303 Series, TR3®, Fast-Acting Fuse

Description

The 303 Series are TR3®, fast-acting type, 125V rated fuses designed in accordance to UL 248–14.

Features

- Reduced PCB space requirements
- Direct solderable or plug-in versions
- Internationally approved
- Low internal resistance
- Shock safe casing
- Vibration resistant
- Halogen free
- Lead-free
- Available from 50mA to 5A

Agency Approvals

Agency	Agency File Number	Ampere Range
UL	E67006	50mA-5A
CSA	051378	50mA-5A

Applications

- Battery chargers
- Consumer electronics
- Power supplies
- Industrial controllers

Electrical Characteristics

% of Ampere Rating	Opening Time
200	60 Seconds, Maximum

Electrical Characteristics

Amp Code	Rated Current	Voltage Rating	Breaking Capacity	Voltage Drop 1.0 x I_N max. (mV)	Power Dissipation 1.0 x I_N max. (mW)	Melting Integral 10 x I_N max. (A^2s)	Approvals	
							UL	CSA
0050	50mA	125V	50A / 125VAC 60-60 Hz/cos φ - 1 50A / 63 VDC	800	40	0.00007	X	X
0063	63mA	125V		780	50	0.00013	X	X
0080	80mA	125V		730	60	0.0002	X	X
0100	100mA	125V		700	70	0.0004	X	X
0125	125mA	125V		650	85	0.0022	X	X
0160	160mA	125V		600	100	0.0029	X	X
0200	200mA	125V		550	110	0.0042	X	X
0250	250mA	125V		500	125	0.0082	X	X
0315	315mA	125V		450	145	0.015	X	X
0400	400mA	125V		400	160	0.025	X	X
0500	500mA	125V		380	190	0.042	X	X
0630	630mA	125V		160	100	0.015	X	X
0800	800mA	125V		155	125	0.025	X	X
1100	1.00A	125V		150	155	0.039	X	X
1125	1.25A	125V		145	185	0.059	X	X
1160	1.60A	125V		140	225	0.11	X	X
1200	2.00A	125V		130	260	0.17	X	X
1250	2.50A	125V		125	315	0.23	X	X
1315	3.15A	125V		120	380	0.45	X	X
1400	4.00A	125V		110	440	1.0	X	X
1500	5.00A	125V		105	525	1.5	X	X

Note: 1.00 means the number one with two decimal places. 1,000 means the number one thousand.

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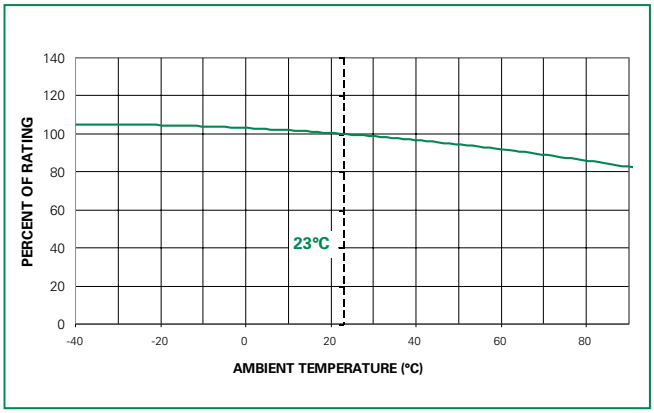
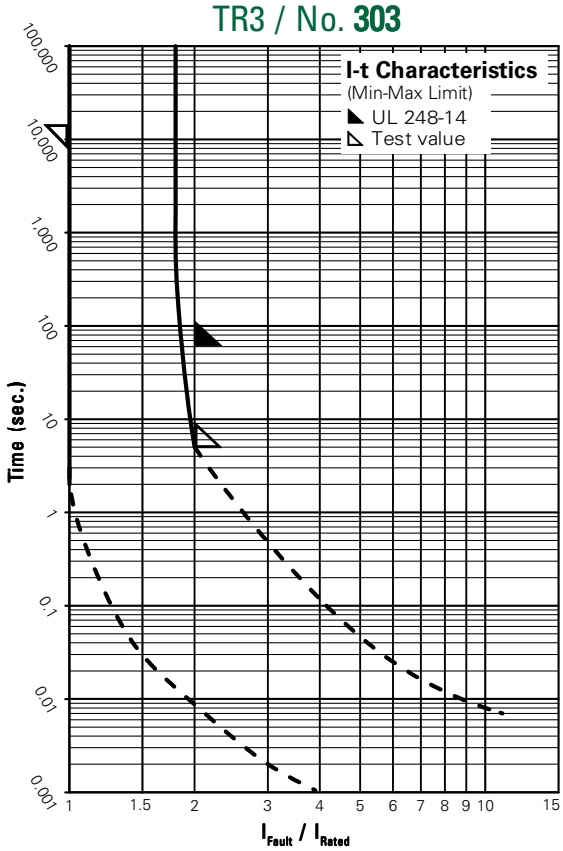
Specifications are subject to change without notice.
Please refer to www.littelfuse.com/series/303.html for current information.

Temperature Rerating Curve

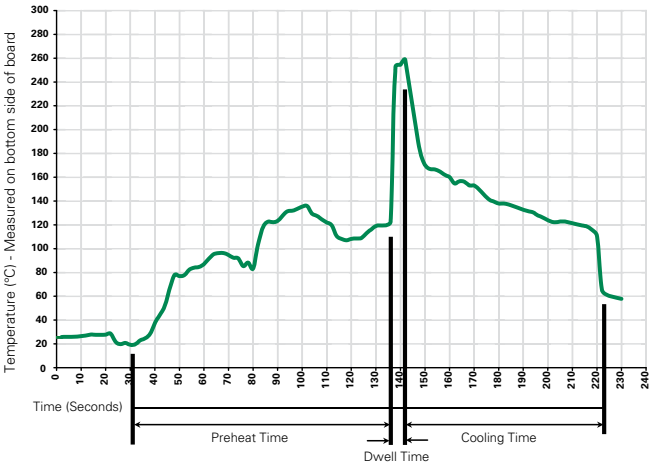


Average Time Current Curves



Contact Littelfuse for individual I-t curves

Soldering Parameters - Wave Soldering



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.

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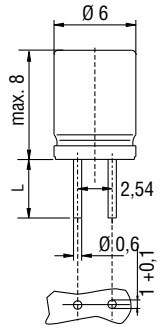
Product Characteristics

Materials	Base/Cap: Black Thermoplastic Base Polyamide PA 6.6, UL 94V-0 Brass, Nickel-plated Cap Round Pins: Copper alloy, Tin–plated
Lead Pull Strength	10 N (EN 60068-2-21)
Solderability	260°C, ≤ 3s. (Wave) 350°C, ≤ 1s. (Soldering Iron)
Soldering Heat Resistance	260°C, 10s. (IEC 60068-2-20) 350°C, 3s. (Soldering Iron)

Operating Temperature	-25°C to +70°C (consider de-rating)
Climatic Category	-25°C/+70°C/21 days (EN 60068-1..3)
Stock Conditions	+10°C to +60°C RH, ≤ 75% yearly average, without dew
Vibration Resistance	24 cycles at 15 min. each (EN 60068-6) 10 - 60 Hz at 0.75 mm amplitude 60 - 2000 Hz at 10 g acceleration

Dimensions



Dimensions (mm)
Holes in PCB
Long Leads (L=18.8 mm)
Short Leads (L=4.3 mm)

Part Numbering System

303 xxxx 000

Series

Amp. Code
Refer to Amp Code column of
Electrical Characteristic Table

Packaging Code
000 Tape/Ammopack (1,500 pcs.)
013 Short Leads - Bulk (200 pcs.)
042 Short Leads - Bulk (300 pcs.)

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Reel Size
303 Series				
Tape & Ammopack	N/A	1,500	000	N/A
Short Leads	N/A	200	013	N/A
Short Leads	N/A	300	042	N/A

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