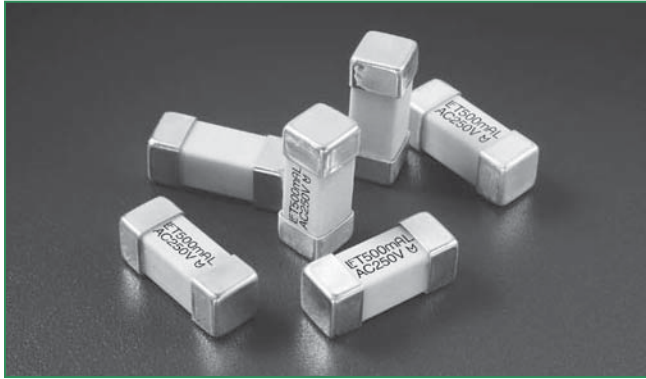


### RoHS HF 465 Series Fuse



#### Description

The Surface Mount Nano<sup>2</sup> 250V UMF product family complies with IEC Publication IEC60127-4-Universal Modular Fuse-Links [UMF]. This IEC standard has been accepted by UL/CSA making it the first global fuse standard.

#### Features

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

#### Agency Approvals

AGENCY	AGENCY FILE NUMBER	AMPERE RANGE
	NBK030205-E108480B	1A - 6.3A
	E184655A,B	250mA - 6.3A

#### Applications

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

#### Electrical Characteristics for Series

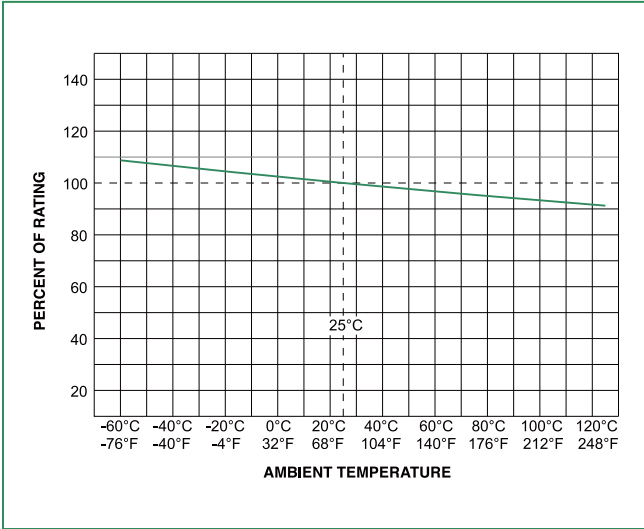
% of Ampere Rating	Opening Time
125%	1 hour, Minimum
200%	2 minutes, Maximum
1000%	0.01 sec., Min.; 0.1 sec., Max.

#### 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)	Agency Approvals	
1.00	001.	250	100 amperes @250VAC	0.1070	2.8	x	x
1.25	1.25	250		0.0830	5.6	x	x
1.60	01.6	250		0.0560	9.2	x	x
2.00	002.	250		0.0390	14.9	x	x
2.50	02.5	250		0.0260	21.0	x	x
3.15	3.15	250		0.0210	31.7	x	x
4.00	004.	250		0.0160	48.4	x	x
5.00	005.	250		0.0130	87.0	x	x
6.30	06.3	250		0.0088	144.4	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

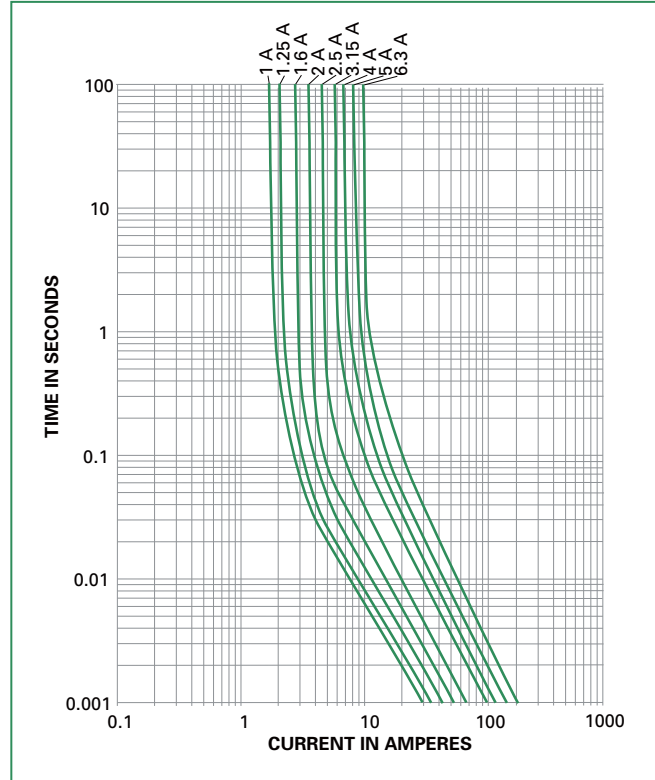
## Temperature Derating Curve



Note:

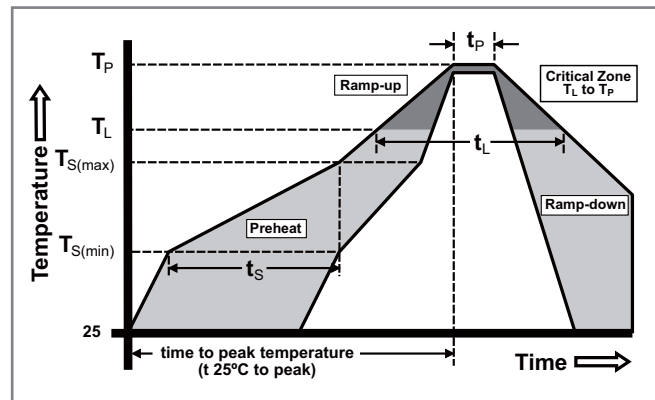
1. Derating depicted in this curve is in addition to the standard derating of 15% for continuous operation.

## Average Time Current Curves



## Soldering Parameters

Reflow Condition	Pb – Free assembly	
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 ( $T_p$ )	250 <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	
Wave Soldering Parameters	260°C Peak Temperature, 3 seconds max.	

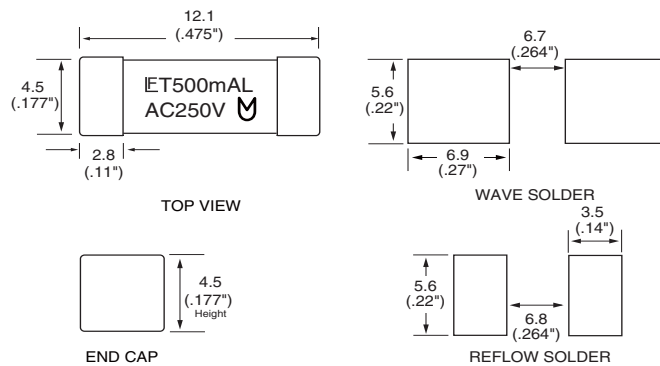


### Product Characteristics

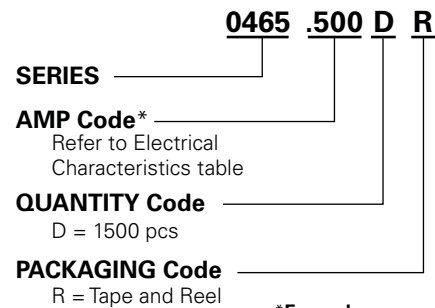
<b>Materials</b>	Body: High Performance Ceramic Terminations: Silver plated brass.
<b>Product Marketing</b>	Brand, Ampere Rating, Voltage Rating, UMF Logo
<b>Operating Temperature</b>	-55°C to 125°C.
<b>Moisture Sensitivity Level</b>	Level 1, J-STD-020C
<b>Solderability</b>	IEC60127-4
<b>Insulation Resistance (after opening)</b>	IEC 60127-4 (0.1Mohm min @ 500VDC)
<b>Shock</b>	MIL-STD-202, Method 213, Test Condition A

<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B , 5 cycles, -65°C to 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



### Part Numbering System



**\*Example:**  
2.5 amp product is 046502.5DR  
(0.5 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

