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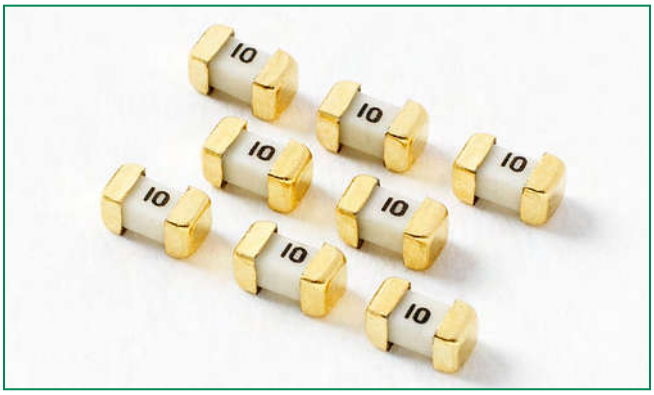
Surface Mount Fuses

NANO²® > 458 Series 1206 Size Inrush Withstand Fuse

458 Series Fuse

RoHS HF c UL us



Description

The 458 Series Nano²® Fuse is an ultra-small, square surface mount fuse designed to support a variety of space constrained overcurrent protection applications. Offering a 1206 size footprint, it is the smallest wire-in-air type surface mount fuse offered by Littelfuse.

Features

- Surface Mount Fuse
- Fully compatible with lead free soldering profiles
- RoHS Compliant and Halogen-Free
- Available in ratings of 1 to 10 Amperes

Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
c UL us	E10480	1A–10A

Applications

- Notebook PC
- LCD backlight inverter
- LCD Panel
- DC/DC converter
- Battery Pack
- Car Navigation System
- Network Equipment
- Telecom Equipment
- Electronic Signage
- Portable Consumer Electronics

Electrical Characteristics for Series

% of Ampere Rating	Opening Time
100%	4 hours, Minimum
250%	5 seconds, Maximum

Additional Information

Datasheet | **Resources** | **Samples**

Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Marking	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I²t (A²sec)	Agency Approvals c UL us
1.0	001.	1	75V	50A @ 75VDC 50A @ 48VAC	0.180	.168	x
1.25	1.25	1.25			0.125	.313	x
1.5	01.5	1.5			0.099	.548	x
1.6	01.6	1.6			0.092	.562	x
2	002.	2			0.0695	.952	x
2.5	02.5	2.5			0.06	1.408	x
3	003.	3			0.049	2.289	x
3.15	3.15	3.15			0.045	2.457	x
3.5	03.5	3.5			0.0375	4.00	x
4	004.	4		50A @ 75VDC 50A @ 32VAC	0.032	4.832	x
5	005.	5			0.027	7.938	x
6.3	06.3	6.3			0.0192	14.37	x
7	007.	7	63V	50A @ 63VDC 50A @ 32VAC	0.0175	20.48	x
8	008.	8			0.0058	13.448	x
10.0	010.	10			0.00465	15.0	x

Notes:
1. I²t values stated for 8 msec opening time
2. Cold resistance measured at less than 10% of rated current at 25°C.
3. Agency Approval Table Key: X=Approved or Certified, P=Pending and Blank=Not Approved
4. Have special electrical characteristic needs? Contact Littelfuse to learn more about application specific options.

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Specifications are subject to change without notice. Application testing is strongly recommended.
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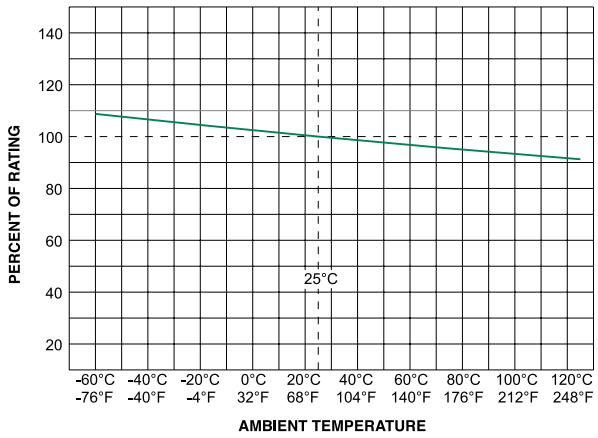
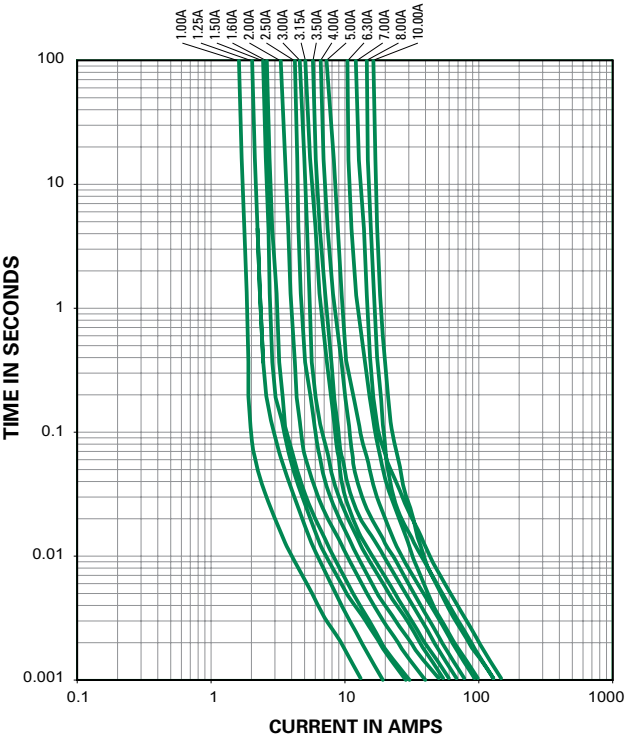
Temperature Re-rating Curve



Note:

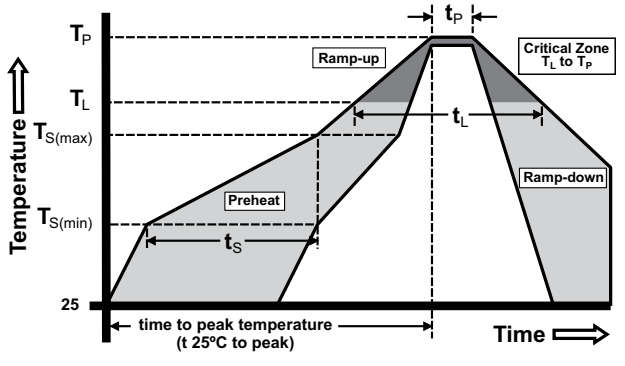
1. Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

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 – 120 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 – 90 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



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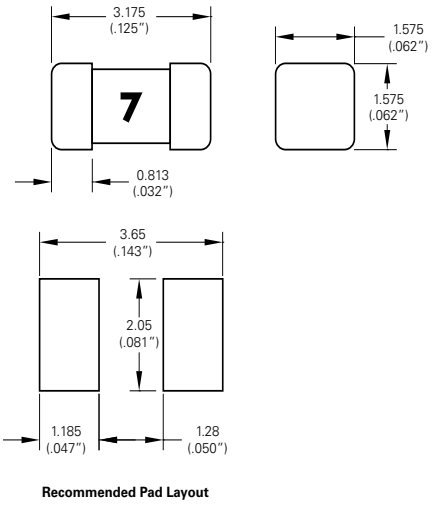
Product Characteristics

Materials	Body: Ceramic Cap: Gold Plated Brass
Product Marking	Body: Current Rating (Refer to Electrical Characteristic table)
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

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
Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)

Dimensions



Recommended Pad Layout

Part Numbering System

0458 001. D R

SERIES

AMP Code
Refer to Electrical characteristics table

QUANTITY Code
D: 1500 pcs

PACKAGING Code
R: Tape and Reel

Example:
1.5 amp product is 0458 D R (1 amp product shown above).

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
8mm Tape and Reel	EIA-RS 481-1	1500	DR

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