



**THE DATASHEET OF  
0SPF010.HXR**



# SPF-S SILVER PLATED 10X38mm SOLAR FUSES

1000 Vdc • 1-30 A



## Description

The SPF Solar Protection Fuse series has been specifically designed for the protection of photovoltaic (PV) systems. This family of Midget style fuses (10 x 38 mm) can safely protect PV modules and conductors from reverse-overcurrent conditions.

As PV systems have grown in size, so have the corresponding voltage requirements. This increase in system voltage has typically been intended to minimize power loss associated with long conductor runs. Standard circuit protection devices are not designed to completely protect photovoltaic panels. However, the SPF series is UL Listed to safely interrupt faulted circuits up to this demanding voltage level.

## Features/Benefits

- UL 248-19 Listed
- Meets IEC 60269-6 performance requirements
- 1-30 A ratings available
- 20,000 A Interrupting Rating: 1A - 20A
- 50,000 A Interrupting Rating: 25A - 30A

## Applications

- Inverters
- Combiner boxes
- Battery charge controllers

## Recommended Accessories

Fuse Holder: LPHV 1000 V dc POWR-Safe series  
Fuse Clips: 125003

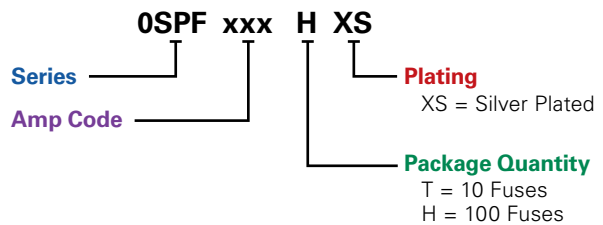
## Web Resources

Download technical documents: [littelfuse.com/spfs](http://littelfuse.com/spfs)

## Specifications

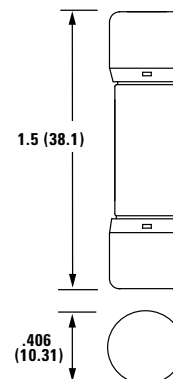
<b>Voltage Rating</b>	1000 VDC
<b>Amperage Rating</b>	1, 2, 3, 3.5, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30
<b>Interrupting Rating</b>	20 kA: 1A - 20A 50 kA: 25A - 30A
<b>Time Constant</b>	≤ 2ms
<b>Material</b>	Body: Melamine Caps: Copper Alloy (Silver Plated)
<b>Approvals</b>	UL 248-19 Listed (File: E339112) CSA Certified (File: 029862_0_000)
<b>Environmental</b>	RoHS Compliant
<b>Country of Origin</b>	Mexico

## Part Numbering System



SERIES	AMP	PACKAGE QUANTITY	MOUNTING METHOD	CATALOG NUMBER	ORDERING NUMBER
SPF-S	2	10	FERRULE	SPF002-S	OSPF002.TXS
SPF-S	3.5	10	FERRULE	SPF03.5-S	OSPF03.5.TXS

## Dimensions Inches (mm)



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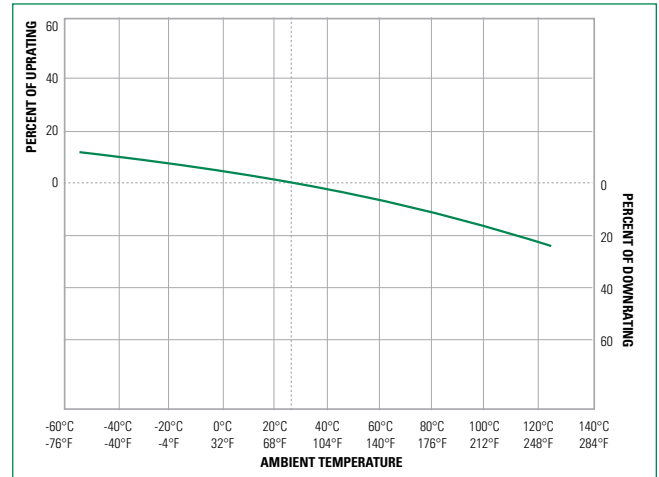
## Ordering Information

SERIES	AMPERAGE	AMP CODE	CATALOG NUMBER	PRODUCT MARKING	PACK QUANTITY	ORDERING NUMBER	UPC
SPF-S	1	001.	SPF001-S	SPF 1A-S	10	OSPF001.TXS	07945884195
					100	OSPF001.HXS	07945884194
SPF-S	2	002.	SPF002-S	SPF 2A-S	10	OSPF002.TXS	07945884197
					100	OSPF002.HXS	07945884196
SPF-S	3	003.	SPF003-S	SPF 3A-S	10	OSPF003.TXS	07945884199
					100	OSPF003.HXS	07945884198
SPF-S	3.5	03.5	SPF03.5-S	SPF 3 ½A-S	10	OSPF03.5TXS	07945884219
					100	OSPF03.5HXS	07945884218
SPF-S	4	004.	SPF004-S	SPF 4A-S	10	OSPF004.TXS	07945884201
					100	OSPF004.HXS	07945884298
SPF-S	5	005.	SPF005-S	SPF 5A-S	10	OSPF005.TXS	07945884203
					100	OSPF005.HXS	07945884202
SPF-S	6	006.	SPF006-S	SPF 6A-S	10	OSPF006.TXS	07945884205
					100	OSPF006.HXS	07945884204
SPF-S	8	008.	SPF008-S	SPF 8A-S	10	OSPF008.TXS	07945884207
					100	OSPF008.HXS	07945884206
SPF-S	10	010.	SPF010-S	SPF 10A-S	10	OSPF010.TXS	07945884209
					100	OSPF010.HXS	07945884208
SPF-S	12	012.	SPF012-S	SPF 12A-S	10	OSPF012.TXS	07945884211
					100	OSPF012.HXS	07945884210
SPF-S	15	015.	SPF015-S	SPF 15A-S	10	OSPF015.TXS	07945884213
					100	OSPF015.HXS	07945884212
SPF-S	20	020.	SPF020-S	SPF 20A-S	10	OSPF020.TXS	07945884215
					100	OSPF020.HXS	07945884214
SPF-S	25	025.	SPF025-S	SPF 25A-S	10	OSPF025.TXS	07945884217
					100	OSPF025.HXS	07945884216
SPF-S	30	030.	SPF030-S	SPF 30A-S	10	OSPF030.TXS	07945884221
					100	OSPF030.HXS	07945884220

## Electrical Specification — Agency Requirements

AMPERAGE RATING	OPENING TIME (MINUTES)			
	100% of Amp Rating per UL	105% of Amp Rating per IEC	135% of Amp Rating per UL	200% of Amp Rating per UL
1-30	Temperature Stabilization	60 Min	60 Max	4 Max

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

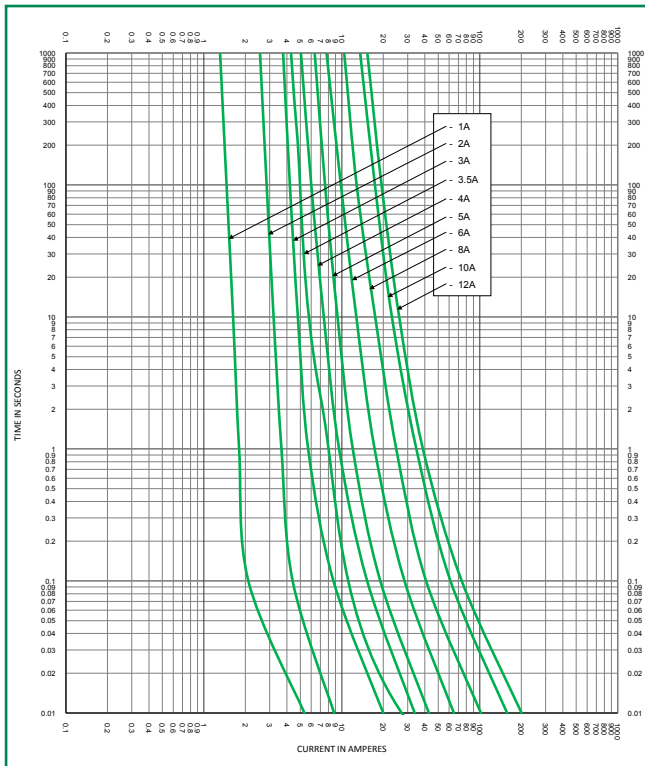


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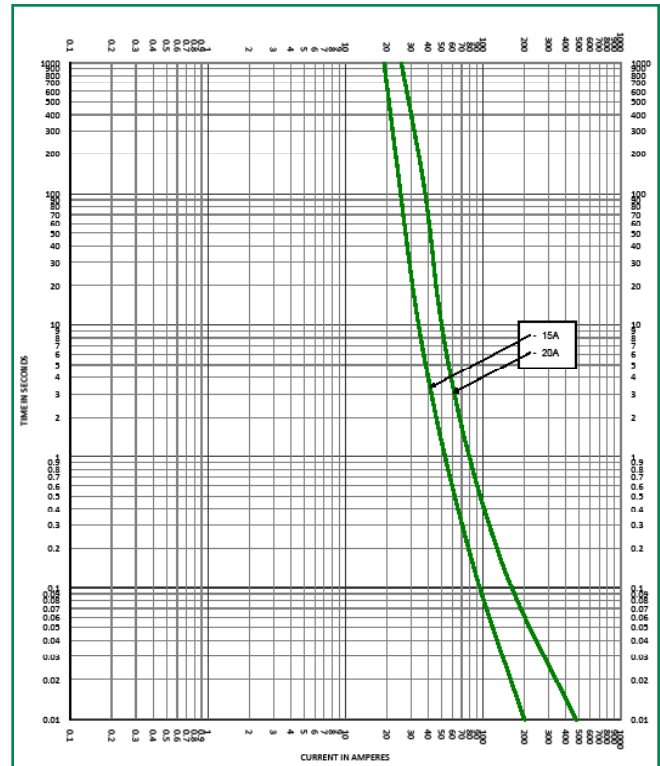
## Electrical Specifications

AMPERAGE	VOLTAGE	INTERRUPTING RATING (kA)	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	TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 50 kA
	DC	DC					
1	1000	20kA DC	0.394	0.60	0.41	0.6	—
2	1000	20kA DC	0.237	1.59	0.85	5	—
3	1000	20kA DC	0.11	1.50	0.82	7.9	—
3.5	1000	20kA DC	0.07787	1.37	0.78	11	—
4	1000	20kA DC	0.06127	1.49	0.84	23	—
5	1000	20kA DC	0.04086	1.47	0.86	43	—
6	1000	20kA DC	0.0281	1.35	0.77	80	—
8	1000	20kA DC	0.0178	1.61	0.91	199	—
10	1000	20kA DC	0.0125	1.76	1.00	401	—
12	1000	20kA DC	0.00993	1.97	1.11	642	—
15	1000	20kA DC	.007855	2.28	1.38	505	—
20	1000	20kA DC	0.0045	2.81	1.57	1313	—
25	1000	50kA DC	0.00370	3.331	1.878	2141	2433
30	1000	50kA DC	0.00299	3.845	2.147	3290	3810

Time Current Curve (1-12 A)

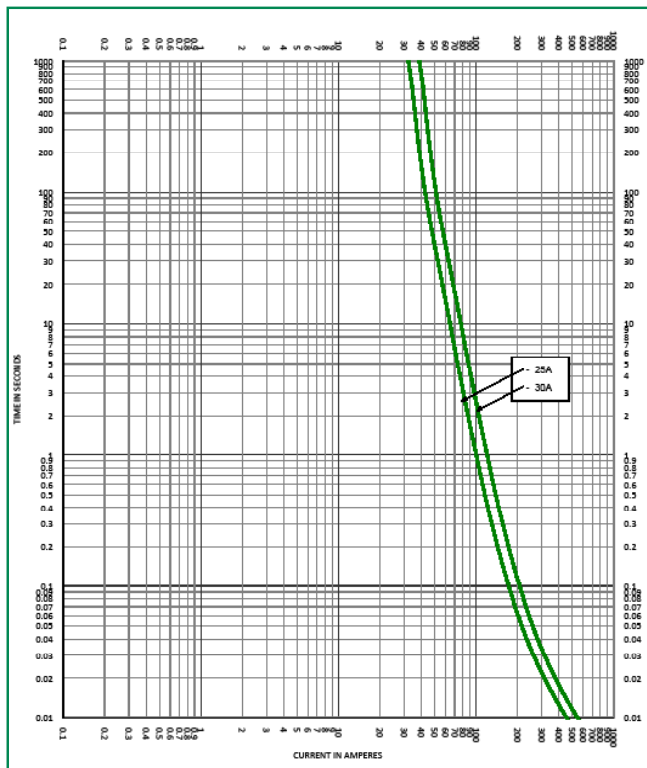


Time Current Curve (15-20 A)



# SPF-S SILVER PLATED SERIES SOLAR FUSES

## Time Current Curve (25-30 A)



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