

# POWR-GARD® Fuse Datasheet

## SPFI SERIES IN-LINE SOLAR FUSE

1000 V dc • 2–30 A



### Description

The Littelfuse SPFI solar fuse is designed to integrate into an in-line assembly within a wire harness. It has been specifically engineered to protect photovoltaic (PV) systems meeting UL 248-19 standards. The SPFI can be electrically insulated by either overmolding or using heat-shrink.

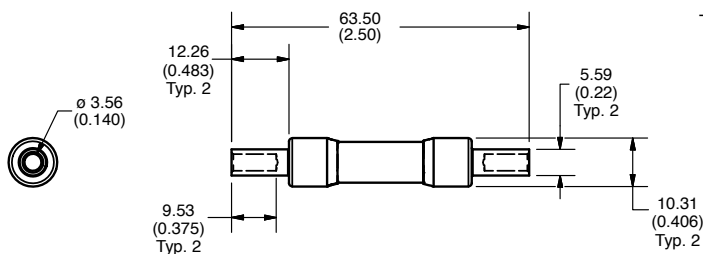
### Features/Benefits

- One-piece cap design, without joints, offers easier wire crimping and more streamlined molding
- No fuse holder required helps save space, time, and money
- 20,000 A Interrupting Rating

### Applications

- Photovoltaic wire harness

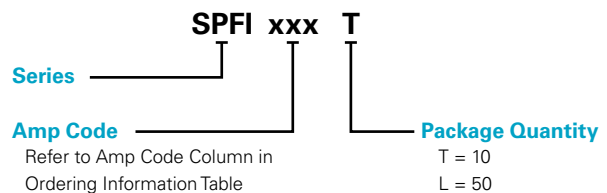
### Dimensions mm (in)



### Specifications

<b>Voltage Rating</b>	1000 V dc
<b>Amperage Rating</b>	2, 2.5, 3, 3.5, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30 A
<b>Interrupting Rating</b>	20 kA
<b>Time Constant</b>	≤ 1ms
<b>Material</b>	Body: Melamine Caps: Copper Alloy (Nickel Plated)
<b>Approvals</b>	UL 248-19 Recognized (File: E339112) TUV (Cert: J 50505290)
<b>Applicable Standards</b>	UL 248-1, 248-19 IEC 60269-6 (electrically only)
<b>Environmental</b>	RoHS Compliant REACH
<b>Country of Origin</b>	Mexico
<b>US Patent</b>	9,564,281

### Part Numbering System



### Web Resources

Downloadable CAD drawings and other technical information: [littelfuse.com/SPFI](http://littelfuse.com/SPFI)

### Recommended Crimping Tool

T&B Sta-Kon ERG4002

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### Ordering Information

SERIES	AMPERAGE	AMPERE CODE	CATALOG NUMBER	PRODUCT MARKING	PACK QUANTITY	ORDERING NUMBER	UPC
SPFI	2	002.	SPFI002	SPFI 2A	10	SPFI002.T	07945880898
					50	SPFI002.L	07945880899
SPFI	2.5	02.5	SPFI02.5	SPFI 2 ½A	10	SPFI02.5T	07945882604
					50	SPFI02.5L	07945882605
SPFI	3	003.	SPFI003	SPFI 3A	10	SPFI003.T	07945880853
					50	SPFI003.L	07945880854
SPFI	3.5	03.5	SPFI03.5	SPFI 3 ½A	10	SPFI03.5T	07945879544
					50	SPFI03.5L	07945879545
SPFI	4	004.	SPFI004	SPFI 4A	10	SPFI004.T	07945880900
					50	SPFI004.L	07945880901
SPFI	5	005.	SPFI005	SPFI 5A	10	SPFI005.T	07945880902
					50	SPFI005.L	07945880903
SPFI	6	006.	SPFI006	SPFI 6A	10	SPFI006.T	07945880855
					50	SPFI006.L	07945880856
SPFI	8	008.	SPFI008	SPFI 8A	10	SPFI008.T	07945880857
					50	SPFI008.L	07945880858
SPFI	10	010.	SPFI010	SPFI 10A	10	SPFI010.T	07945880859
					50	SPFI010.L	07945880860
SPFI	12	012.	SPFI012	SPFI 12A	10	SPFI012.T	07945880861
					50	SPFI012.L	07945880862
SPFI	15	015.	SPFI015	SPFI 15A	10	SPFI015.T	07945880863
					50	SPFI015.L	07945880864
SPFI	20	020.	SPFI020	SPFI 20A	10	SPFI020.T	07945880865
					50	SPFI020.L	07945880866
SPFI	25	025.	SPFI025	SPFI 25A	10	SPFI025.T	07945882668
					50	SPFI025.L	07945882669
SPFI	30	030.	SPFI030	SPFI 30A	10	SPFI030.T	07945882670
					50	SPFI030.L	07945882671

### Electrical Specifications

AMPERAGE	VOLTAGE	INTERRUPTING RATING	WIRE RANGE CU Only (Solid/Stranded)	NOM COLD RESISTANCE (ohm)	WATTS LOSS AT 100 % RATED CURRENT (W)	WATTS LOSS AT 80 % RATED CURRENT (W)	TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 20 kA
	DC	DC					
2	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.237	1.59	0.85	5
2.5	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.185	1.84	1.24	7.5
3	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.11	1.50	0.82	7.9
3.5	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.581	1.17	0.61	26
4	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.0519	1.49	0.84	23
5	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.04086	1.47	0.86	43
6	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.0281	1.35	0.77	80
8	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.0178	1.61	0.91	199
10	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.0125	1.76	1.00	401
12	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.00993	1.97	1.11	642
15	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.00799	2.28	1.38	505
20	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.0045	2.81	1.57	1313
25	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.00353	2.98	1.75	2371
30	1000	20 kA	10-12 AWG (6-4 mm <sup>2</sup> )	0.00284	3.92	2.13	2679

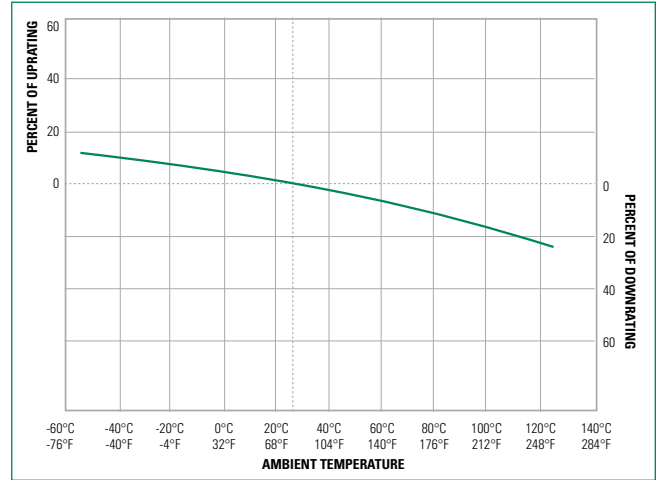
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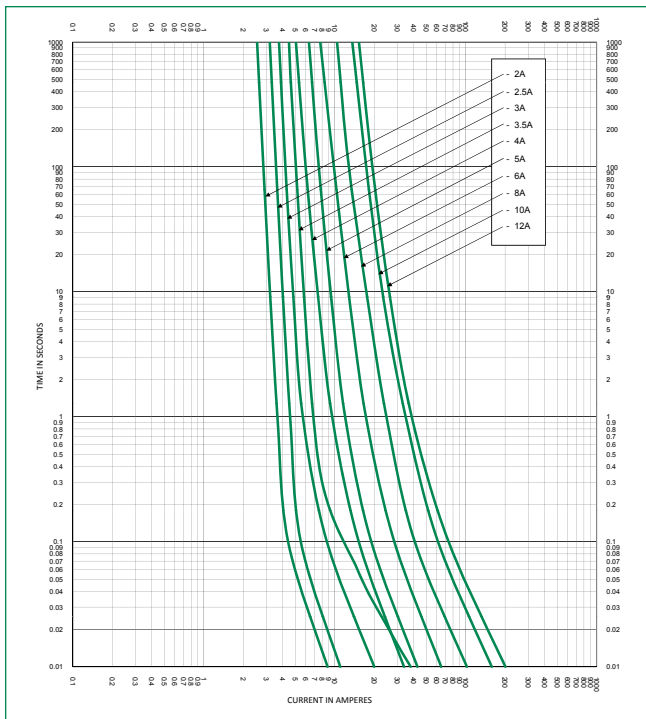
### Electrical Specification — Agency Requirements

AMPERE RATING	OPENING TIME (MINUTES)				
	100% of Amp Rating per UL	113% of Amp Rating per IEC	135% of Amp Rating per UL	145% of Amp Rating per IEC	200% of Amp Rating per UL
2–30	Temperature Stabilization	60 Min	60 Max	60 Max	4 Max

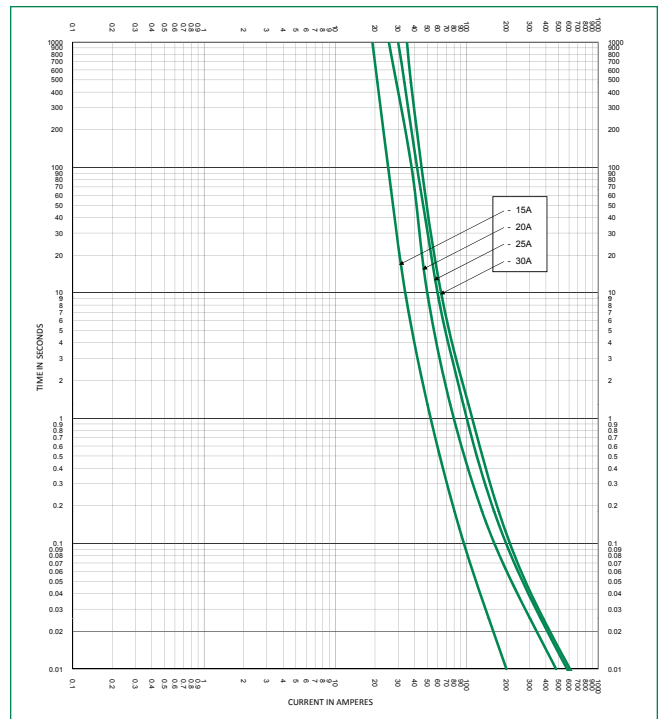
### Temperature Derating Curve (Temperature of Air Immediately Surrounding Fuse)



### Time Current Curve (2–12 A)



### Time Current Curve (15–30 A)



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