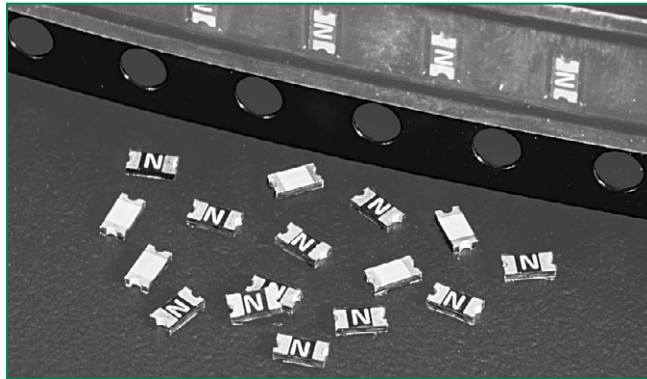


434 Series Fuse



Description

The 434 series fast-acting surface mount fuse series is an ultra small (0603 size) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

For RoHS compliant and lead-free design, please refer to the Littelfuse 467 series thin film fuse.

Features

- The SlimLine 0603 fuse is an extremely small, low profile design (0603 chip size) utilizing thin-film technology to achieve precise control of electrical characteristics.
- The lower height profile produces a flat surface for improved performance in pick-and-place operations and an alternate solution for height critical applications.

Applications

Secondary protection for space constrained applications such as:

- Cell phones
- Battery packs
- Digital cameras
- DVD players
- Hard disk drives.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|--------------------|--------------|
| | E10480 | 250mA - 3A |
| | LR29862 | 250mA - 3A |

Electrical Characteristics for Series

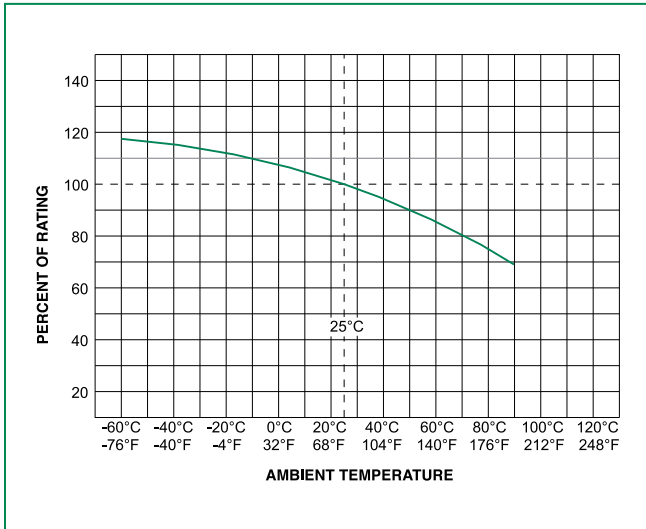
| % of Ampere Rating | Opening Time at 25°C |
|--------------------|----------------------|
| 100% | 4 hours, Minimum |
| 200% | 5 seconds, Maximum. |
| 300% | 0.2 seconds, Maximum |

Electrical Specifications by Item

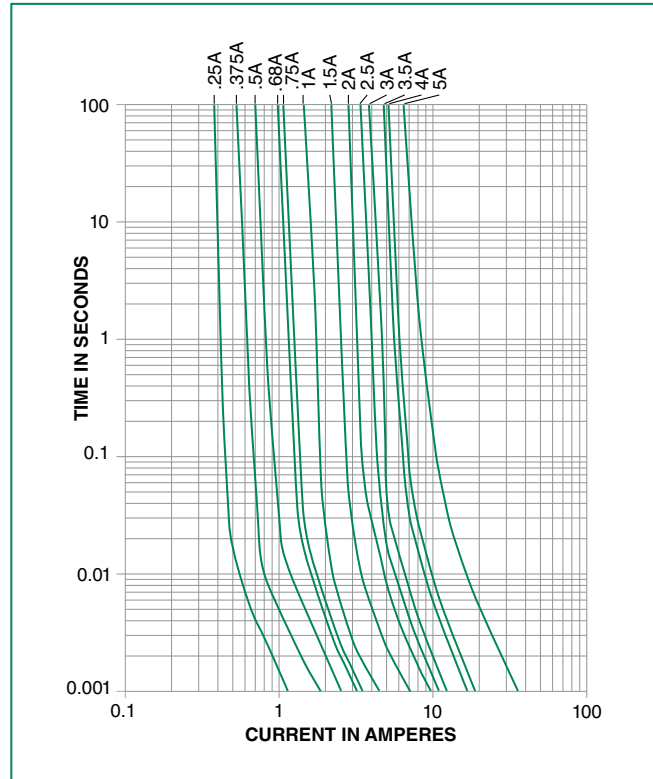
| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Agency Approvals | |
|-------------------|----------|------------------------|---------------------|--------------------------------|---|------------------|---|
| | | | | | | | |
| 0.250 | .250 | 32 | 50A @32 V AC/DC | 0.3750 | 0.0030 | x | x |
| 0.375 | .375 | 32 | | 0.2650 | 0.0053 | x | x |
| 0.500 | .500 | 32 | | 0.1903 | 0.0087 | x | x |
| 0.680 | .680 | 32 | | 0.1250 | 0.0109 | x | x |
| 0.750 | .750 | 32 | | 0.1140 | 0.0171 | x | x |
| 1.00 | 001. | 32 | | 0.0720 | 0.0212 | x | x |
| 1.25 | 1.25 | 32 | | 0.0540 | 0.0320 | x | x |
| 1.50 | 01.5 | 32 | 35A @32 V AC/DC | 0.0480 | 0.0526 | x | x |
| 1.75 | 1.75 | 32 | | 0.0390 | 0.0661 | x | x |
| 2.00 | 002. | 32 | | 0.0360 | 0.1040 | x | x |
| 2.50 | 02.5 | 32 | | 0.0280 | 0.1750 | x | x |
| 3.00 | 003. | 32 | | 0.0230 | 0.1980 | x | x |
| 3.50 | 03.5 | 32 | | 0.0190 | 0.2650 | x | x |
| 4.00 | 004. | 32 | | 0.0170 | 0.3520 | x | x |
| 5.00 | 005. | 32 | | 0.0130 | 1.2970 | x | x |

1. Measured at 10% of rated current, 25°C.
2. Measured at rated voltage.

Temperature Derating Curve

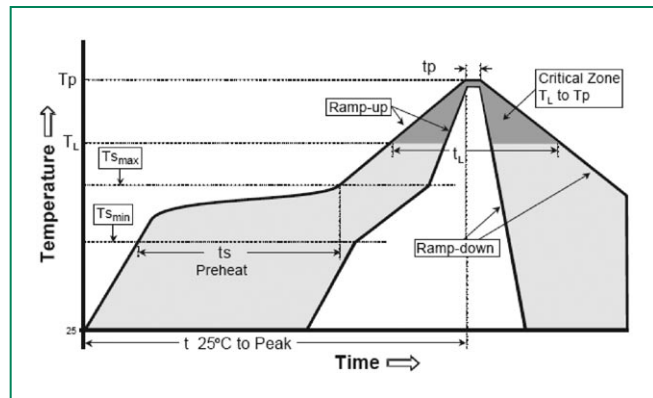


Average Time Current Curves



Soldering Parameters - Wave 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 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 – 150 seconds |
| Peak Temperature (T_p) | | 250 ^{+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 |

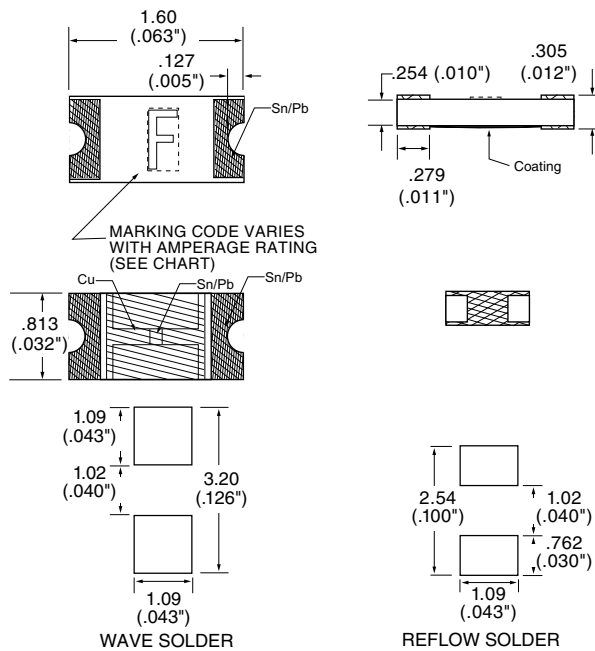


Product Characteristics

| | |
|------------------------------|---|
| Materials | Body: Epoxy Substrate Terminations: 100% Tin over Nickel over Copper Element Cover Coat: Conformal Coating |
| Operating Temperature | - 55°C to 90°C. Consult temperature derating curve chart. For operation above 90°C contact Littelfuse. |
| Humidity | MIL-STD-202F Method 103B Condition D |

| | |
|--|--|
| Thermal Shock | Withstands 5 cycles of - 55°C to 125°C |
| Vibration | Per MIL-STD-202F |
| Insulation Resistance (After Opening) | Greater than 10,000 ohms |
| Resistance to Soldering Heat | Withstands 60 seconds above 200°C and up to 260°C, maximum |

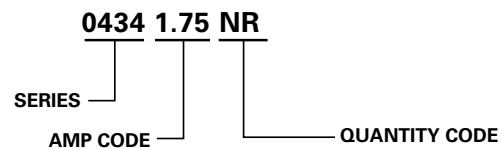
Dimensions



Part Marking

| Amp Code | Marking Code |
|----------|--------------|
| .250 | D |
| .375 | E |
| .500 | F |
| .680 | X |
| .750 | G |
| 001. | H |
| 1.25 | J |
| 01.5 | K |
| 1.75 | L |
| 002. | N |
| 02.5 | O |
| 003. | P |
| 03.5 | R |
| 004. | S |
| 005. | T |

Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|-------------------|--------------------------------|----------|---------------------------|
| 8mm Tape and Reel | EIA RS-481-2 (IEC 286, part 3) | 5000 | NR |