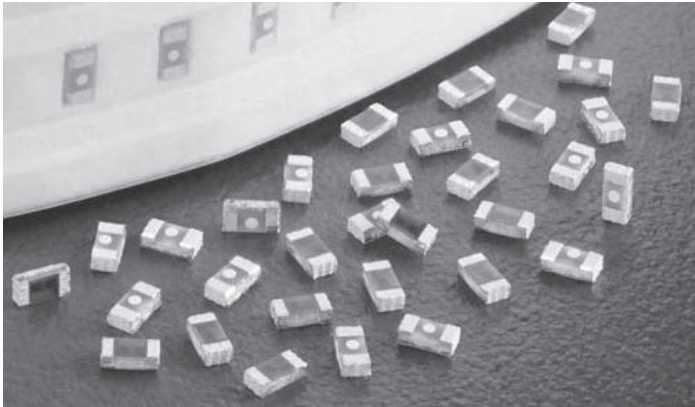


为您的产品保驾护航

PRODUCT DATASHEET

PTC Devices · Surface Mount

JFC0402TS Series Fuse





Description

The JFC0402TS Series are fast-acting surface mount thin-film fuses. Their ultra-small size (0402 size) makes them ideal for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

This series is 100% lead-free and meet the requirements of the RoHS directive. New Halogen-Free 497 Series fuses are available-to order use the " HF" suffix. See Part Numbering section for additional information.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|--------------------|--------------|
|  | pending | 0.250 - 5.0A |
|  | pending | 0.250 - 5.0A |

Features

- 35A interrupt rating at 32VDC
- Small size with current ratings of 0.25 to 5.0 amperes
- RoHS compliant, lead-free and halogen-free
- Maximum protection of sensitive circuits as fuses are designed to open consistently in <5sec at 200% overload
- Enhanced Breaking Capacity, High I²t

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:

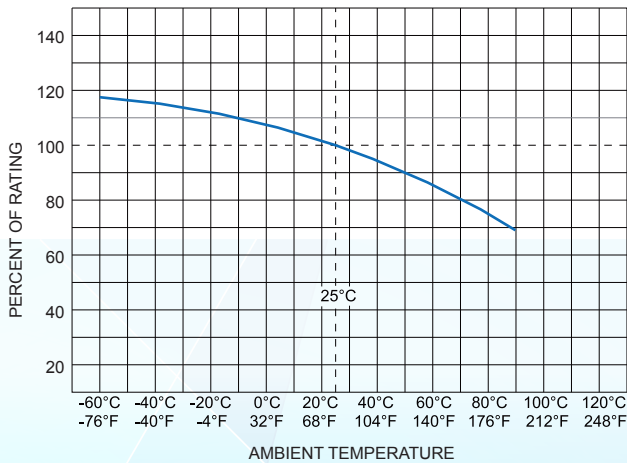
- Cell phones
- Battery packs
- Digital cameras
- DVD players
- Hard disk drives

Electrical Specifications by Item

| Part No. | Rated Current (A) | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Nom Voltage Drop (mV) | Nom Power (W) | Agency Approvals | |
|----------------|-------------------|------------------------|---------------------|--------------------------------|---|-----------------------|---------------|------------------|---------------------------------|
| | | | | | | | | UL US | SAFETY DEPARTMENT TYPE APPROVED |
| JFC0402-0250TS | 0.250 | 32 | 35A @32V DC | 0.400 | 0.0025 | 110.53 | 0.027635 | × | × |
| JFC0402-0375TS | 0.375 | 32 | | 0.1930 | 0.0035 | 84.64 | 0.03174 | × | × |
| JFC0402-0500TS | 0.500 | 32 | | 0.1600 | 0.0053 | 93.35 | 0.04668 | × | × |
| JFC0402-0750TS | 0.750 | 32 | | 0.1050 | 0.0120 | 101.84 | 0.07638 | × | × |
| JFC0402-1100TS | 1 | 32 | | 0.0730 | 0.0200 | 87.45 | 0.08745 | × | × |
| JFC0402-1125TS | 1.25 | 32 | | 0.0600 | 0.0350 | 96.37 | 0.12046 | × | × |
| JFC0402-1150TS | 1.5 | 32 | | 0.0470 | 0.0560 | 86.70 | 0.13005 | × | × |
| JFC0402-1175TS | 1.75 | 32 | | 0.0390 | 0.0750 | 81.13 | 0.14198 | × | × |
| JFC0402-1200TS | 2 | 32 | | 0.0300 | 0.1000 | 70.62 | 0.14120 | × | × |
| JFC0402-1250TS | 2.5 | 32 | | 0.0185 | 0.1560 | 55.25 | 0.13813 | × | × |
| JFC0402-1300TS | 3 | 32 | | 0.0165 | 0.2032 | 60.58 | 0.18740 | × | × |
| JFC0402-1350TS | 3.5 | 32 | | 0.0135 | 0.3017 | 57.84 | 0.20244 | × | × |
| JFC0402-1400TS | 4 | 32 | | 0.0115 | 0.3084 | 57.00 | 0.22800 | × | × |
| JFC0402-1500TS | 5 | 32 | | 0.0085 | 0.5310 | 52.44 | 0.26220 | × | × |

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

Temperature Derating Curve

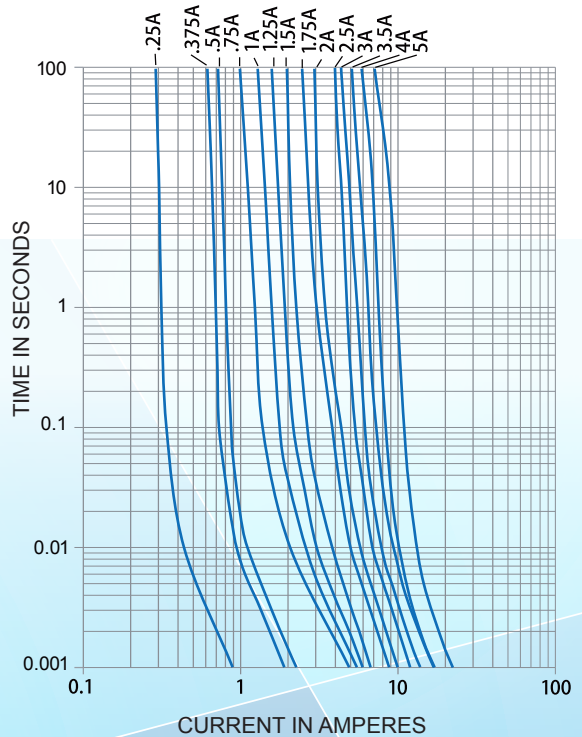


Note:
1. Derating depicted in this curve is in addition to the standard derating of 25 % for continuous operation.

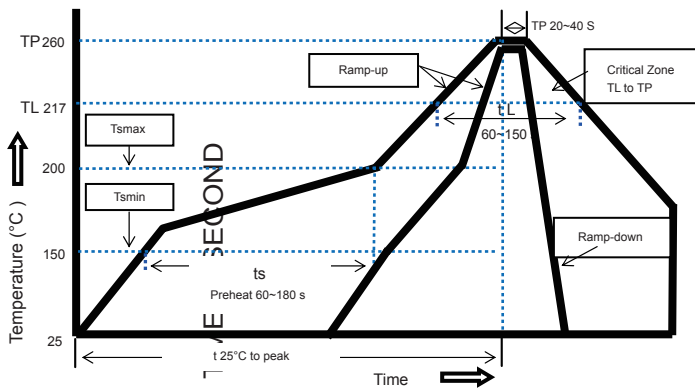
Example:
For continuous operation at 70 degrees celsius, the fuse should be derated as follows:

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

Average Time Current Curves



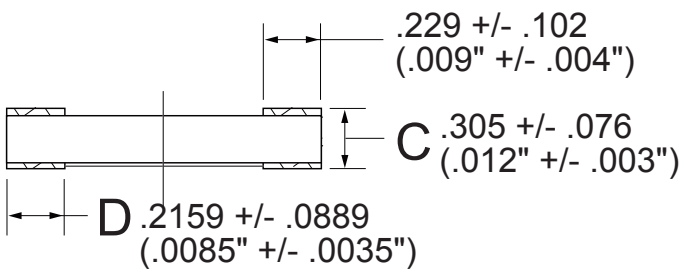
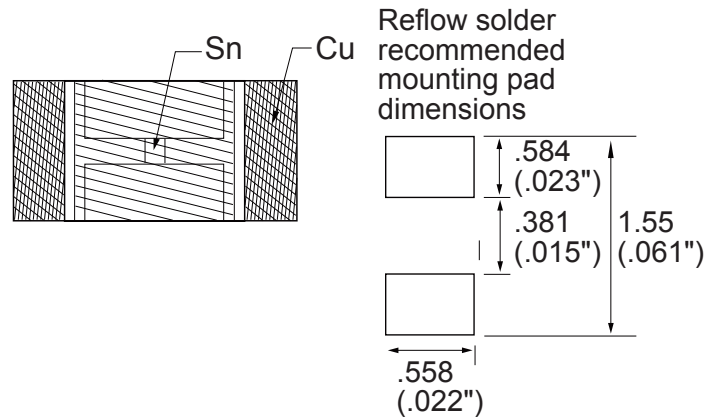
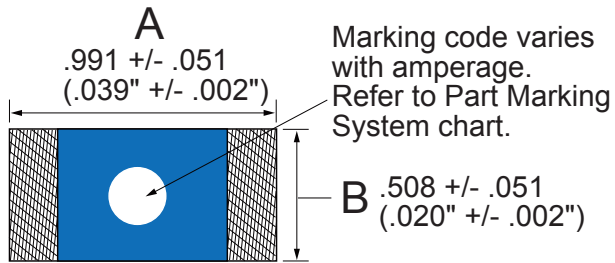
Soldering Parameters

















| Reflow Condition | Pb-Free Assembly |
|--|-------------------------|
| Pre Heat | |
| -Temperature Min(Ts min) | 150 °C |
| -Temperature Max(Ts max) | 200 °C |
| -Time(Min to Max)(ts) | 60~120 seconds |
| Average ramp up rate (Liquidus Temp (TL) to peak) | |
| | 5 °C/second max |
| Ts(max) to TL- Ramp-up Rate | 5 °C/second max |
| Reflow | |
| -Temperature(TL) (Liquidus) | 217 °C |
| -Temperature(TL) | 60~150 seconds |
| Peak Temperature(Tp) | 250 ^{+0/-5} °C |
| Time within 5 °C of actual peak Temperature (Tp) | 20-40 seconds |
| Ramp-Down Rate | 5 °C/second max |
| Time 25 °C to Peak Temperature (Tp) | 8 minutes max. |
| Do not exceed | 260 °C |
| Wave Soldering | 260 °C, 10 seconds max. |

Product Characteristics

| | |
|-----------------------|--|
| Materials | Body: Epoxy/ Glass Substrate; Parts with 'HF' suffix: Halogen Free Epoxy / Glass Terminations: 100 % Tin over Nickel over Copper Device Weight: 0.316mg |
| Terminal Strength | MIL-STD-202 F ,Method 211A, Test Condition A |
| Insulation Resistance | After Opening: Greater than 10,000hms |
| Operating Temperature | -55 °C to 90 °C. Consult temperature derating curve chart .For operation above 90 °C please contact Littelfuse |
| Thermal Shock | Withstands 5cycles of -55 °C to 125 °C |
| Vibration | MIL-STD-202 F |

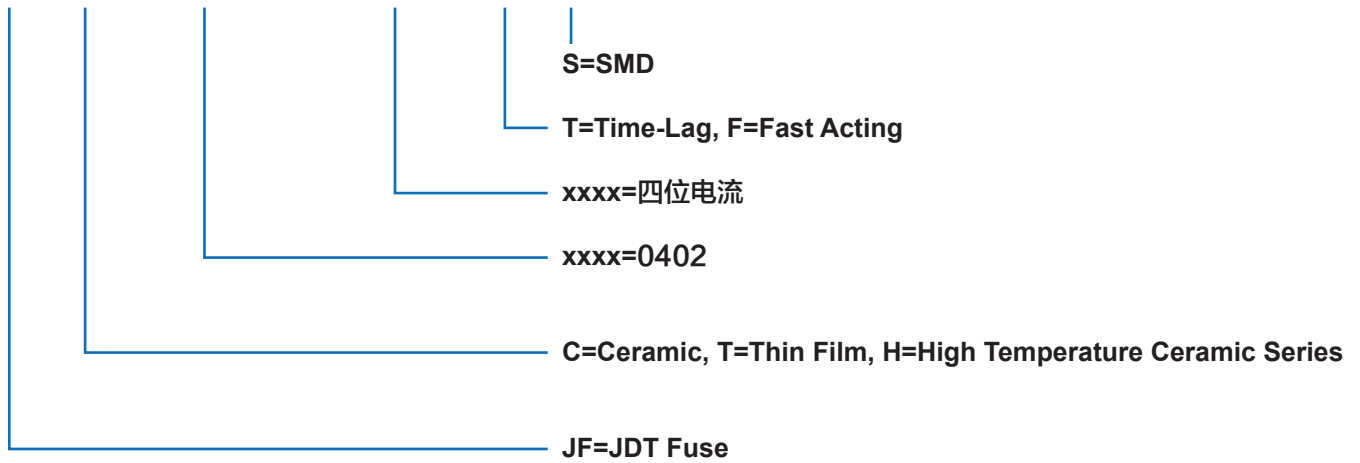
Dimensions

Part Marking System

| | A | B | C | D |
|----------|-------|-------|-------|-------|
| inch min | 0.037 | 0.018 | 0.009 | 0.005 |
| inch max | 0.041 | 0.022 | 0.015 | 0.012 |
| mm min | 0.94 | 0.457 | 0.229 | 0.127 |
| mm max | 1.04 | 0.559 | 0.381 | 0.305 |

| Amp Code | Marking Code |
|----------|---|
| .250 |  |
| .375 |  |
| .500 |  |
| .750 |  |
| 001. |  |
| 1.25 |  |
| 01.5 |  |
| 1.75 |  |
| 002. |  |
| 02.5 |  |
| 003. |  |
| 03.5 |  |
| 004. |  |
| 005. |  |

Part Numbering System

JF C 0402 - xxxx T S



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code |
|-------------------|------------------------------|----------|---------------------------|
| 8mm Tape and Reel | EIA RS-481-2(IEC 286,part 3) | 10000 | |