## **Surface Mount Fuses** NANO<sup>2®</sup> > 250V UMF > Fast-Acting Fuse > 464 Series

### 464 Series Fuse









#### **Agency Approvals**

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE	
PS	NBK030205-E10480B	1A - 5A	
Ē	NBK101105-E184655	6.3A	
M	E184655	0.25A - 6.3A	

#### **Description**

The Surface Mount Nano<sup>2®</sup> 250V Fuse UMF product family complies with IEC Publication IEC60127-4-Universal Modular Fuse-Links [UMF]. This IEC standard has been accepted world wide.

#### **Features**

- Fast Acting
- Listed to IEC 60127-4, Universal Modular Fuse-Links (UMF)
- 250VAC Voltage rating
- RoHS compliant and Halogen Free

#### **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.	

#### **Additional Information**







#### **Electrical Specifications by Item**

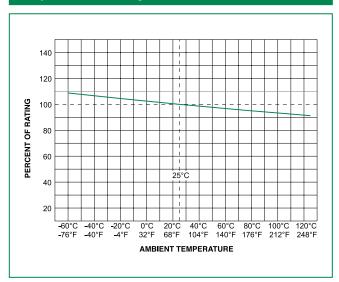
Ampere	Max		Nominal Cold	Nominal	Nominal	Agency Approvals		
Rating (A)	Rating Amp Code Rating	Rating	Interrupting Rating	Resistance (Ohms)		Voltage Drop (mV)	PSE	M
0.500	.500	250		0.2373	0.22	600		Х
0.800	.800	250		0.1159	0.308	400		Х
1.00	001.	250	100A@250VAC	0.0762	0.51	300	X	X
1.25	1.25	250		0.0580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

#### 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



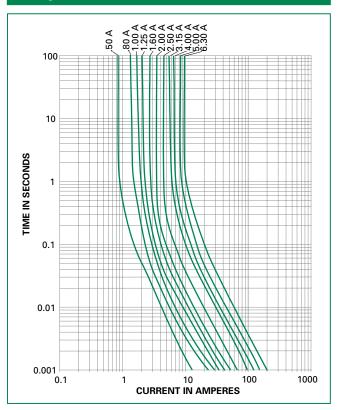
#### **Temperature Re-rating Curve**



#### Note:

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

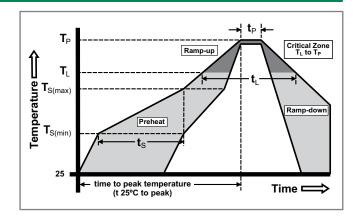
#### **Average Time Current Curves**



#### **Soldering Parameters**

Reflow Condition		Pb – Free assembly	
	-Temperature Min (T <sub>s(min)</sub> )	150°C	
Pre Heat	-Temperature Max (T <sub>s(max)</sub> )	200°C	
	-Time (Min to Max) (t <sub>s</sub> )	60 – 120 secs	
Average ramp up rate (Liquidus Temp $(T_L)$ to peak		5°C/second max.	
T <sub>S(max)</sub> to T	Ramp-up Rate	5°C/second max.	
Reflow	-Temperature (T <sub>L</sub> ) (Liquidus)	217°C	
	-Temperature (t <sub>L</sub> )	60 – 90 seconds	
PeakTemperature (T <sub>P</sub> )		260+0/-5 °C	
Time within 5°C of actual peak Temperature (t <sub>p</sub> )		20 - 40 seconds	
Ramp-dov	vn Rate	5°C/second max.	
Time 25°C to peakTemperature (T <sub>P</sub> )		8 minutes max.	
Do not exceed		260°C	
		260°C Peak	

Temperature, 10 seconds max.



**Wave Soldering Parameters** 

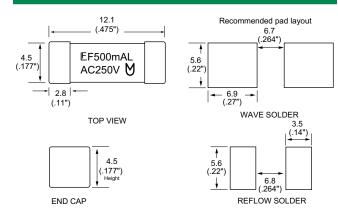
# Surface Mount Fuses NANO<sup>2®</sup> > 250V UMF > Fast-Acting Fuse > 464 Series

#### **Product Characteristics**

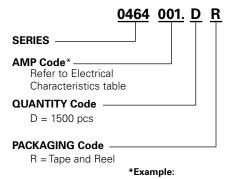
Materials	Body: Ceramic Terminations: Silver-plated Caps	
Product Marking	Brand, Ampere Rating, Voltage Rating, UMF Logo	
Operating Temperature	-55°C to 125°C	
Moisture Sensitivity Level	Level 1, J-STD-020	
Solderability	IEC 60127-4	
Insulation Resistance (after Opening)	IEC 60127-4 (0.1Mohm min @ 500VDC)	

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

### **Dimensions**



### **Part Numbering System**



2.5 amp product is 0464**02.5** 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