

429 Series 1206 Fast-Acting Fuse



Description



The 429 Series Fast-Acting SMF is a small (1206 size) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

This series is Halogen-Free, Lead-Free and meets the requirements of the RoHS directive.

Features

- RoHS compliant and Lead-Free 7A device available-add 'L' suffix to part number.
- Halogen-Free 7A device available-add 'HF' suffix to the part number
- **For new designs up to 5A please consult the 433 or 466 Series**

Agency Approvals

| AGENCY | AGENCY FILE NUMBER | AMPERE RANGE |
|---|--------------------|--------------|
|  | E10480 | 7A |
|  | 29862 | 7A |

Electrical Characteristics for Series

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

Applications

Secondary protection for space constrained applications such as:

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

Additional Information



Datasheet





Resources



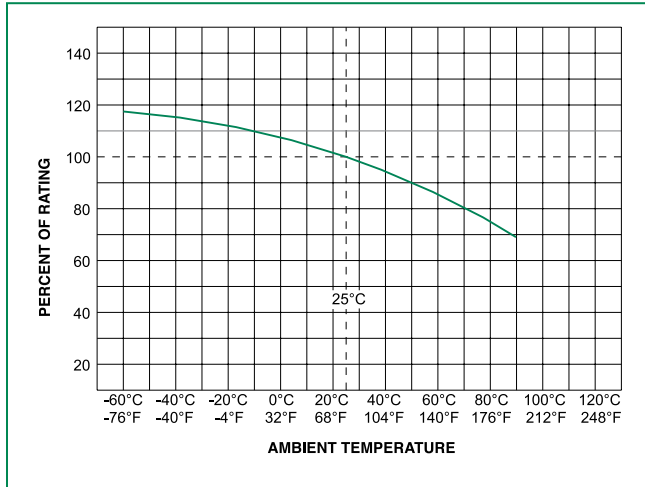
Samples

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 | |
|-------------------|----------|------------------------|---------------------|--------------------------------|---|---|---|
| | | | | | |  |  |
| 7.00 | 007. | 24 | 35A @24VAC/VDC | 0.009 | 4.900 | x | x |

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

Temperature Re-rating Curve



Note:

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

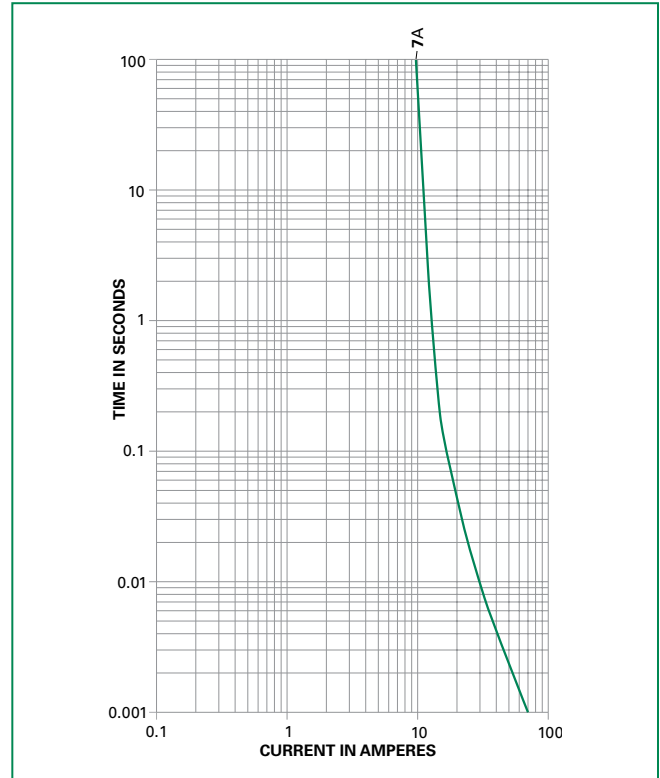
Example:

For continuous operation at 70 degrees celsius, the fuse should be derated as follows:

$$I = (0.75)(0.80)I_{RAT} = (0.60)I_{RAT}$$

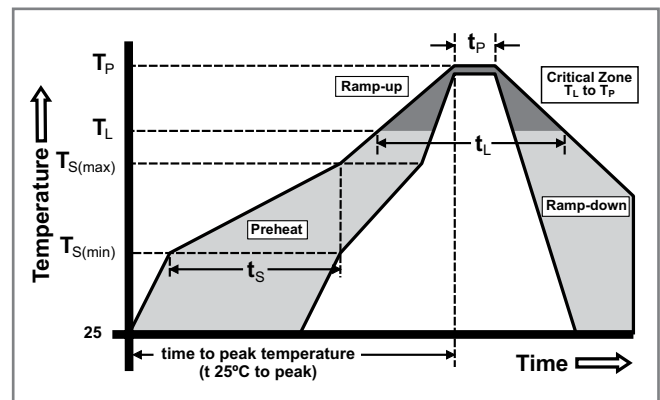
2. The temperature derating curve represents the nominal conditions. For questions about temperature derating curve, please consult Littelfuse technical support for assistance.

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 |



| | |
|----------------|------------------------|
| Wave Soldering | 260°C, 10 seconds max. |
|----------------|------------------------|

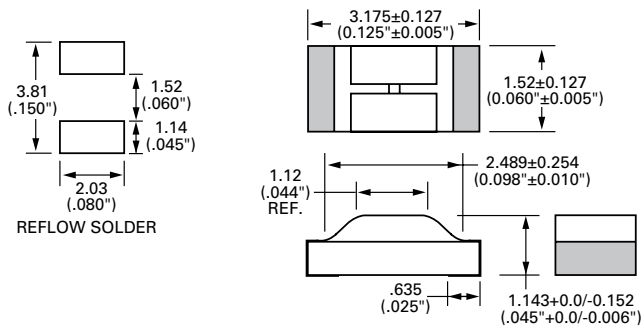
Product Characteristics

| | |
|------------------------------|---|
| Materials | <p>Body: Epoxy Substrate Terminations, RoHS Compliant Device (429L): 100% Tin over Nickel over Copper Element Cover Coat: Conformal Coating NOTE: Do not use alcohol-based cleaners or solvents with 429 Series Thin-Film Fuses as it may damage the coating.</p> |
| Operating Temperature | <p>– 55°C to 90°C. Consult temperature re-rating chart. For operation above 90°C contact Littelfuse.</p> |
| Thermal Shock | Withstands 5 cycles of – 55°C to 125°C |

| | |
|--|--|
| Humidity | MIL-STD-202, Method 103 Condition D |
| Vibration | Withstands 10 – 55 Hz per MIL-STD-202, Method 201 and 10-2000 Hz at 20 g's per MIL-STD-202, Method 204, Condition D. |
| Insulation Resistance (After Opening) | Greater than 10,000 ohms |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition D |

Dimensions

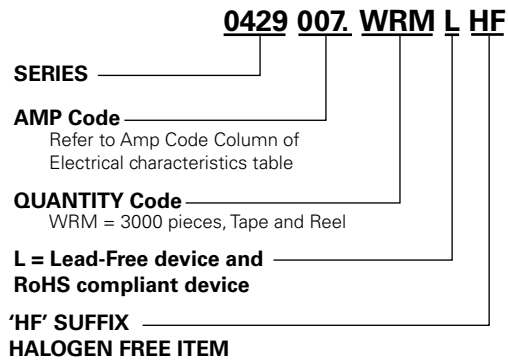
RECOMMENDED PAD LAYOUTS



Part Marking System

| Series | Marking Code |
|--------|--------------|
| 429L | 7 |

Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|------------------------|------------------------------------|----------|---------------------------|
| Tape & Reel – 8mm tape | EIA-481 Rev. D (IEC 60286, part 3) | 3000 | WRM |