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## 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 (0.062A-15A)
- Halogen-free available
- Wide operating temperature range
- · Low temperature re-rating

## **Agency Approvals**

Agency	Agency File Number 253 Series	Agency File Number 251 Series	Ampere Range		
<i>71</i>	N/A	E10480	0.062A - 15A		
<b>(</b>	N/A	29862	0.062A - 15A		
PS	N/A	PSE_NBK200416- JP1021	1A - 5A		
	N/A	J50158379	0.500A - 10A		
QPL	FM10	N/A	0.062A - 15A		
<b>(1)</b>	N/A	2009010207366577	0.500A, 1A, 2A, 2.5A, 3A, 4A, 5A		

## **Applications**

Secondary protection for space constrained applications

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

## **Additional Information**



251 Series



Datasheet 253 Series



Resources 251 Series



Resources 253 Series



Samples 251 Series



Samples 253 Series

### **Electrical Characteristics for Series**

	% of Ampere Rating	Ampere Rating	OpeningTime				
	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%		0.05A, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A	30 msecs., Max.				
1000%		0.500A, 1A, 2A, 2.5A, 3A, 4A, 5A, 7A, 10A	4 msecs., Max.				

# Axial Lead & Cartridge Fuses PICO® II > Very Fast-Acting Fuse > 251/253 Series

Electrical Specifications by Item														
A 170 17 0 17 0		Ordering	Ordering	Max		Nominal	Nominal	Nom	Agency Approvals					
Ampere Rating (A)	Amp Code	Number (Std.)	Number (Mil.)	Voltage Rating (V)	Interrupting Rating	Cold Resistance (Ohms)	Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Voltage Drop (V)	<i>8</i> 1	<b>(</b>	PS	TUV	QPL 253 Series Only	<b>(W)</b>
.062	.062	251.062	253.062	125		7.000	0.000113	1.4	X	Х			X	
.125	.125	251.125	253.125	125		1.700	0.00174	0.285	X	Х			X	
.200	.200	251.200	253.200	125		0.895	0.0048	0.345	X	Х				
.250	.250	251.250	253.250	125		0.665	0.0116	0.24	X	Х			X	
.375	.375	251.375	253.375	125		0.395	0.0296	0.215	X	Х			X	
.500	.500	251.500	253.500	125		0.302	0.0598	0.2165	X	Х		×	X	×
.630	.630	251.630		125	300 A @	0.205	0.08	0.188	X	Х				
.750	.750	251.750	253.750	125	125VDC	0.175	0.153	0.176	X	Х		×	X	
1.00	001.	251001.	253001.	125	50A@125VAC	0.128	0.256	0.194	×	Х	×	×	×	×
1.25	1.25	2511.25		125	30A@123VAC	0.100	0.390	0.2	X	Х	X			
1.50	01.5	25101.5	25301.5	125	For CCC 7A:	0.0823	0.587	0.21	×	Х	×	×	×	
2.00	002.	251002.	253002.	125	70A@125VAC	0.0473	0.405	0.141	×	Х	X	×	×	X
2.50	02.5	25102.5		125	For CCC 10A:	0.0360	0.721	0.132	×	Х	×	×		X
3.00	003.	251003.	253003.	125	100A@	0.0295	1.19	0.131	×	Х	X	×	×	×
3.50	03.5	25103.5		125	125VAC	0.0240	1.58	0.1205	×	Х	X	×		
4.00	004.	251004.	253004.	125		0.0204	2.45	0.114	×	Х	×	×	×	×
5.00	005.	251005.	253005.	125		0.0158	4.14	0.11	Х	Х	Х	Х	Х	×
7.00	007.	251007.	253007.	125		0.0107	10.4	0.102	Х	Х		Х	Х	
10.0	010.	251010.	253010.	125		0.0072	25.5	0.1	Х	Х		Х	Х	
12.0	012.	251012.		32	300A@32VDC	0.0059	45.2	0.0878	Х	Х				
15.0	015.	251015.	253015.	32	& 50A@32VAC	0.00446	68.8	0.071	X	×			X	

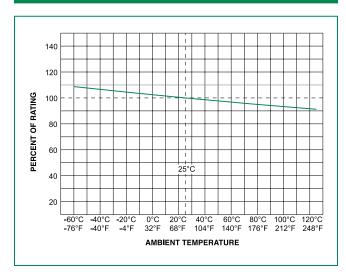
Note: Higher ampere ratings are available. Please contact Littelfuse Technical Support or your Littelfuse products representative for assistance.

# Axial Lead & Cartridge Fuses

PICO® II > Very Fast-Acting Fuse > 251/253 Series



## **Temperature Re-rating Curve**



#### Note:

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

## **Soldering Parameters**

## **Recommended Process Parameters:**

Wave Parameter	Lead-Free Recommendation for 251 Series only			
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 DwellTime:	2-5 seconds			

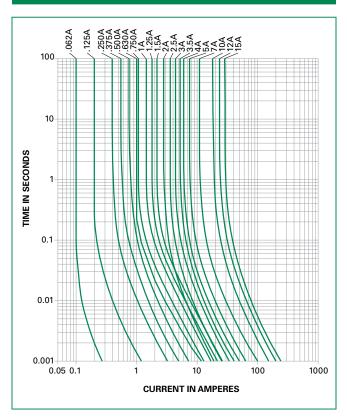
## **Recommended Hand Soldering Parameters:**

Solder Iron Temperature: 350°C +/- 5°C

Heating Time: 5 seconds max.

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

## **Average Time Current Curves**





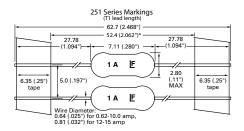
## **Axial Lead & Cartridge Fuses** PICO® II > Very Fast-Acting Fuse > 251/253 Series

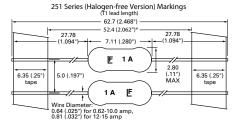
## **Product Characteristics**

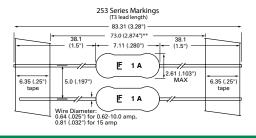
Materials	Encapsulated, Epoxy-Coated <b>Body:</b> Pure Tin-coated Copper wire leads		
Solderability	MIL-STD-202, Method 208		
Lead Pull Force	MIL-STD-202, Method 211, Test Condition A (will withstand a 7lbs. axial pull test)		
Fuses To MIL SPEC	For fuses to MIL-PRF-23419, FM10 change the series number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

Vibration	MIL-STD-202, Method 201 (10–55 Hz); Method 204, Test Condition C (55–2000 Hz at 10 G's Peak)		
Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 msecs.)		
Insulation Resistance (After Opening):	MIL-STD-202, Method 302, Test Condition A (10,000 ohms minimum at 100 volts)		
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		

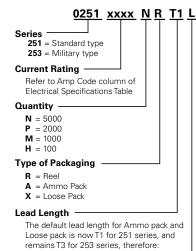
## **Dimensions**







## **Part Numbering System**



remains T3 for 253 series, therefore: **T1** = 52.4mm (2.062"), 251 series only\* Blank = 52.4mm (2.062") for 251 series\* or 73mm (2.874") for 253 series\*\*

## **Option Codes**

L = RoHS + HF (Only applies to 251 Series)

## **Packaging**

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

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

\* 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. Notes: