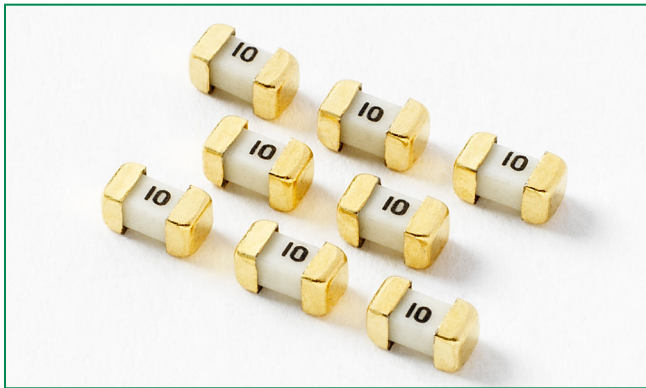




**THE DATASHEET OF  
0458001.DR**



### 458 Series Fuse



#### Description

The 458 Series Nano<sup>2</sup>® 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

#### 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

#### Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
	E10480	1A-10A

#### Electrical Characteristics for Series

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

#### Additional Information



Datasheet




Resources



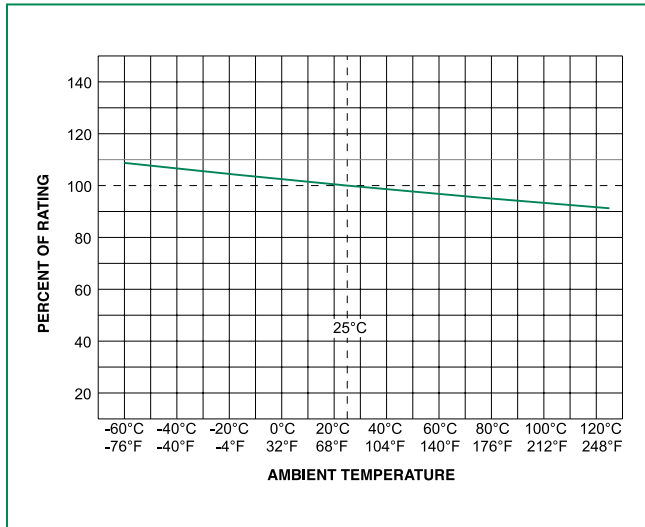
Samples

#### Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Marking	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Agency Approvals 
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			0.032	4.832	x
5	005.	5	63V	50A @ 75VDC 50A @ 32VAC	0.027	7.938	x
6.3	06.3	6.3			0.0192	14.37	x
7	007.	7			0.0175	20.48	x
8	008.	8	63V	50A @ 63VDC 50A @ 32VAC	0.0058	13.448	x
10.0	010.	10			0.00465	15.0	x

Notes:  
 1. I<sup>2</sup>t 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.

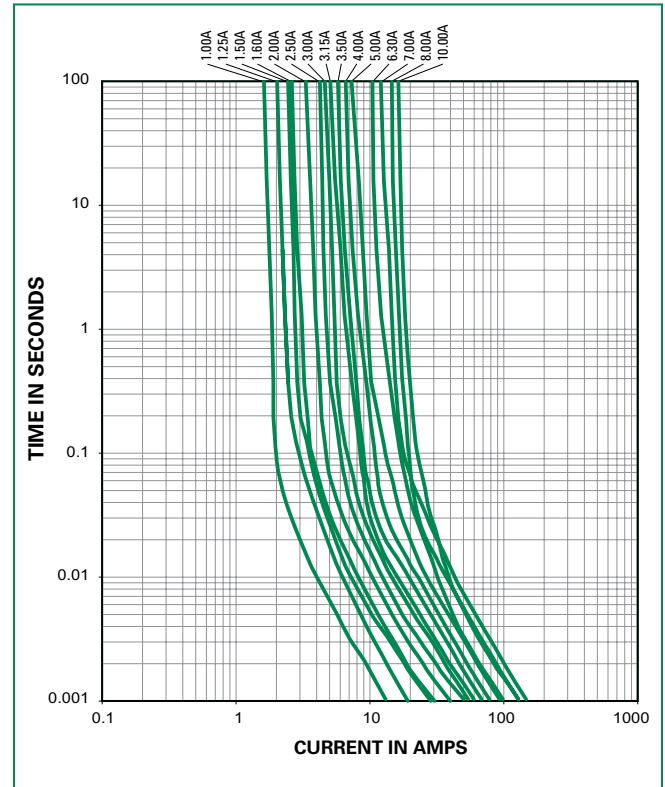
### Temperature Re-rating Curve



Note:

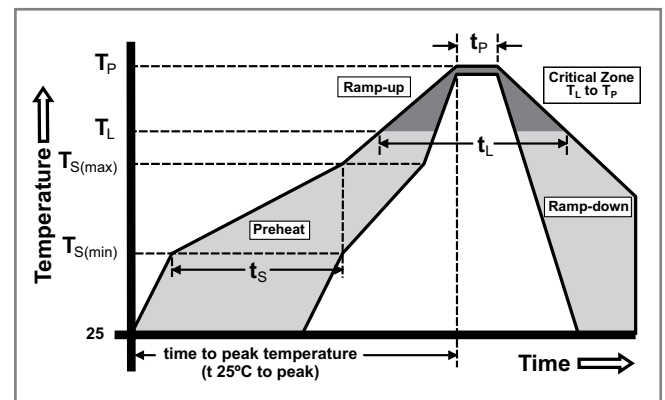
1. Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

### 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 <sup>+0/-5</sup> °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	

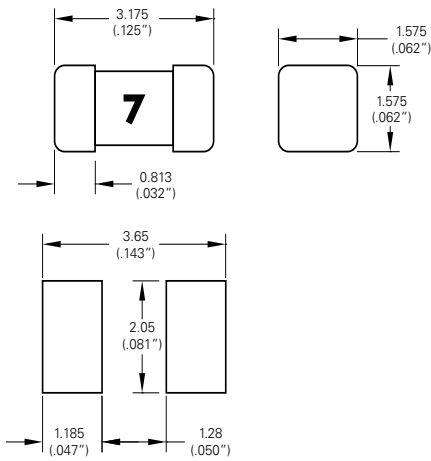


### Product Characteristics

<b>Materials</b>	Body: Ceramic Cap: Gold Plated Brass
<b>Product Marking</b>	Body: Current Rating (Refer to Electrical Characteristic table)
<b>Insulation Resistance</b> (after Opening)	MIL-STD-202, Method 302, Test Condition A (10,000 ohms, Minimum)
<b>Solderability</b>	MIL-STD-202, Method 208
<b>Resistance to Soldering Heat</b>	MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C)
<b>Moisture Sensitivity Level</b>	Level 1 J-STD-020

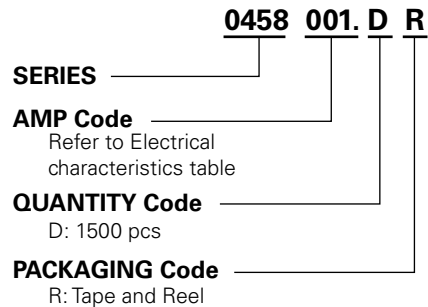
<b>Operating Temperature</b>	-55°C to 125°C with proper derating
<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B (5 cycles -65°C to +125°C)
<b>Vibration</b>	MIL-STD-202, Method 201 (10-55 Hz)
<b>Moisture Resistance</b>	MIL-STD-202, Method 106, High Humidity (90-98%RH), Heat (65°C)
<b>Salt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

### Dimensions



Recommended Pad Layout

### Part Numbering System



**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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