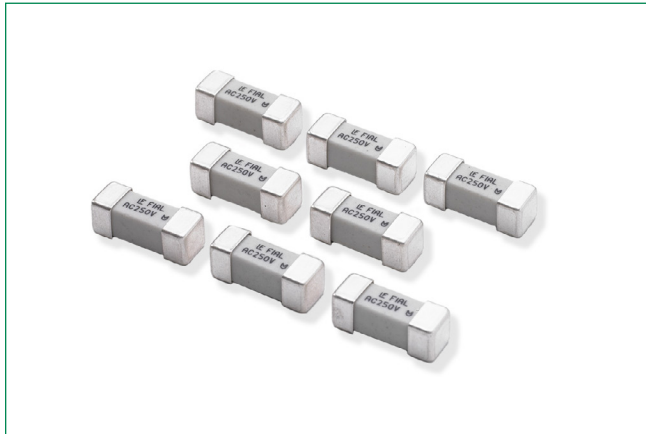


# 464 Series

## NANO<sup>2</sup>® > 250V UMF > Fast-Acting Fuse



### Description

The 464 Series fuse is a surface mount Nano<sup>2</sup> fuse that conforms to IEC 60127-4. This IEC standard addresses Universal Modular Fuse-links (UMF) which are accepted world-wide without any additional country-specific deviations.

### Features & Benefits

- Fast-Acting
- Listed to IEC 60127-4, Universal Modular Fuse-Links (UMF)
- 250VAC Voltage rating
- RoHS compliant and Halogen Free
- Conforms with Low Voltage Directive (LVD) and Electrical Equipment Safety Regulation
- Conforms to DENAN's Appendix 3

### Additional Information



Resources



Accessories



Samples

### Applications

- Power supply
- Lighting system
- White goods
- Industrial equipment

### Electrical Characteristics for Series

% of Ampere Rating	Opening Time
125%	1 hour, Minimum
200%	2 minutes, Maximum
1000%	0.001 sec., Min.; 0.01 sec., Max.

### Agency Approvals

Agency	Agency File Number	Ampere Range
	NBK030205-E10480B	1A - 5A
	NBK101105-E184655	6.3A
	E184655	0.25A - 6.3A
	HU-003208	0.5A - 6.3A
	N/A	0.5A - 6.3A
	N/A	0.5A - 6.3A

### Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Nominal Voltage Drop (mV)	Agency Approvals				
0.500	.500	250	100A@250VAC	0.2373	0.22	600	-	x	x	x	x
0.800	.800	250		0.1159	0.308	400	-	x	x	x	x
1.00	.001.	250		0.0762	0.51	300	x	x	x	x	x
1.25	1.25	250		0.0580	0.98	300	x	x	x	x	x
1.60	01.6	250		0.0448	1.15	300	x	x	x	x	x
2.00	002.	250		0.0354	2.48	300	x	x	x	x	x
2.50	02.5	250		0.0288	3.99	300	x	x	x	x	x
3.15	3.15	250		0.0206	8.05	300	x	x	x	x	x
4.00	004.	250		0.0156	13.85	300	x	x	x	x	x
5.00	005.	250		0.0119	23.6	300	x	x	x	x	x
6.30	06.3	250		0.0093	35.912	300	x	x	x	x	x

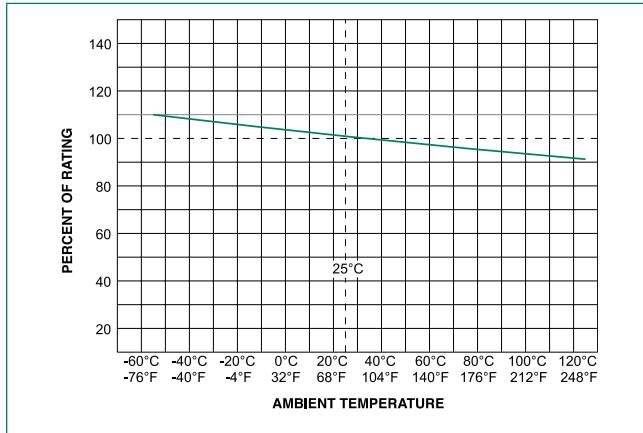
**Notes:**

- I<sup>2</sup>t calculated at 8ms.
- Resistance is measured at 10% of rated current, 25°C
- For information and availability of additional ratings please contact Littelfuse

# 464 Series

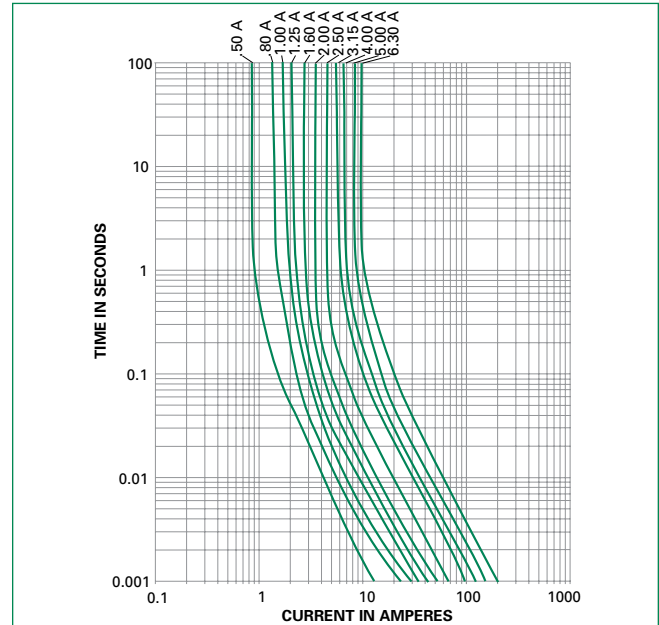
## NANO<sup>2</sup>® > 250V UMF > Fast-Acting Fuse

### Temperature Re-rating Curve

**Note:**

1. Rerating depicted in this curve is in addition to the standard derating of 15% for continuous operation.

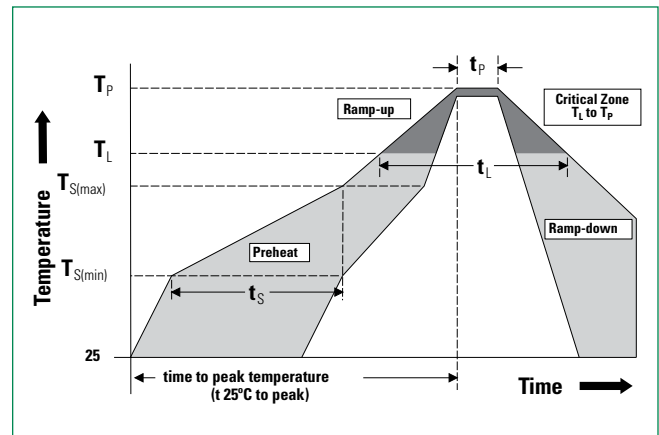
### Average Time Current Curves



### Soldering Parameters

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

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



# 464 Series

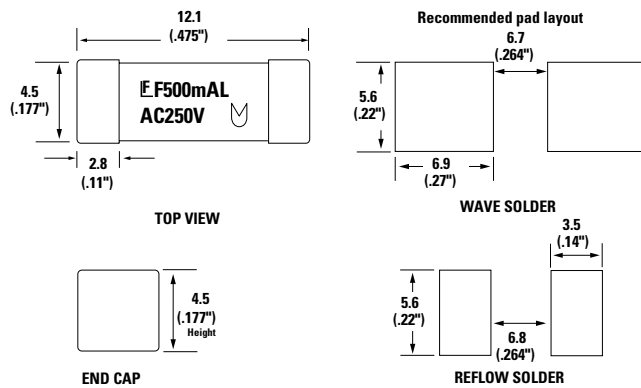
## NANO<sup>2</sup>® > 250V UMF > Fast-Acting Fuse

### Product Characteristics

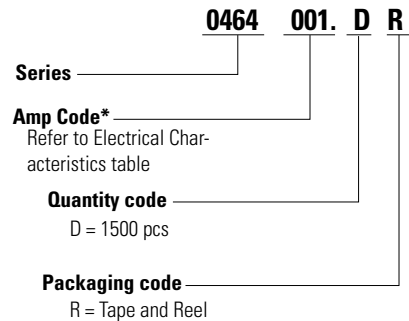
<b>Materials</b>	Body: Ceramic Terminations: Silver-plated Caps
<b>Product Marking</b>	Brand, Ampere Rating, Voltage Rating, UMF Logo
<b>Operating Temperature</b>	-55°C to 125°C
<b>Moisture Sensitivity Level</b>	Level 1, J-STD-020
<b>Solderability</b>	IEC 60127-4
<b>Insulation Resistance (after Opening)</b>	IEC 60127-4 (0.1Mohm min @ 500VDC)

<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B, 5 cycles, -65°C / +125°C
<b>Mechanical Shock</b>	MIL-STD-202, Method 213, Test Condition A
<b>Vibration</b>	MIL-STD-202, Method 201 (10-55 Hz)
<b>Moisture Resistance</b>	MIL-STD-202, Method 106, 10 cycles
<b>Salt Spray</b>	MIL-STD-202, Method 101, Test Condition B (48hrs)
<b>Resistance to Soldering Heat</b>	IEC 60127-4

### Dimensions mm(inches)



### Part Numbering System



**\*Example:**  
2.5 amp product is 046402.5 DR (1 amp product shown above).

### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
24mm Tape and Reel	EIA RS-481-1 (IEC 286, part 3)	1500	DR

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