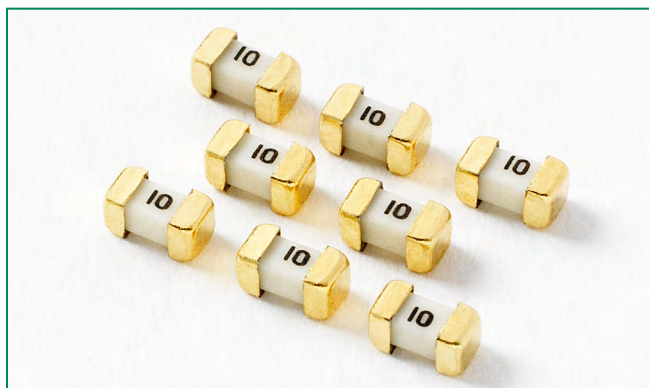


458 Series Fuse



Description

The 458 Series Nano² Fuse is an ultra-small, square surface mount fuse designed to support a variety of space constrained overcurrent protection applications. Offering a 1206 size footprint, it is the smallest wire-in-air type surface mount fuse offered by Littelfuse.


Features

- Surface Mount Fuse
- Fully compatible with lead free soldering profiles
- RoHS Compliant and Halogen-Free
- Available in ratings of 1 to 10 Amperes

Applications

- Notebook PC
- LCD backlight inverter
- LCD Panel
- DC/DC converter
- Battery Pack
- Car Navigation System
- Network Equipment
- Telecom Equipment
- Electronic Signage
- Portable Consumer Electronics

Agency Approvals

| AGENCY | AGENCY FILE NUMBER | AMPERE RANGE |
|---|--------------------|--------------|
|  | E10480 | 1A–10A |

Electrical Characteristics for Series

| % of Ampere Rating | Opening Time |
|--------------------|--------------------|
| 100% | 4 hours, Minimum |
| 250% | 5 seconds, Maximum |

Additional Information



Datasheet




Resources



Samples

Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Marking | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Agency Approvals  |
|-------------------|----------|---------|------------------------|----------------------------|--------------------------------|---|---|
| 1.0 | 001. | 1 | 75V | 50A @ 75VDC 50A @ 48VAC | 0.180 | .168 | x |
| 1.25 | 1.25 | 1.25 | | | 0.125 | .313 | x |
| 1.5 | 01.5 | 1.5 | | | 0.099 | .548 | x |
| 1.6 | 01.6 | 1.6 | | | 0.092 | .562 | x |
| 2 | 002. | 2 | | | 0.0695 | .952 | x |
| 2.5 | 02.5 | 2.5 | | | 0.06 | 1.408 | x |
| 3 | 003. | 3 | | | 0.049 | 2.289 | x |
| 3.15 | 3.15 | 3.15 | | | 0.045 | 2.457 | x |
| 3.5 | 03.5 | 3.5 | | | 0.0375 | 4.00 | x |
| 4 | 004. | 4 | | | 0.032 | 4.832 | x |
| 5 | 005. | 5 | 63V | 50A @ 75VDC 50A @ 32VAC | 0.027 | 7.938 | x |
| 6.3 | 06.3 | 6.3 | | | 0.0192 | 14.37 | x |
| 7 | 007. | 7 | | | 0.0175 | 20.48 | x |
| 8 | 008. | 8 | | | 0.0058 | 13.448 | x |
| 10.0 | 010. | 10 | | | 0.00465 | 15.0 | x |

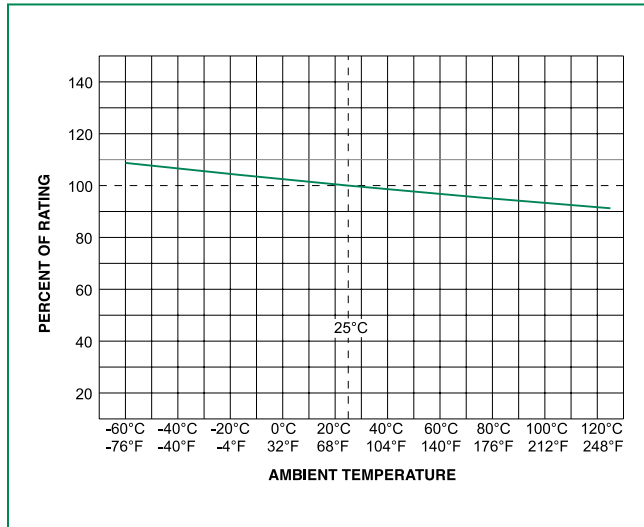
Notes:

1. I²t values stated for 8 msec opening time
2. Cold resistance measured at less than 10% of rated current at 25°C.
3. Agency Approval Table Key: X=Approved or Certified, P=Pending and Blank=Not Approved
4. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options.

Surface Mount Fuses

NANO²® > 458 Series 1206 Size Inrush Withstand Fuse

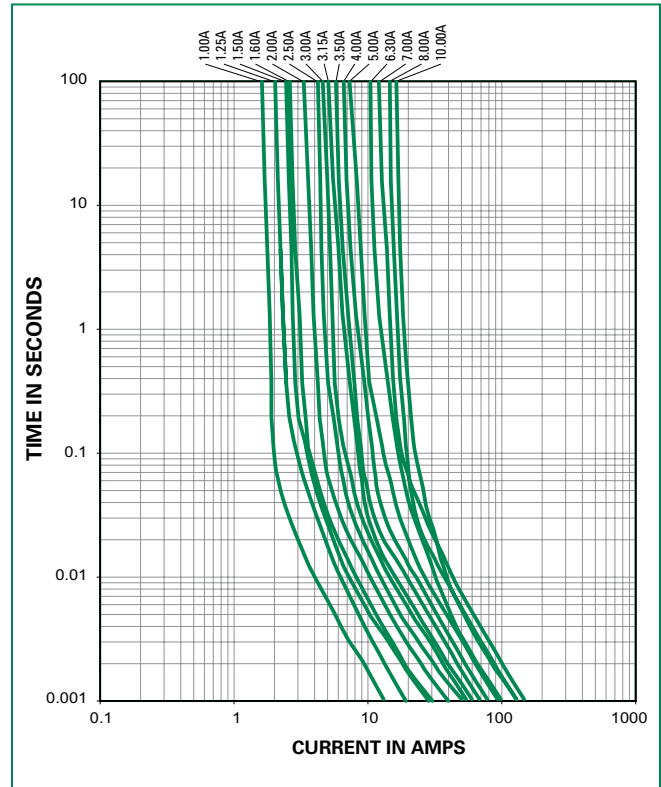
Temperature Re-rating Curve



Note:

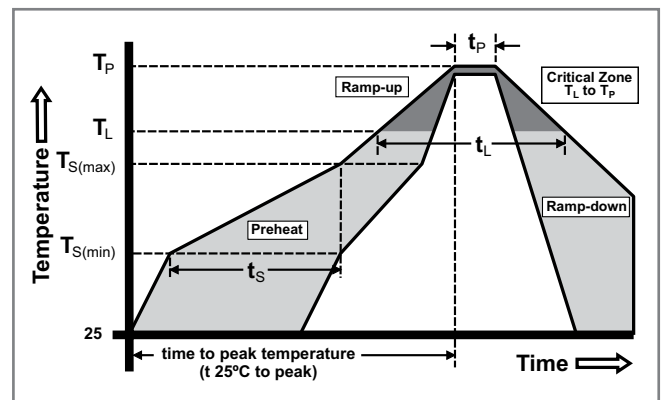
1. Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

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) | | 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 |

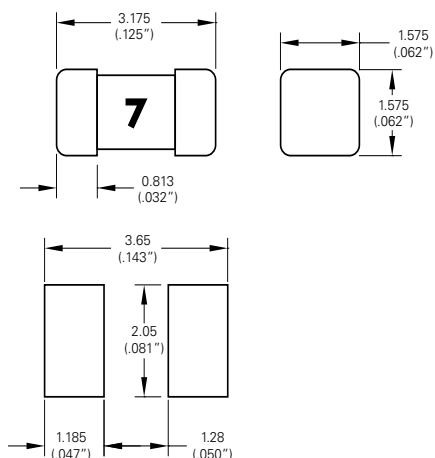


Product Characteristics

| | |
|---|--|
| Materials | Body: Ceramic Cap: Gold Plated Brass |
| Product Marking | Body: Current Rating (Refer to Electrical Characteristic table) |
| Insulation Resistance (after Opening) | MIL-STD-202, Method 302, Test Condition A (10,000 ohms, Minimum) |
| Solderability | MIL-STD-202, Method 208 |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C) |
| Moisture Sensitivity Level | Level 1 J-STD-020 |

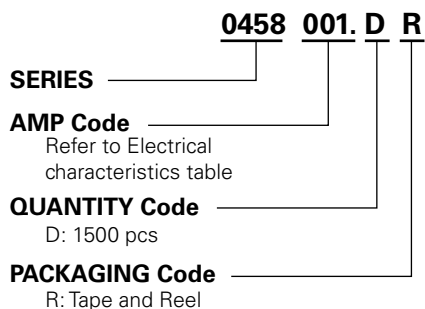
| | |
|------------------------------|---|
| Operating Temperature | -55°C to 125°C with proper derating |
| Thermal Shock | MIL-STD-202, Method 107, Test Condition B (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202, Method 201 (10-55 Hz) |
| Moisture Resistance | MIL-STD-202, Method 106, High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

Dimensions



Recommended Pad Layout

Part Numbering System



Example:
1.5 amp product is
0458 D R (1 amp
product shown above).

Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|-------------------|-------------------------|----------|---------------------------|
| 8mm Tape and Reel | EIA-RS 481-1 | 1500 | DR |