

Surface Mount Fuses

Thin Film > 1206 Size > Very Fast-Acting > 466 Series

466 Series 1206 Fast-Acting Fuse



Agency Approvals

| AGENCY | AGENCY FILE NUMBER | AMPERE RANGE |
|--------|--------------------|--------------|
| | E10480 | 0.125A - 5A |
| | 29862 | 0.125A - 5A |

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 |

Additional Information



Datasheet



Resources



Samples

Description

The 466 Series Fast-Acting Surface Mount Fuse (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 100% lead-free and meets the requirements of the RoHS directive. New Halogen-Free 466 Series fuses are available to order using the "HF" suffix. See Part Numbering section for additional information.

Features

- Product is compatible with lead-free solders and higher temperature profiles
- Product is marked on top surface with code to allow amperage rating identification without testing
- Low profile for height sensitive applications
- Flat top surface for pick-and-place operations
- Element-covering material is resistant to industry standard cleaning operations
- Lead-free, Halogen-free and RoHS compliant

Applications

Secondary protection for space constrained applications:

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

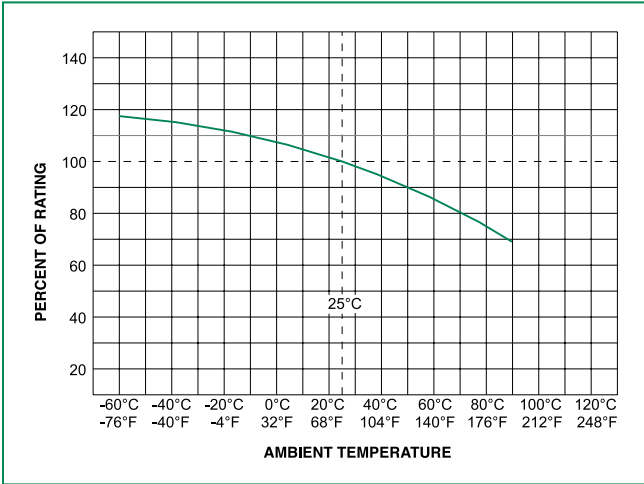
Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Nom Voltage Drop (mV) | Nom Power Dissipation (W) | Agency Approvals | |
|-------------------|----------|------------------------|---------------------|--------------------------------|---|-----------------------|---------------------------|------------------|---|
| | | | | | | | | | |
| 0.125 | .125 | 125 | 50A @125 V AC/DC | 3.925 | 0.00064 | 634.37 | 0.0793 | x | x |
| 0.200 | .200 | 125 | | 1.100 | 0.00055 | 254.28 | 0.0509 | x | x |
| 0.250 | .250 | 125 | | 0.691 | 0.0022 | 207.01 | 0.0518 | x | x |
| 0.375 | .375 | 125 | | 0.351 | 0.0045 | 169.18 | 0.0634 | x | x |
| 0.500 | .500 | 63 | | 0.248 | 0.0060 | 158.47 | 0.0792 | x | x |
| 0.750 | .750 | 63 | 50A @63 V AC/DC | 0.106 | 0.0276 | 98.65 | 0.0740 | x | x |
| 1.00 | 001. | 63 | | 0.075 | 0.0423 | 79.97 | 0.0800 | x | x |
| 1.25 | 1.25 | 63 | | 0.057 | 0.0640 | 85.71 | 0.1071 | x | x |
| 1.50 | 01.5 | 63 | | 0.046 | 0.1103 | 82.97 | 0.1244 | x | x |
| 1.75 | 1.75 | 63 | | 0.038 | 0.1835 | 80.73 | 0.1413 | x | x |
| 2.00 | 002. | 63 | 50A @32 V AC/DC | 0.030 | 0.2326 | 78.73 | 0.1575 | x | x |
| 2.50 | 02.5 | 32 | | 0.023 | 0.3516 | 76.99 | 0.1925 | x | x |
| 3.00 | 003. | 32 | | 0.019 | 0.5760 | 75.99 | 0.2280 | x | x |
| 4.00 | 004. | 32 | | 0.014 | 1.764 | 74.50 | 0.2980 | x | x |
| 5.00 | 005. | 32 | | 0.011 | 2.500 | 73.75 | 0.3688 | x | x |

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

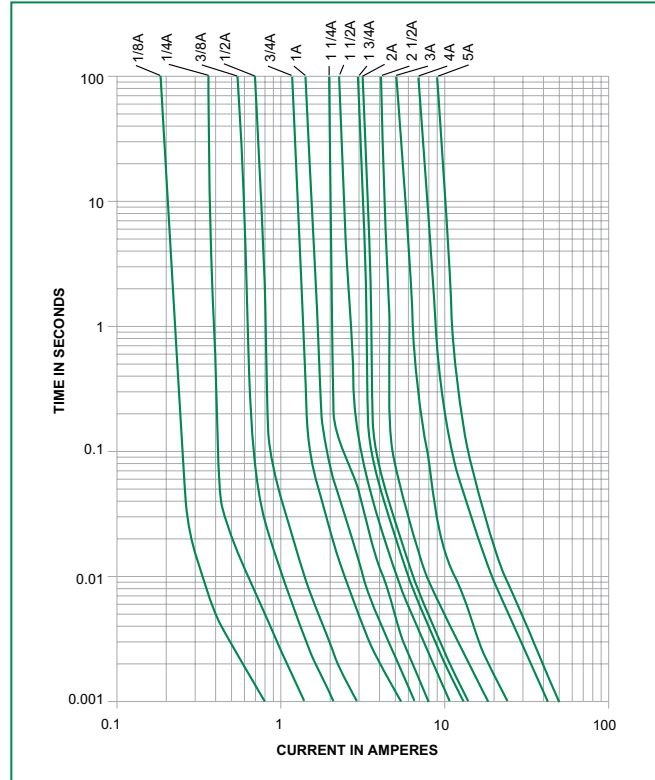
2. Measured at rated voltage.

Temperature Re-rating Curve



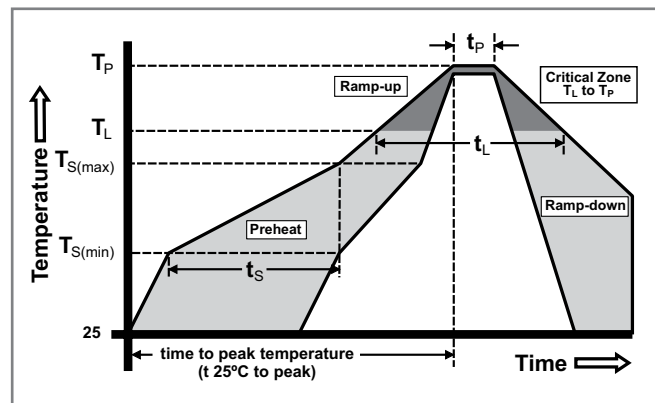
- Note:
1. Re-rating depicted in this curve is in addition to the standard re-rating of 25% for continuous operation.
- Example:
- For continuous operation at 70 degrees celsius, the fuse should be rerated as follows:
 $I = (0.75)(0.80)I_{RAT} = (0.60)I_{RAT}$
2. The temperature derating curve represents 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 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, 10 seconds max. |
|----------------|------------------------|

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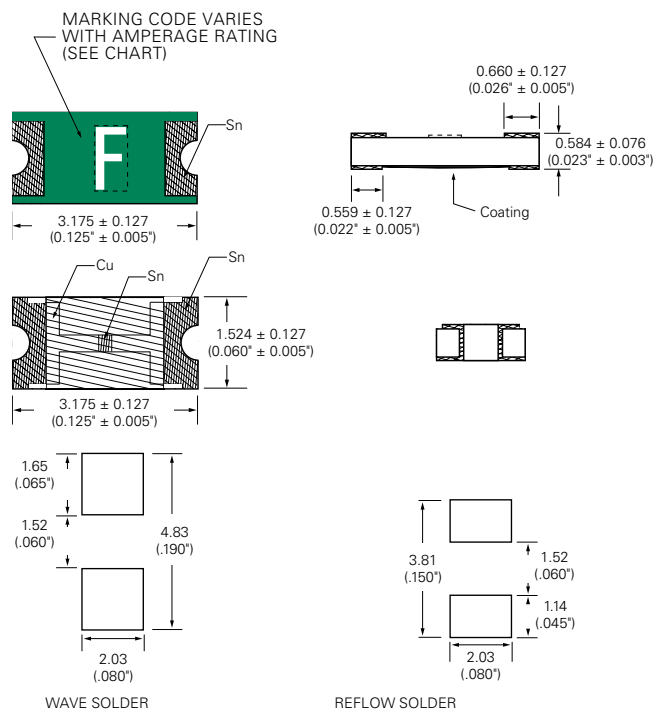
Product Characteristics

| | |
|--|---|
| Materials | Body: Advanced High Temperature Substrate Terminations: 100% Tin over Nickel over Copper Element Cover Coat: Conformal Coating |
| Operating Temperature | - 55°C to 90°C. Consult temperature re-rating curve chart. |
| Thermal Shock | Withstands 5 cycles of -55°C to 125°C |
| Humidity | MIL-STD-202, Method 103, Condition D |
| Vibration | MIL-STD-202, Method 201 |
| Insulation Resistance (After Opening) | Greater than 10,000 ohms |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition D |

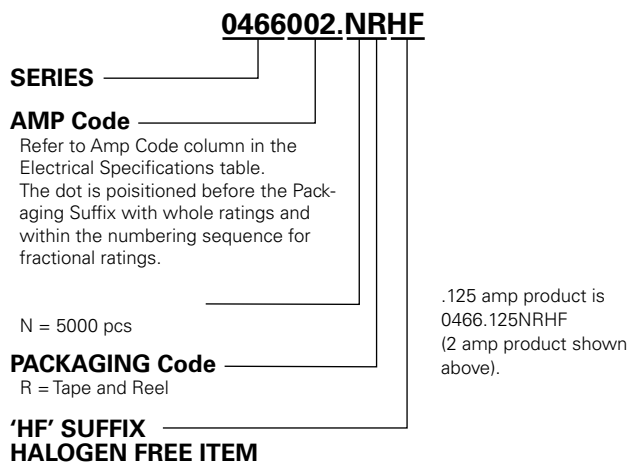
Part Marking System

| Amp Code | Marking Code |
|----------|--------------|
| .125 | B |
| .200 | C |
| .250 | D |
| .375 | E |
| .500 | F |
| .750 | G |
| 001. | H |
| 1.25 | J |
| 01.5 | K |
| 1.75 | L |
| 002. | N |
| 02.5 | O |
| 003. | P |
| 004. | S |
| 005. | T |

Dimensions



Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|-------------------|------------------------------------|----------|---------------------------|
| 8mm Tape and Reel | EIA-481 Rev. D (IEC 60286, part 3) | 5000 | NR |