

Description

The 435 series fast-acting surface mount fuse series is an ultra small (EIA 0402) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held and portable electronic devices.

This series of devices are 100% lead-free and meet the requirements of the RoHS directive.

Features

- 35A interrupt rating at 32VDC
- Small size with current ratings of 0.25 to 5.0 amperes
- RoHS compliant and lead-free
- Fuse opens consistently in <5sec at 200% rated current for maximum protection of sensitive circuits
- Enhanced Breaking Capacity, High I²t

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|--------------------|--------------|
| | E10480 | 0.250 – 5.0A |
| | 029862_0_000 | 0.250 – 5.0A |

Applications

Secondary protection for space constrained applications such as:

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

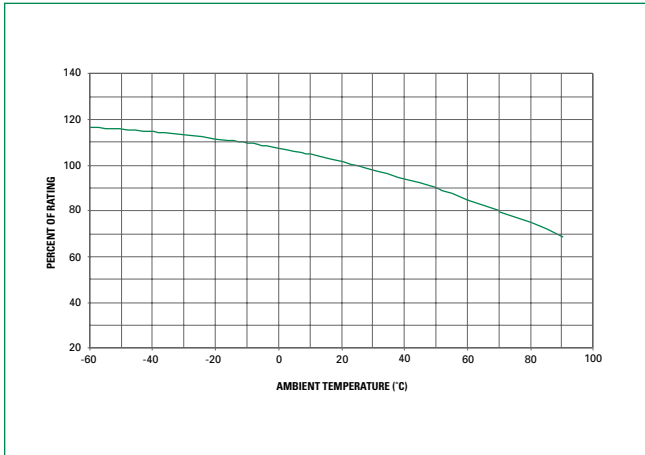
Electrical Characteristics

| % of Ampere Rating | Opening Time |
|--------------------|----------------------|
| 100% | 4 hours, Minimum |
| 200% | 5 seconds, Maximum |
| 300% | 0.2 seconds, Maximum |

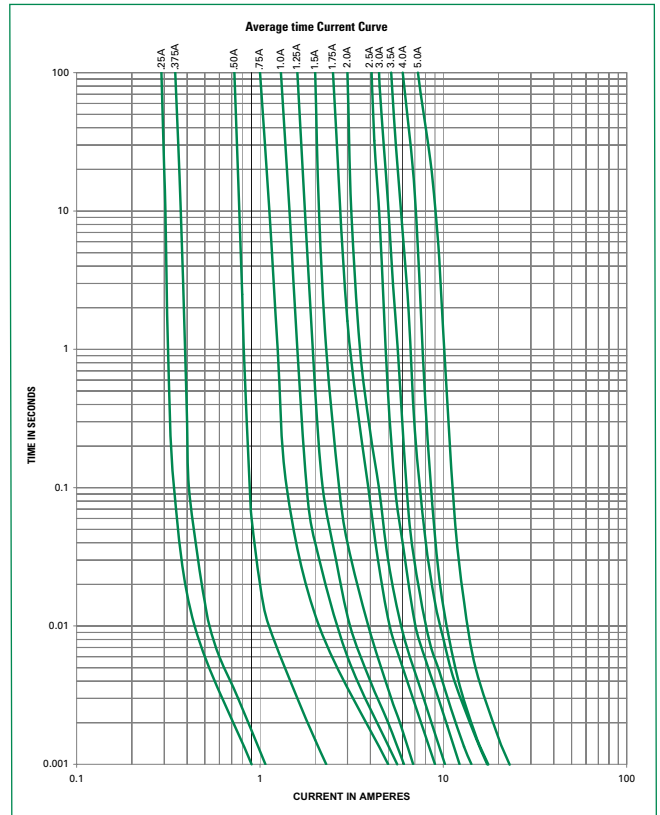
Electrical Characteristics

| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Nom Voltage Drop (mV) | Nom Power Dissipation (W) | Agency Approvals | |
|-------------------|----------|------------------------|---------------------|--------------------------------|---|-----------------------|---------------------------|------------------|---|
| | | | | | | | | | |
| 0.250 | .250 | 32 | 35 @ 32VDC | 0.220 | 0.0025 | 61.82 | 0.01546 | x | x |
| 0.375 | .375 | 32 | | 0.185 | 0.0035 | 84.64 | 0.03174 | x | x |
| 0.500 | .500 | 32 | | 0.150 | 0.0053 | 93.35 | 0.04668 | x | x |
| 0.750 | .750 | 32 | | 0.105 | 0.0120 | 101.84 | 0.07638 | x | x |
| 1.00 | 001. | 32 | | 0.072 | 0.0200 | 87.45 | 0.08745 | x | x |
| 1.25 | 1.25 | 32 | | 0.060 | 0.035 | 96.37 | 0.12046 | x | x |
| 1.50 | 01.5 | 32 | | 0.047 | 0.056 | 86.70 | 0.13005 | x | x |
| 1.75 | 1.75 | 32 | | 0.038 | 0.075 | 81.13 | 0.14198 | x | x |
| 2.00 | 002. | 32 | | 0.030 | 0.100 | 70.62 | 0.1412 | x | x |
| 2.50 | 02.5 | 32 | | 0.0185 | 0.1560 | 55.25 | 0.13813 | x | x |
| 3.00 | 003. | 32 | | 0.0165 | 0.2032 | 60.58 | 0.1874 | x | x |
| 3.50 | 03.5 | 32 | | 0.0135 | 0.3017 | 57.84 | 0.20244 | x | x |
| 4.00 | 004. | 32 | | 0.0115 | 0.3084 | 57.00 | 0.22800 | x | x |
| 5.00 | 005. | 32 | | 0.0085 | 0.5310 | 52.44 | 0.26220 | x | x |

Temperature Derating Curve

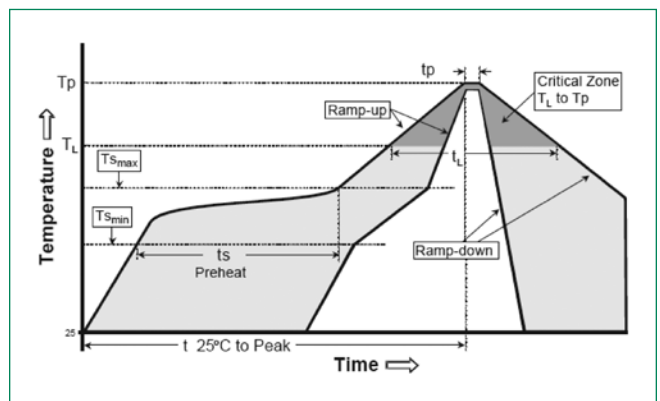


Average Time Current Curves



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 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 | |

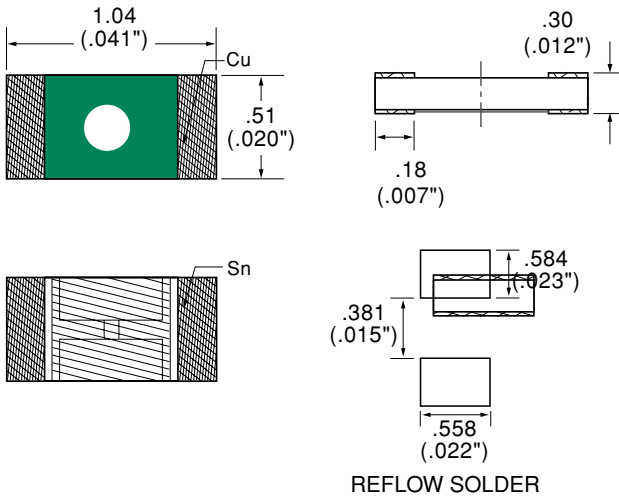


Product Characteristics

| | |
|------------------------------|--|
| Material | Body: Epoxy/Glass Substrate Terminations: Copper/Nickel/Tin Device Weight: 0.316mg |
| Terminal Strength | MIL-STD-202F Method 211A, Test Condition A |
| Insulation Resistance | After Opening: Greater than 10,000Ohms |

| | |
|------------------------------|--|
| Operating Temperature | -55°C to 90°C |
| Thermal Shock | Withstands 5 Cycles at -55°C to +125°C) |
| Vibration | MIL-STD-202F |

Dimensions

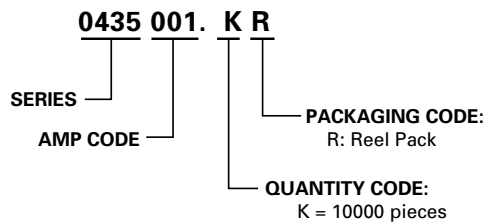


Part Marking System

Marking Codes:

| | | | |
|--|------|--|------|
| | .250 | | 1.0 |
| | .375 | | 1.25 |
| | .5 | | 1.5 |
| | .750 | | 1.75 |
| | 2.0 | | 2.5 |
| | 3.0 | | 3.5 |
| | 4.0 | | 5.0 |

Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|-------------------|-----------------------------|----------|---------------------------|
| 8mm Tape and Reel | EIA-481-1 (IEC 286, part 3) | 10000 | KR |