

RoHS **HF 251/253 Series, PICO® II, Very Fast-Acting Fuse**



Description

The PICO® II Very Fast-Acting Fuse is designed to meet an extensive array of performance characteristics in a space-saving subminiature package.

Features





- Very fast-acting
- Small size
- Wide current rating range (62mA- 15A)
- RoHS compliant
- Halogen-free available
- Wide operating temperature range
- Low temperature derating

Applications

Secondary protection for space constrained applications

- Flat-panel display TV
- LCD monitor
- LCD backlight inverter
- Office machines
- Power supply
- Audio/Video system
- Lighting system
- Medical equipment

Agency Approvals







| Agency | Agency File Number | Ampere Range |
|---|--|---|
|  | E10480 | 62mA - 15A |
|  | LR 29862 | 62mA - 15A |
|  | JET 1896-31007-1001 | 1A - 5A |
| TUV | J50158379 | 500mA - 10A |
| QPL | FM10 | 62mA - 15A |
|  | 2009010207366577 – 500mA to 5A Pending – 7A, 10A | 500mA, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A |

Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|--|------------------|
| 100% | 62mA - 15A | 4 Hours, Min. |
| | 62mA - 7A | 1 Second, Max. |
| 200% | 10A | 3 Seconds, Max. |
| | 12 - 15A | 10 Seconds, Max. |
| 275% | 500mA, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A | 300 msecs., Max. |
| 400% | 500mA, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A | 30 msecs., Max. |
| 1000% | 500mA, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A | 4 msecs., Max. |

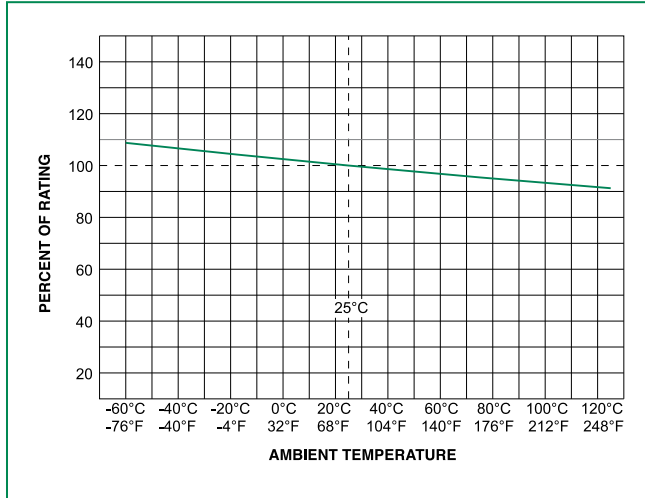
251/253 Series

Electrical Specifications by Item

| Ampere Rating (A) | Amp Code | Ordering Number (Std.) | Ordering Number (Mil.) | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Nom Voltage Drop (V) | Agency Approvals | | | | | | |
|-------------------|----------|------------------------|------------------------|------------------------|--|--|---|----------------------|---|---|---|---|---|---|---|
| | | | | | | | | |  |  |  |  |  |  | |
| .062 | .062 | 251.062 | 253.062 | 125 | 300 A @ rated voltage DC | 7.000 | 0.000113 | 1.4 | x | x | | | x | | |
| .125 | .125 | 251.125 | 253.125 | 125 | | 1.700 | 0.00174 | 0.285 | x | x | | | x | | |
| .250 | .250 | 251.250 | 253.250 | 125 | | 0.665 | 0.0116 | 0.24 | x | x | | | x | | |
| .375 | .375 | 251.375 | 253.375 | 125 | | 0.395 | 0.0296 | 0.215 | x | x | | | x | | |
| .500 | .500 | 251.500 | 253.500 | 125 | | 0.280 | 0.0598 | 0.2165 | x | x | | x | x | x | |
| .630 | .630 | 251.630 | | 125 | | 0.205 | 0.094 | 0.188 | x | x | | | | | |
| .750 | .750 | 251.750 | 253.750 | 125 | | 0.175 | 0.153 | 0.176 | x | x | | x | x | | |
| 1.00 | 001. | 251001. | 253001. | 125 | | 50 A @ rated voltage AC | 0.128 | 0.256 | 0.194 | x | x | x | x | x | x |
| 1.25 | 1.25 | 2511.25 | | 125 | | | 0.100 | 0.390 | 0.2 | x | x | x | | | |
| 1.50 | 01.5 | 25101.5 | 25301.5 | 125 | | For CCC 7A: 70 A @ rated voltage AC | 0.0823 | 0.587 | 0.21 | x | x | x | x | x | |
| 2.00 | 002. | 251002. | 253002. | 125 | 0.0473 | | 0.405 | 0.141 | x | x | x | x | x | x | |
| 2.50 | 02.5 | 25102.5 | | 125 | 0.0360 | | 0.721 | 0.132 | x | x | x | x | | x | |
| 3.00 | 003. | 251003. | 253003. | 125 | 0.0290 | | 1.19 | 0.131 | x | x | x | x | x | x | |
| 3.50 | 03.5 | 25103.5 | | 125 | 0.0240 | | 1.58 | 0.1205 | x | x | x | x | | | |
| 4.00 | 004. | 251004. | 253004. | 125 | For CCC 10A: 100 A @ rated voltage AC | | 0.0204 | 2.45 | 0.114 | x | x | x | x | x | x |
| 5.00 | 005. | 251005. | 253005. | 125 | | | 0.0155 | 4.14 | 0.11 | x | x | x | x | x | x |
| 7.00 | 007. | 251007. | 253007. | 125 | | | 0.0105 | 10.4 | 0.102 | x | x | | x | x | P |
| 10.0 | 010. | 251010. | 253010. | 125 | | | 0.00705 | 25.5 | 0.1 | x | x | | x | x | P |
| 12.0 | 012. | 251012. | | 32 | | | 0.0055 | 45.2 | 0.0878 | x | x | | | | |
| 15.0 | 015. | 251015. | 253015. | 32 | | 0.00446 | 68.8 | 0.071 | x | x | | | x | | |

Note: Higher ampere ratings are available. Please contact Littelfuse Technical Support or your Littelfuse products representative for assistance.
P = Pending

Temperature Derating Curve



Note:

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

Soldering Parameters

Recommended Process Parameters:

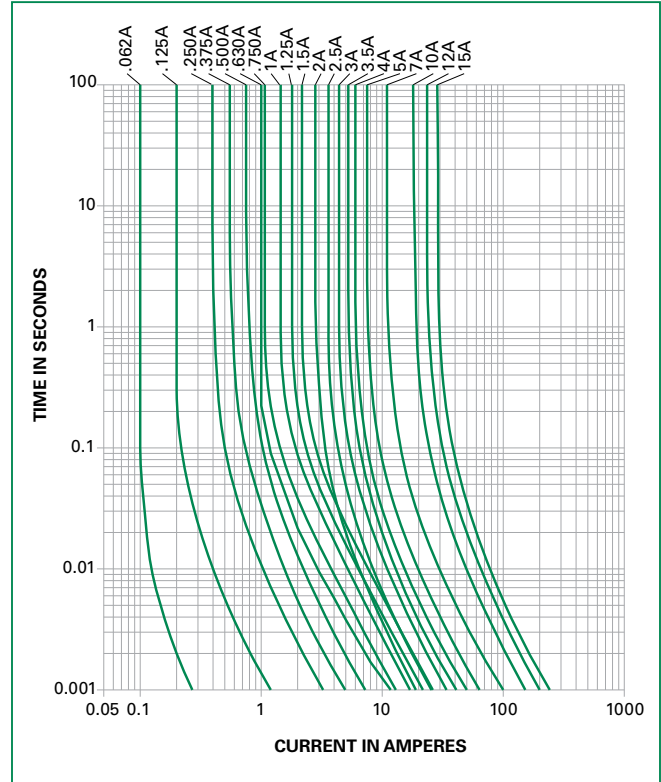
| Wave Parameter | Lead-Free Recommendation |
|---|-----------------------------------|
| Preheat: (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum: | 100° C |
| Temperature Maximum: | 150° C |
| Preheat Time: | 60-180 seconds |
| Solder Pot Temperature: | 260° C Maximum |
| Solder Dwell Time: | 2-5 seconds |

Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350° C +/- 5° C
 Heating Time: 5 seconds max.

Note: These devices are not recommended for IR or Convection Reflow process.

Average Time Current Curves

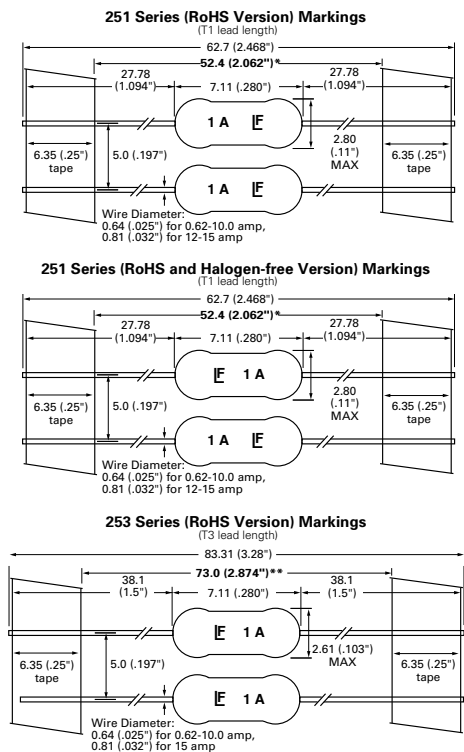


Product Characteristics

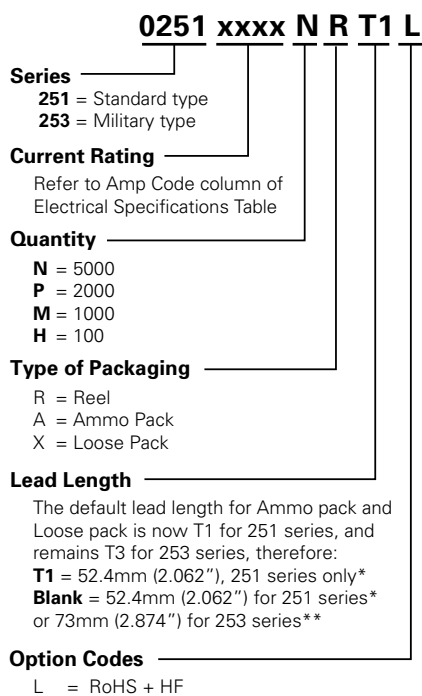
| | |
|--------------------------|---|
| Materials | Encapsulated, Epoxy-Coated Body: Pure Tin-coated Copper wire leads |
| Solderability | MIL-STD-202, Method 208 |
| Lead Pull Force | MIL-STD-202, Method 211, Test Condition A (will withstand a 7lbs. axial pull test) |
| Fuses To MIL SPEC | 251/253 Series is available in FM10 on QPL for MIL-PRF-23419. To order, change 251 to 253 |

| | |
|-------------------------------------|--|
| Operating Temperature | -55°C to +125°C |
| Shock | MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 msec.) |
| Vibration | MIL-STD-202, Method 201 (10–55 Hz); Method 204, Test Condition C (55–2000 Hz at 10 G's Peak) |
| Moisture Resistance | MIL-STD-202, Method 106 |
| Resistance to Soldering Heat | Withstands 60 seconds above 200°C and up to 260°C, maximum |
| Flammability Rating | UL 94V-0 |

Dimensions



Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity & Packaging Code |
|------------------------------------|-------------------------|---|
| *T1: 52.4mm (2.062") Tape and Reel | EIA 296 | Please refer to available quantities above in "Part Numbering System" |
| **T3: 73mm (2.874") Tape and Reel | EIA 296 | |

The default lead length for both ammo pack and loose pack is T1 for 251 and is T3 for 253.

Notes: * T1 dimension is defined as the length of the component between the two tapes. The full component length is 62.7mm (2.468"). **T1 length is for 251 series only.**
** T3 dimension is defined as the length of the component between the two tapes. The full component length is 83.37mm (3.28"). **T3 length is for 253 series only.**