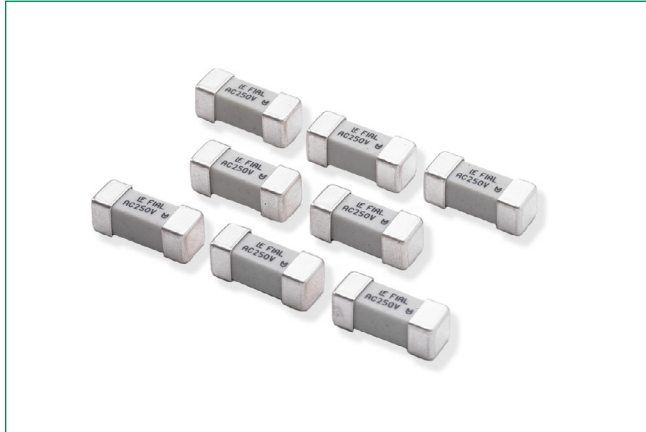


# 464 Series

## 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
PS E	NBK030205-E10480B	1A - 5A
	NBK101105-E184655	6.3A
M	E184655	0.25A - 6.3A
△	HU-003208	0.5A - 6.3A
CE	N/A	0.5A - 6.3A
UKCA	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				
							PS E	M	CE	UKCA	△
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

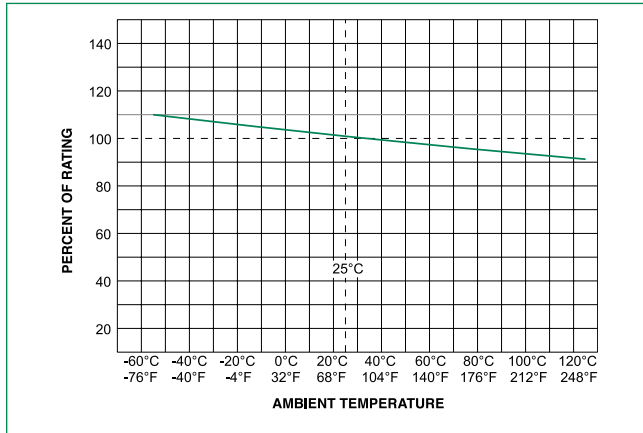
**Notes:**

- 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

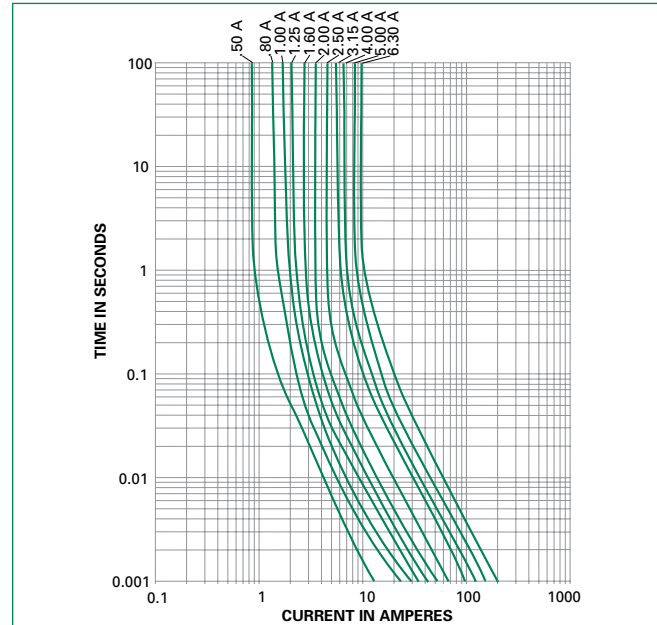
## NANO<sup>2</sup>® > 250V UMF > Fast-Acting Fuse

### Temperature Re-rating Curve

**Note:**

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

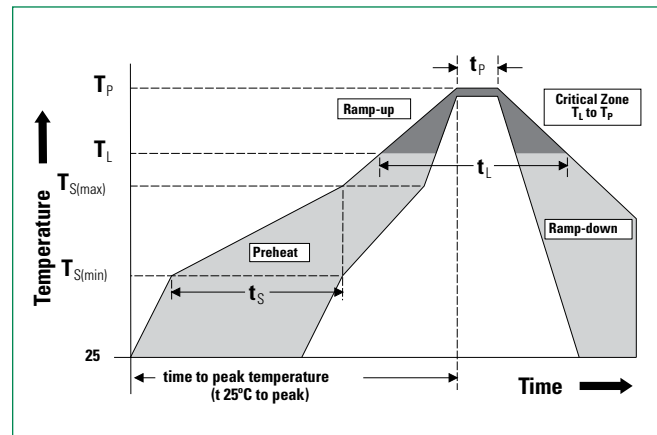
### Average Time Current Curves



### 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

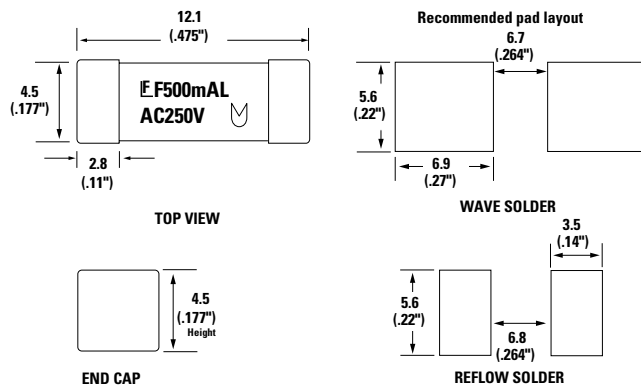
## NANO<sup>2</sup>® > 250V UMF > Fast-Acting Fuse

### Product Characteristics

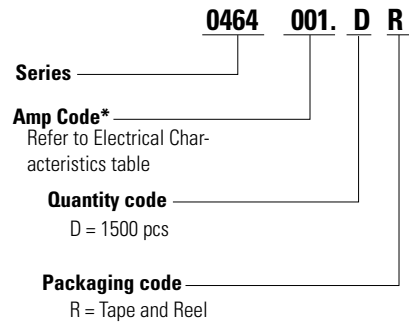
<b>Materials</b>	Body: Ceramic Terminations: Silver-plated Caps
<b>Product Marking</b>	Brand, Ampere Rating, Voltage Rating, UMF Logo
<b>Operating Temperature</b>	-55°C to 125°C
<b>Moisture Sensitivity Level</b>	Level 1, J-STD-020
<b>Solderability</b>	IEC 60127-4
<b>Insulation Resistance (after Opening)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

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at: [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).