

443E Series Fuse



Description

The 443E Series is a Nano², 250 V fuse. It is a surface mount Universal Modular Fuse (UMF) that complies with IEC 60127-4. It is RoHS-compliant and fully compatible with lead-free solder alloy and higher temperature profiles associated with lead-free assembly.

Features

- 250 VAC/DC voltage rating with 200 A interrupting rating
- Slo-Blo® Fuse
- RoHS-compliant
- Fully compatible with leadfree solder alloys and higher temperature profiles associated with lead-free assembly

Benefits

- Avoids nuisance opening due to high inrush and surge current inherent in the system
- Suits high voltage applications requiring high interrupting current

Applications

- AC/DC power adaptor
- Telecom equipment system power
- Portable system built-in AC/DC converter

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|--------------------|--------------|
| | E242325 | 1.25A |
| | 40046623 | 1.25A |
| | CQC17012176681 | 1.25A |
| | E10480 | 1.25A |
| | - | 1.25A |

Electrical Characteristics

| % of Ampere Rating | Ampere Rating | Opening Time at 25°C |
|--------------------|---------------|----------------------|
| 100% | 1.25 A | 4 hours Minimum |
| 200% | 1.25 A | 120 secs Maximum |

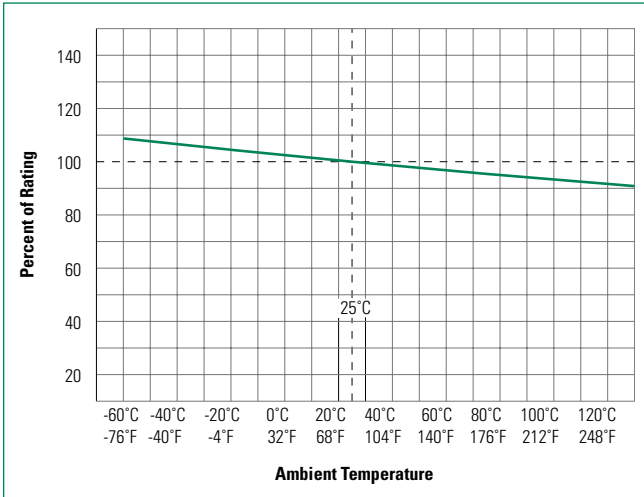
Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Max. Voltage Rating (V) | Interrupting Rating (AC/DC) | Nominal Cold Resistance ¹ (Ohms) | Nominal Melting I ² t (A ² Sec.) ² | Nominal Voltage Drop (mV) | Nominal Power Dissipation at Rated Current (W) | Agency Approval ³ | | | | |
|-------------------|----------|-------------------------|---------------------------------|---|---|---------------------------|--|------------------------------|---|---|---|---|
| | | | | | | | | | | | | |
| 1.25 | 1.25 | 250 | 200A @ 250VAC/ 200A @ 250VDC | 0.100 | 3.97 | 165 | 0.456 | x | x | x | x | x |

Note:

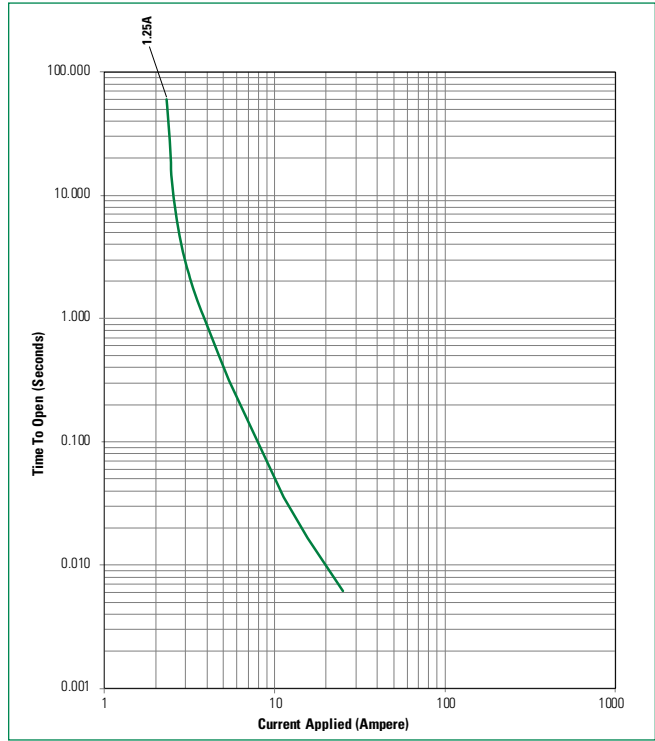
1. Nominal Cold Resistance measured at less than 10% of rated current at 23° C.
2. Nominal Melting I²t is measured at 10 the Ampere Rating (I_a)
3. Agency Approval Table key: X = Approved or Certified, P = Pending and Blank = Not Approved
4. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options

Temperature Re-rating Curve



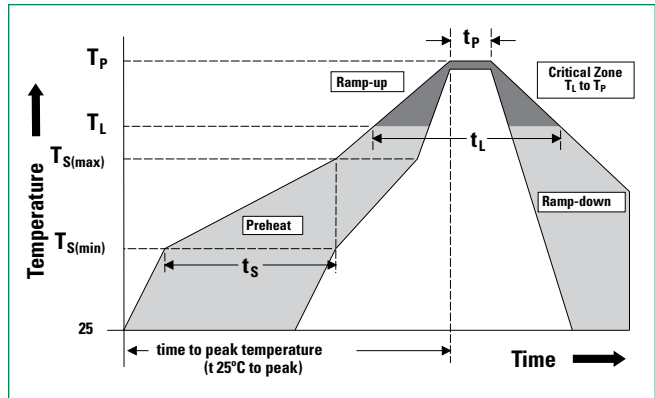
Note:
Re-rating depicted in this curve is in addition to the standard re-rating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters

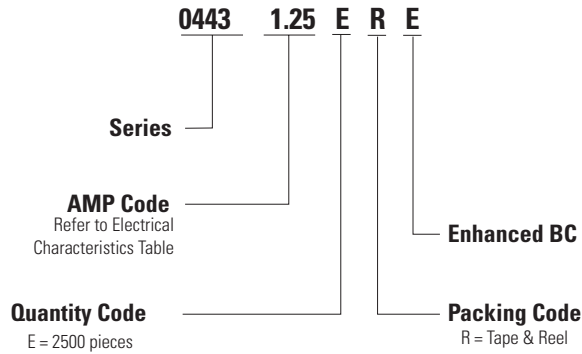
| | | |
|--|---|--------------------------|
| Reflow Condition | | Pb – free assembly |
| Pre Heat | - Temperature Min ($T_{s(min)}$) | 150° C |
| | - Temperature Max ($T_{s(max)}$) | 200° C |
| | - Time (Min to Max) (t_s) | 60 – 180 seconds |
| Average Ramp-up Rate (Liquidus Temp (T_L) to peak) | | 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 |
| Wave soldering | 260° C Peak Temperature, 3 seconds max. | |



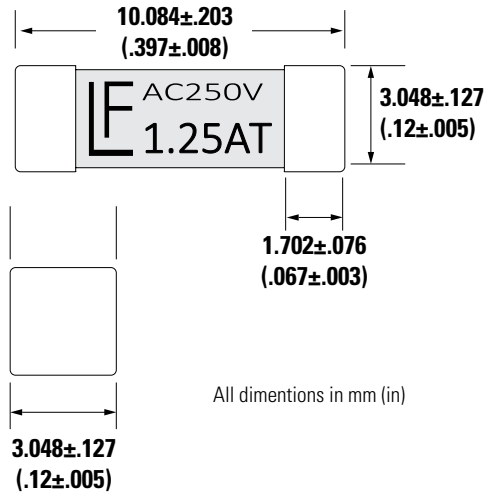
Product Characteristics

| | |
|---|---|
| Materials | Body: Ceramic Cap: Silver Plated Brass |
| Product Marking | Voltage rating, Ampere rating, T-Characteristic, "T" and Brand |
| Temperature Humidity Bias | MIL-STD-202, Method 103, (85° C, 85%RH with 10% hold current) |
| Solderability | MIL-STD-202, Method 208 (95% coverage) |
| Resistance to Soldering Heat | MIL-STD-202, Method 210 |
| Pulse Test | IEC 60127-1; 9.5 (25° C +/-5° C, pulse 100% rated current) |
| Terminal Strength Test | MIL-STD-202, Method 211, Test Condition A (5N force to the side for 60sec) |
| Endurance Test | IEC 60127-1; 9.4 (25° C +/-5° C, 100% rated current for 1 hour, stop current for 15 mins. 100 cycles. Test for voltage drop to determine maximum power dissipation) |
| Operating Temperature | -60° C to 130° C |
| Temperature Cycling | JESDD22 - A104 (-40° C to 125° C) |
| High Frequency Vibration | MIL-STD-202, Method 204 (55Hz – 2Hz, 10G) |
| Low Temperature Storage | MIL-STD-202, Method 108 (-40° C for 1000 hours) |
| High Temperature Storage | MIL-STD-202, Method 108 (125° C for 1000 hours) |
| Mechanical Shock | MIL-STD-202, Method 213, (50 G's peak for 11 milliseconds, halfsine waveform/10 – 55 Hz) |
| High Temperature Operating Life Test | JESD 22 - A108 (125° C rated current at any voltage <= to rated voltage); 1000H duration |

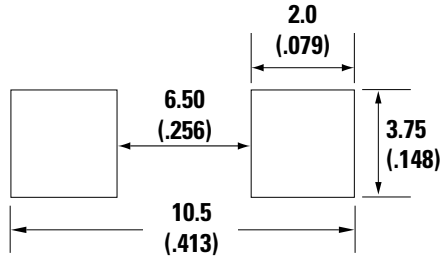
Part Numbering System



Dimensions



Recommended Pad Layout



Packaging

| Packaging Option | Form Factor | Packaging Specification | Quantity | Quantity & Packaging Code |
|--------------------|---------------|----------------------------|----------|---------------------------|
| 24mm Tape and Reel | Surface Mount | EIA-RS 481-2 (IEC 60286-3) | 2500 | ERE |