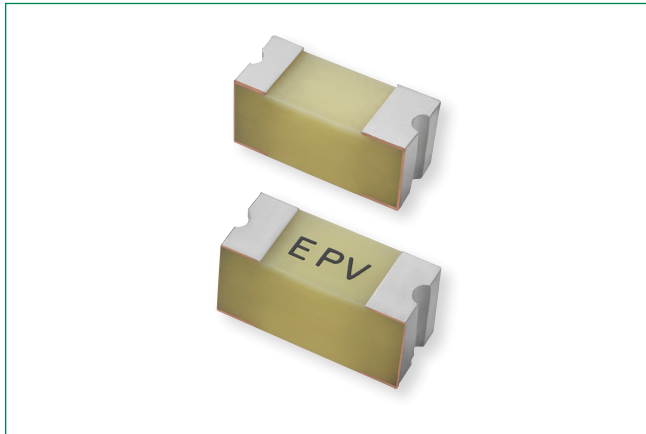


# Surface Mount Fuse

## 400PV Series > 2410 Photovoltaic Fuse



### Description

Littelfuse 400PV Series is a 2410 size Surface Mount Fuse which offers relatively low resistance. It provides UL 248-19 compliant overcurrent protection for photovoltaic (PV) cells.

The 400PV series meets environment standards and is able to operate at high temperatures.

### Features & Benefits

- Wide operating temperature range
- 100% lead-free, halogen-free, and RoHS compliant
- Reliable overcurrent performance in high temperature environments
- Small and compact
- Surface mountable
- Compatible with common soldering assembly processes
- Recognized to UL/CSA 248-1 and UL/CSA 248-19

### Agency Approvals

Agency	Agency File Number	Ampere Rating
c UL US	E339112	0.375 A

### Electrical Characteristics

% of Ampere Rating	Ampere Rating	Opening Time
100%	0.375 A	4 hours, Minimum
135%	0.375 A	3600 seconds Maximum
200%	0.375 A	240 seconds Maximum

### Electrical Specifications

Ampere Rating (A)	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> Sec.) <sup>1</sup>	Agency Approvals
0.375	86	10,000 A @ 86 VDC	0.31	0.010	c UL US
					X

#### Note

1. Nominal Melting I<sup>2</sup>t measured at 1 msec. opening time

### Additional Information



Resources



Accessories

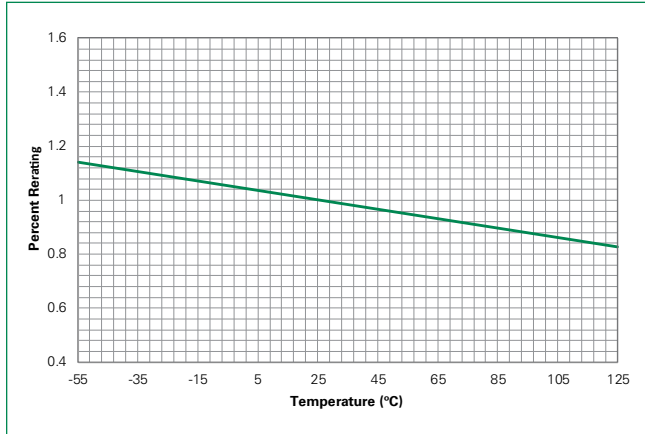


Samples

# Surface Mount Fuse

## 400PV Series > 2410 Photovoltaic Fuse

### Temperature Re-rating Curve



**Note**

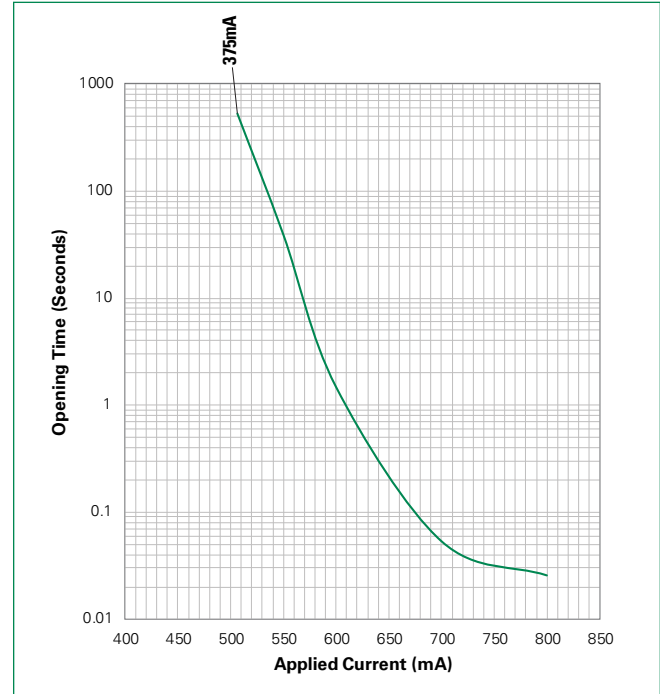
Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

**Example**

For continuous operation at 85 degrees celsius, the fuse should be rerated as follows:

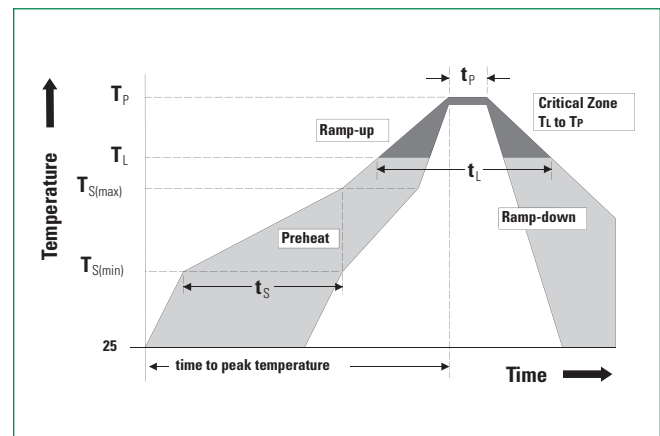
$$I = (0.75)(0.90)I_n = (0.675)I_n$$

### Average Time Current Curve



### Soldering Parameters – Reflow Soldering

<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>		3° 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>		10–30 seconds
<b>Ramp-down Rate</b>		6° 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
<b>Wave Soldering</b>	260° C, 10 seconds max.	



# Surface Mount Fuse

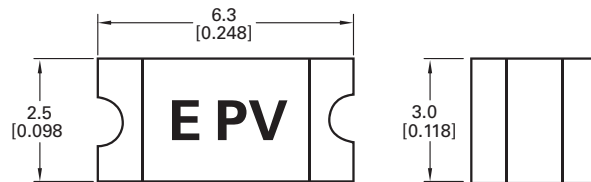
## 400PV Series > 2410 Photovoltaic Fuse

### Product Characteristics

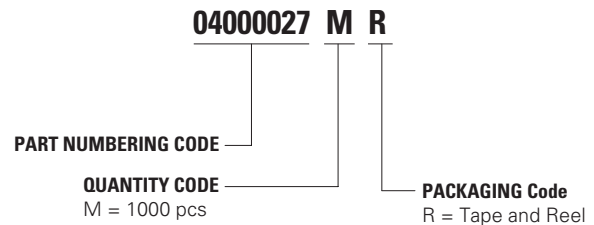
<b>Materials</b>	Body: Epoxy resin (UL 94 V-0 certified) Terminations: Cu/Ni/Sn (100% Pb-free)
<b>Moisture Sensitivity Level</b>	IPC/JEDEC J-STD-020C, Level 1
<b>Solderability</b>	IPC/EIC/JEDEC J-STD-002B, Condition B
<b>Humidity</b>	UL 248-19 Section 6.7.3
<b>Resistance to Soldering Heat</b>	MIL-STD-202, Method 210F, Condition B
<b>Thermally Induced Drift</b>	UL 248-19 Section 6.6.1
<b>Moisture Resistance</b>	MIL-STD-202, Method 106G

<b>Thermal Shock</b>	MIL-STD-202, Method 107G, Condition B-3
<b>Mechanical Shock</b>	MIL-STD-202, Method 213B, Condition A
<b>Vibration</b>	MIL-STD-202, Method 201A
<b>Vibration, High Frequency</b>	MIL-STD-202, Method 204D, Condition D
<b>Dissolution of Metallization</b>	IPC/EIC/JEDEC J-STD-002B, Condition D
<b>Terminal Strength</b>	IEC 60127-4
<b>Temperature Extremes</b>	UL 248-19 Section 6.6.2

### Dimensions



### Part Numbering System



### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
12 mm Tape and Reel	EIA-481/IEC 60286-3	1000	MR

**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 <http://www.littelfuse.com/disclaimer-electronics>.