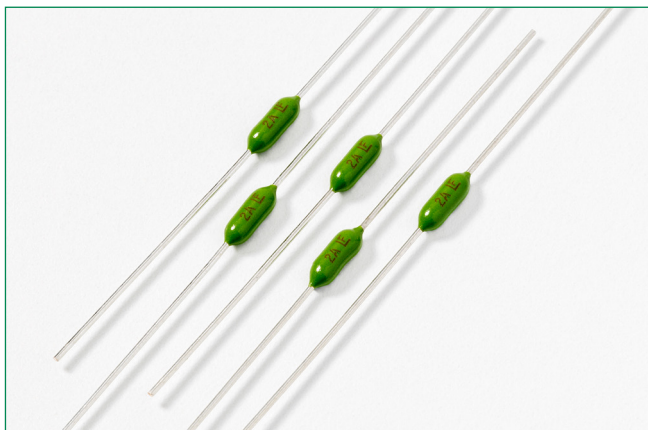


# 251/253 Series

## 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 and Benefits

- Very fast-acting
- Small size
- Wide current rating range (0.062A - 15A)
- Halogen-free available
- Wide operating temperature range
- Low temperature re-rating

### 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

### Additional Information



Resources  
251 Series



Accessories  
251 Series



Samples  
251 Series



Resources  
253 Series



Accessories  
253 Series



Samples  
253 Series

### Agency Approvals

| Agency     | Agency File/Certificate Number |                      | Ampere Range                     |
|------------|--------------------------------|----------------------|----------------------------------|
|            | 253 Series                     | 251 Series           |                                  |
|            | N/A                            | E10480               | 0.062A - 15A                     |
|            | N/A                            | 29862                | 0.062A - 15A                     |
|            | N/A                            | PSE_NBK200416-JP1021 | 1A - 5A                          |
|            | N/A                            | J50158379            | 0.500A - 10A                     |
| <b>QPL</b> | FM10                           | N/A                  | 0.062A - 15A                     |
|            | N/A                            | 2020970207000061     | 0.500A, 1A, 2A, 2.5A, 3A, 4A, 5A |

**Note:** See Electrical Specifications by Item table for specific approved ratings.

### Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating                             | Opening Time     |
|--------------------|-------------------------------------------|------------------|
| 100%               | 0.062A - 15A                              | 4 Hours, Min.    |
|                    | 0.062A - 7A                               | 1 Second, Max.   |
| 200%               | 10A                                       | 3 Seconds, Max.  |
|                    | 12 - 15A                                  | 10 Seconds, Max. |
| 275%               | 0.500A, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A | 300 msecs., Max. |
| 400%               | 0.5A, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A   | 30 msecs., Max.  |
| 1000%              | 0.500A, 1A, 2A, 2.5A, 3A, 4A, 5A          | 4 msecs., Max.   |

# 251/253 Series

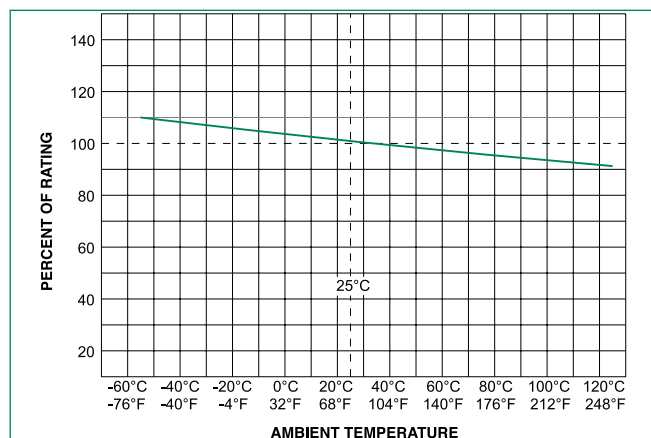
## PICO® II Very Fast-Acting Fuse

### 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 <sup>2</sup> t (A <sup>2</sup> sec) | Nom Voltage Drop (V) | Agency Approvals |     |      |     |                 |     |
|-------------------|----------|------------------------|------------------------|------------------------|-------------------------------|--------------------------------|-------------------------------------------------------|----------------------|------------------|-----|------|-----|-----------------|-----|
|                   |          |                        |                        |                        |                               |                                |                                                       |                      | UL               | CSA | PS E | QPL | 253 Series Only | CCC |
| .062              | .062     | 251.062                | 253.062                | 125                    | 300 A @ 125VDC<br>50A@ 125VAC | 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               | -   |
| .200              | .200     | 251.200                | 253.200                | 125                    |                               | 0.895                          | 0.0048                                                | 0.345                | 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                    |                               | 0.302                          | 0.0598                                                | 0.2165               | x                | x   | -    | x   | x               | x   |
| .630              | .630     | 251.630                |                        | 125                    |                               | 0.205                          | 0.08                                                  | 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                    |                               | 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                    |                               | 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                    |                               | 0.0295                         | 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                    |                               | 0.0204                         | 2.45                                                  | 0.114                | x                | x   | x    | x   | x               | x   |
| 5.00              | 005.     | 251005.                | 253005.                | 125                    |                               | 0.0158                         | 4.14                                                  | 0.11                 | x                | x   | x    | x   | x               | x   |
| 7.00              | 007.     | 251007.                | 253007.                | 125                    |                               | 0.0107                         | 10.4                                                  | 0.102                | x                | x   | -    | x   | x               | -   |
| 10.0              | 010.     | 251010.                | 253010.                | 125                    |                               | 0.0072                         | 25.5                                                  | 0.1                  | x                | x   | -    | x   | x               | -   |
| 12.0              | 012.     | 251012.                |                        | 32                     | 300A@32VDC & 50A@32VAC        | 0.0059                         | 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.

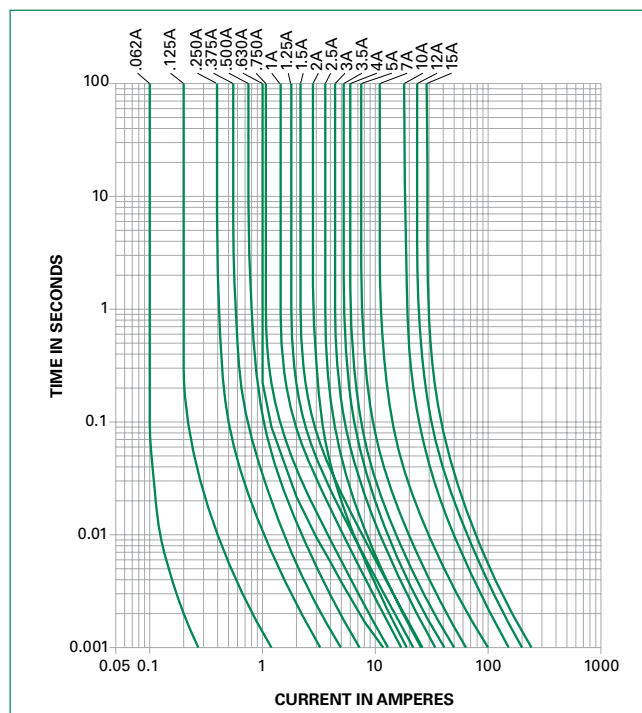
### Temperature Re-rating Curve



**Note:**

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

### Average Time Current Curves



# 251/253 Series

## PICO® II Very Fast-Acting Fuse

### Product Characteristics

|                              |                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Materials</b>             | Encapsulated, Epoxy-coated Body<br>251 Series: Pure tin-coated copper wire leads<br>253 Series: Solder-coated copper wire leads |
| <b>Solderability</b>         | MIL-STD-202, Method 208                                                                                                         |
| <b>Lead Pull Force</b>       | MIL-STD-202, Method 211, Test Condition A (will withstand a 7lbs. axial pull test)                                              |
| <b>Fuses To MIL SPEC</b>     | For fuses to MIL-PRF-23419, FM10 change the series number from 251 to 253                                                       |
| <b>Operating Temperature</b> | -55°C to +125°C (Consider re-rating)                                                                                            |

|                                               |                                                                                              |
|-----------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>Vibration</b>                              | MIL-STD-202, Method 201 (10–55 Hz); Method 204, Test Condition C (55–2000 Hz at 10 G's Peak) |
| <b>Shock</b>                                  | MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 msecs.)                        |
| <b>Insulation Resistance (After Opening):</b> | MIL-STD-202, Method 302, Test Condition A (10,000 ohms minimum at 100 volts)                 |
| <b>Moisture Resistance</b>                    | MIL-STD-202, Method 106                                                                      |
| <b>Resistance to Soldering Heat</b>           | Withstands 60 seconds above 200°C and up to 260°C, maximum                                   |
| <b>Flammability Rating</b>                    | UL 94V-0                                                                                     |

### Soldering Parameters

#### Recommended Process Parameters:

| Wave Parameter                                       | Lead-Free Recommendation for 251 Series only |
|------------------------------------------------------|----------------------------------------------|
| Preheat:<br>(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 Soldering 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

### Packaging

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

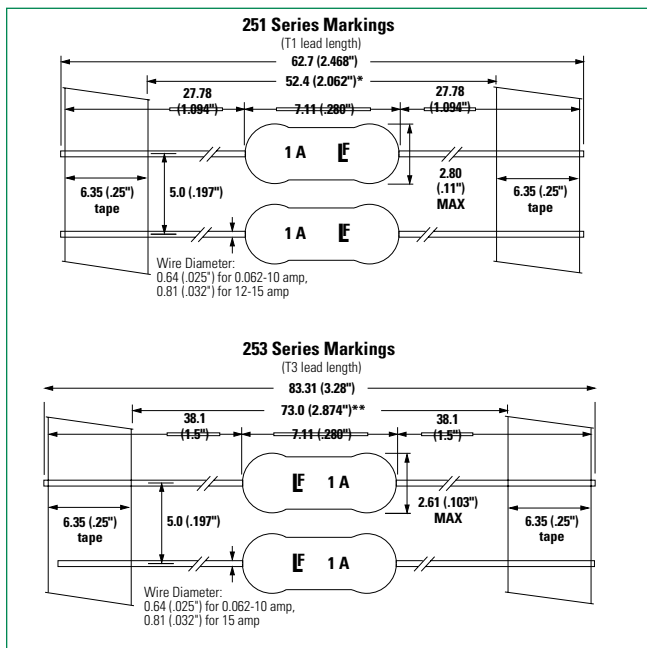
The default lead length for both ammo pack and loose pack is T1 for 251 and is T3 for 253.

#### 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.**

### Dimensions



### Part Numbering System

|                          | 0251                                                                                                                                                                                                                                                          | xxxx | N | R | T1 | L |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---|---|----|---|
| <b>Series</b>            | 251 = Standard type<br>253 = Military type                                                                                                                                                                                                                    |      |   |   |    |   |
| <b>Current Rating</b>    | Refer to Amp Code column of Electrical Specifications Table                                                                                                                                                                                                   |      |   |   |    |   |
| <b>Quantity</b>          | N = 5000<br>P = 2000<br>M = 1000<br>H = 100                                                                                                                                                                                                                   |      |   |   |    |   |
| <b>Type of Packaging</b> | R = Reel<br>A = Ammo Pack<br>X = Loose Pack                                                                                                                                                                                                                   |      |   |   |    |   |
| <b>Lead Length</b>       | The default lead length for Ammo pack and Loose pack is now T1 for 251 series, and remains T3 for 253 series, therefore:<br><b>T1</b> = 52.4mm (2.062"), 251 series only*<br><b>Blank</b> = 52.4mm (2.062") for 251 series* or 73mm (2.874") for 253 series** |      |   |   |    |   |
| <b>Option Codes</b>      | L = RoHS + HF<br>(Only applies to 251 Series)                                                                                                                                                                                                                 |      |   |   |    |   |

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