443LC Series Fuse

HF RoHS c UL us

Description

The 443LC Series 280V Nano² Fuse is a small square surface mount fuse that is designed to enable compliance with the RoHS directive. This product is fully compatible with lead-free solder alloy and higher temperature profiles associated with lead-free assembly.

Features

- 280VAC voltage rating
- Slo-Blo® Fuse
- Available 0.50A – 5.00A
- RoHS Compliant and halogen-free
- Fully compatible with lead-free solder alloys and higher temperature profiles associated with lead-free assembly
- UL Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14

Agency Approvals

Agency	Agency File Number	Ampere Range
c UL us	E10480	0.500A - 5.00A

Applications

- AC/DC power adaptor
- Telecom equipment system power
- Portable system built-in AC/DC converter
- High voltage DC/DC converter
- Lighting System
- LED Lighting

Electrical Characteristics for Series

% of Ampere Rating	Opening Time
100%	4 hours, Minimum
250%	120 seconds, Maximum

Additional Information

Datasheet | Resources | Samples

Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I²t (A²sec)	Nominal Voltage Drop (mV)	Agency Approvals c UL us
0.50	.500	280	50A @280VAC	0.600	1.61	448	x
0.75	.750	280		0.275	3.025	285	x
1	001.	280		0.180	10.17	234	x
1.50	01.5	280		0.100	14.72	196	x
2	002.	280		0.052	18.06	154	x
2.50	02.5	280		0.035	18.13	139	x
3	003.	280		0.028	51.44	113	x
3.50	03.5	280		0.019	53.14	98	x
4	004.	280		0.016	122.50	81	x
5	005.	280		0.0115	180.60	80	x

Notes:
1. Cold resistance measured at less than 10% of rated current at 23°C.
2. Agency Approval Table Key: X=Approved or Certified, P=Pending and Blank=Not Approved
3. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options.

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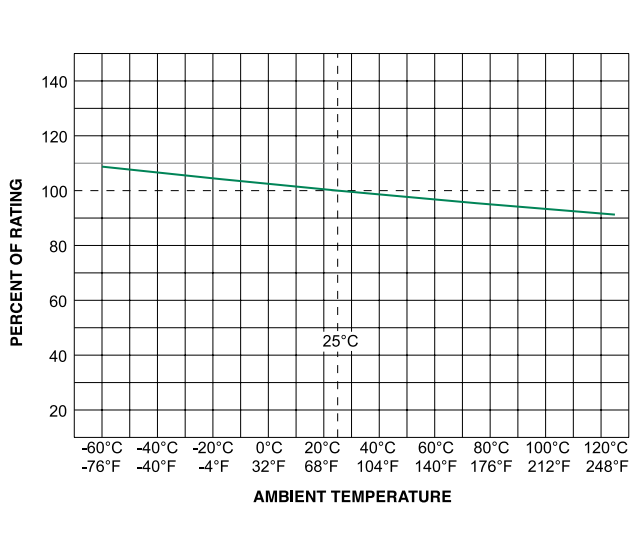
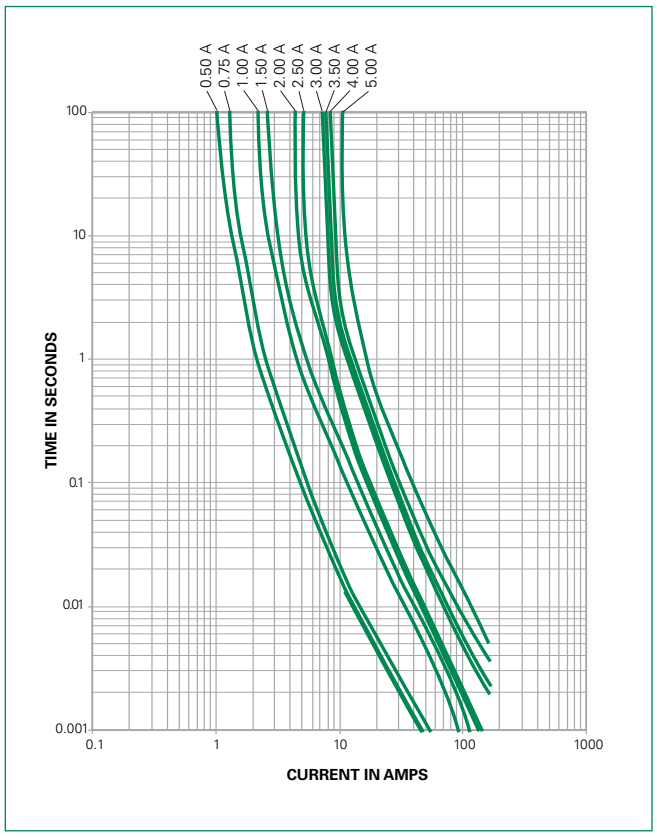
Temperature Re-rating Curve



Note:

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

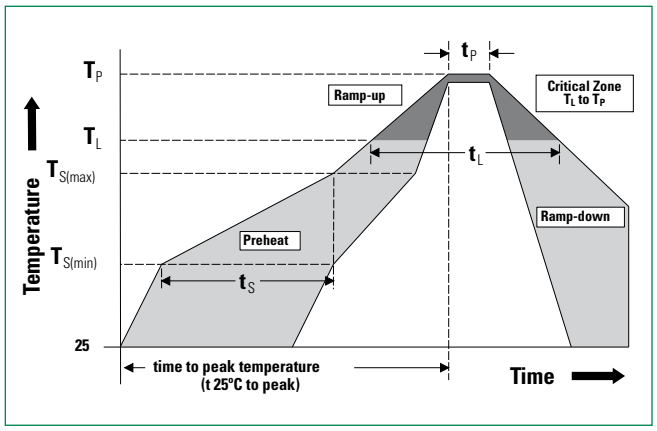
Average Time Current Curves



Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	**- Temperature Min ($T_{s(min)}$)**	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		5°C/second max.
$T_{S(max)}$ to T_L - Ramp-up Rate		5°C/second max.
Reflow	**- Temperature (T_L) (Liquidus)**	217°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max.
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

Wave Soldering Parameters	260°C Peak Temperature, 3 seconds max.



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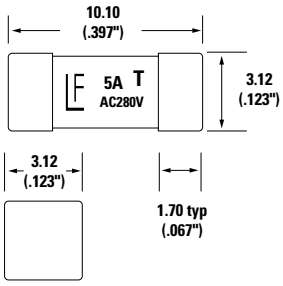
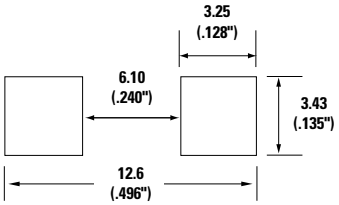
Product Characteristics

Materials	Body: Ceramic Cap: Silver Plated Brass
Product Marking	Body: Brand Logo, Current Rating Rated Voltage, T - C Characteristic "T"
Insulation Resistance (after Opening)	MIL-STD-202, Method 302, Test Condition A (10,000 ohms, Minimum)
Solderability	MIL-STD-202, Method 208
Resistance to Soldering Heat	MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C)
Moisture Sensitivity Level	Level 1 J-STD-020
PCB Recommendation for Thermal Management	Min. copper layer thickness = 100um Min. copper trace width = 10mm Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 80°C in a 25°C ambient environment.

Operating Temperature	–55°C to 125°C with proper derating
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (5 cycles -65°C to +125°C)
Vibration	MIL-STD-202, Method 201 (10-55 Hz)
Moisture Resistance	MIL-STD-202, Method 106, High Humidity (90-98%RH), Heat (65°C)
Salt Spray	MIL-STD-202, Method 101, Test Condition B
Mechanical Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)

Dimensions





Recommended Pad Layout

Part Numbering System

0443 .500 D R LC

Series — 0443

AMP Code — .500
Refer to Electrical characteristics table

Quantity Code — D
D = 1500 pcs

Packaging Code — R
R = Tape and Reel

Voltage Rating — LC
280VAC

Example:
1.5amp product is 0443 01.5 D R LC (0.5amp product shown above).

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
24mm Tape and Reel	EIA-RS 481-2 (IEC 286, part 3)	1500	DR

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