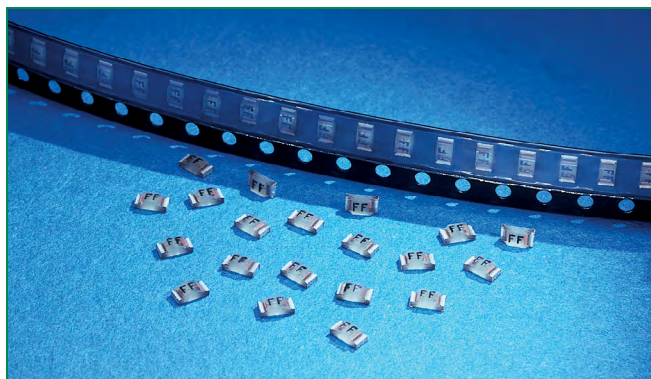


## 429 Series 1206 Fast-Acting Fuse



### 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    |

### Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> 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.

### 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**

### Applications

Secondary protection for space constrained applications such as:

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

### Additional Information



Datasheet

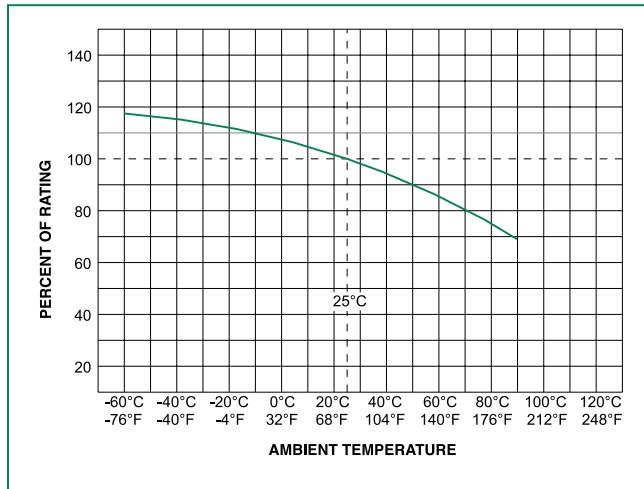


Resources



Samples

### Temperature Re-rating Curve



Note:

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

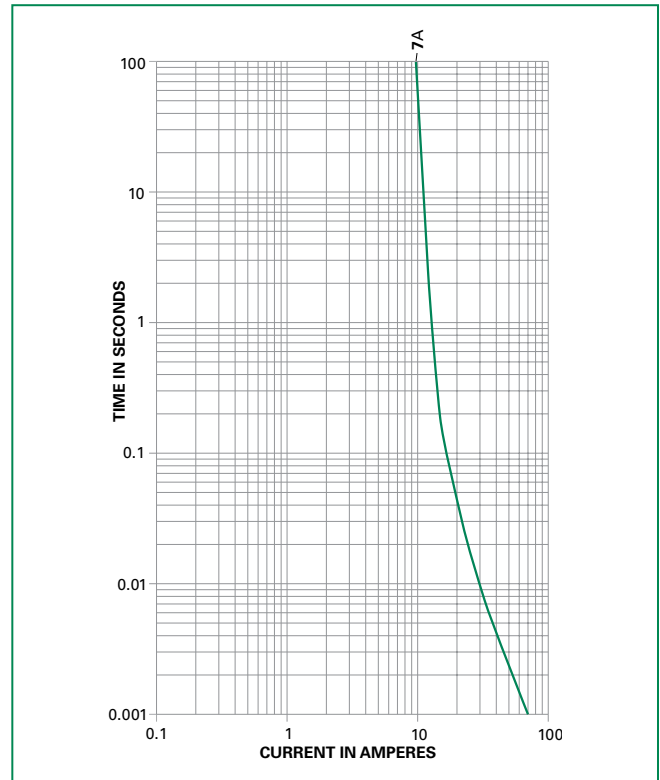
Example:

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

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

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

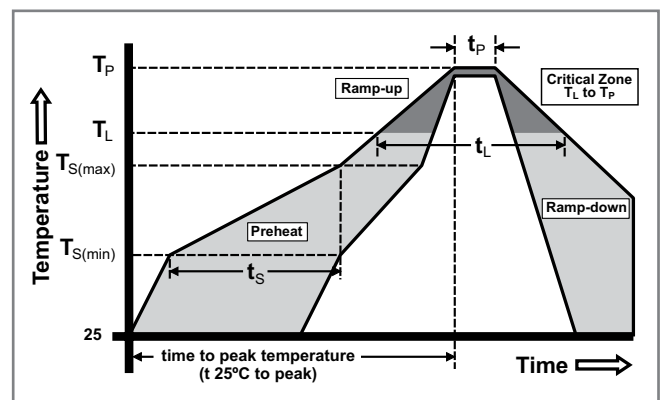
### Average Time Current Curves



### 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 $\pm$ 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. |
|----------------|------------------------|



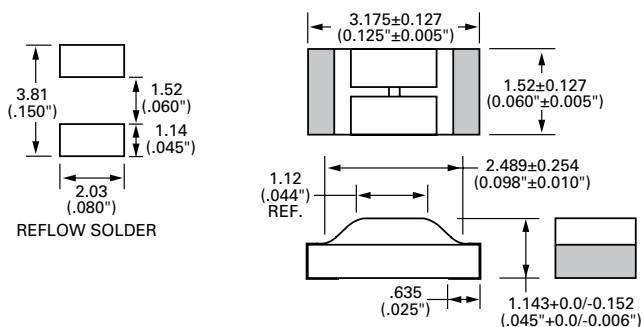
## Product Characteristics

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

|                                              |                                                                                                                      |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Humidity</b>                              | MIL-STD-202, Method 103 Condition D                                                                                  |
| <b>Vibration</b>                             | 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. |
| <b>Insulation Resistance (After Opening)</b> | Greater than 10,000 ohms                                                                                             |
| <b>Resistance to Soldering Heat</b>          | MIL-STD-202, Method 210, Condition D                                                                                 |

## Dimensions

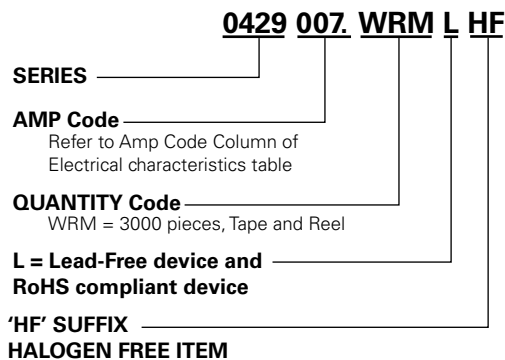
### RECOMMENDED PAD LAYOUTS



## 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                       |