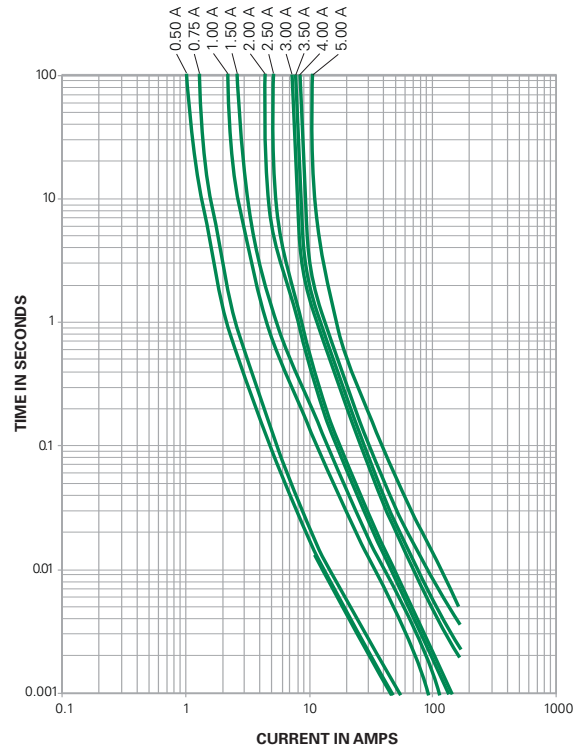
### Temperature Derating Curve



Note:

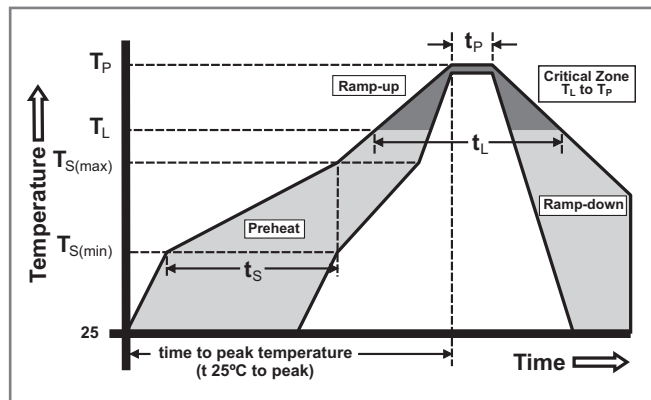
- Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

### 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 – 120 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 – 90 seconds                        |
| Peak Temperature ( $T_P$ )                             |                                    | 250 <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                                  |
| Wave Soldering Parameters                              |                                    | 260°C Peak Temperature, 3 seconds max. |



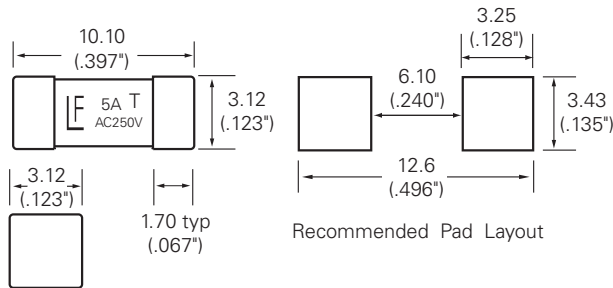
## Product Characteristics

|                                                  |                                                                                                                                                                                                                                                                          |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Materials</b>                                 | Body: Ceramic<br>Cap: Silver Plated Brass                                                                                                                                                                                                                                |
| <b>Product Marking</b>                           | Body: Brand Logo, Current Rating<br>Rated Voltage, T - C<br>Characteristic "T"                                                                                                                                                                                           |
| <b>Insulation Resistance</b><br>(after Opening)  | MIL-STD-202, Method 302,<br>Test Condition A (10,000 ohms,<br>Minimum)                                                                                                                                                                                                   |
| <b>Solderability</b>                             | MIL-STD-202, Method 208                                                                                                                                                                                                                                                  |
| <b>Resistance to Soldering Heat</b>              | MIL-STD-202, Method 210,<br>Test Condition B (10 sec at 260°C)                                                                                                                                                                                                           |
| <b>Moisture Sensitivity Level</b>                | Level 1 J-STD-020C                                                                                                                                                                                                                                                       |
| <b>PCB Recommendation for Thermal Management</b> | Min. copper layer thickness = 100um<br>Min. copper trace width = 10mm<br><br>Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 80°C in a 25°C ambient environment. |

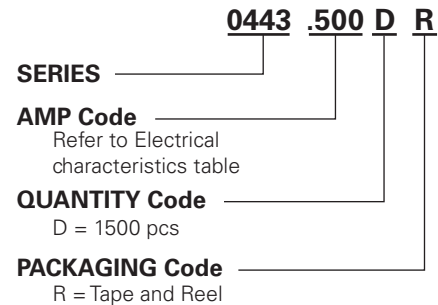
|                              |                                                                                |
|------------------------------|--------------------------------------------------------------------------------|
| <b>Operating Temperature</b> | -55°C to 125°C with proper derating                                            |
| <b>Thermal Shock</b>         | MIL-STD-202F, Method 107G,<br>Test Condition B (5 cycles -65°C to +125°C)      |
| <b>Vibration</b>             | MIL-STD-202F, Method 201A<br>(10-55 Hz)                                        |
| <b>Moisture Resistance</b>   | MIL-STD-202, Method 106,<br>High Humidity (90-98%RH), Heat (65°C)              |
| <b>Salt Spray</b>            | MIL-STD-202F, Method 101,<br>Test Condition B                                  |
| <b>Mechanical Shock</b>      | MIL-STD-202, Method 213,<br>Test Condition I (100 G's peak for 6 milliseconds) |

443 Series

## Dimensions



## Part Numbering System



**Example:**  
1.5 amp product is  
0443 **01.5** D R (0.5 amp  
product shown above).

## Packaging

| Packaging Option   | Packaging Specification        | Quantity | Quantity & Packaging Code |
|--------------------|--------------------------------|----------|---------------------------|
| 24mm Tape and Reel | EIA-RS 481-2 (IEC 286, part 3) | 1500     | DR                        |

