

# POWR-GARD® Fuse

## SPXV-S SERIES SOLAR FUSE

1500 V dc • 1 – 20 A

cULus CE gPV RoHS REACH



### Description

The Littelfuse SPXV-S Series silver-plated string fuse has been specifically designed for the protection of photovoltaic (PV) systems.

It is available in multiple amperage ratings to match various requirements in a range of applications.

### Features/Benefits

- Offers higher amperage protection in less space for increased design flexibility
- Full range, fast-acting fuse helps eliminate common low-overload faults
- Silver-plated caps help improve contact resistance for better conductivity
- Up to 50,000 A interrupting rating

### Applications

- Inverters
- Combiner boxes

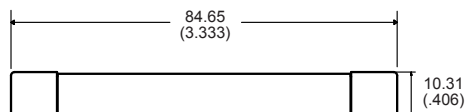
### Recommended Crimping Tool

**Fuse Holder:** LFPXV001

**Fuse Clips:** 125003

### Dimensions mm (inches)

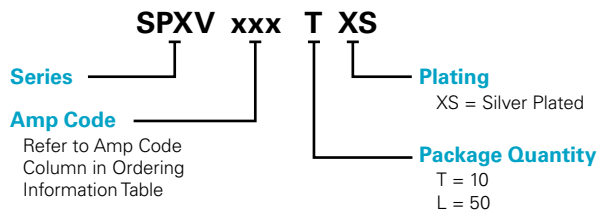
1 – 20 A



### Specifications

|                             |                                                                |
|-----------------------------|----------------------------------------------------------------|
| <b>Voltage Rating</b>       | 1500 V dc                                                      |
| <b>Amperage Rating</b>      | 1, 2, 2.25, 2.5, 3, 3.5, 4, 4.5, 5, 6, 8, 10, 12, 15, 16, 20 A |
| <b>Interrupting Rating</b>  | 30 kA (50 kA Self-Certified)                                   |
| <b>Time Constant</b>        | ≤ 1ms                                                          |
| <b>Material</b>             | Body: Melamine<br>Caps: Copper Alloy (Silver Plated)           |
| <b>Approvals</b>            | cULus (File: E339112)                                          |
| <b>Applicable Standards</b> | UL 248-1, 248-19<br>IEC 60269-6                                |
| <b>Environmental</b>        | RoHS Compliant<br>REACH                                        |
| <b>Country of Origin</b>    | Mexico                                                         |

### Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|----------------|-----------------|
| SPXVS  | 6   | 10               | SPXV006-S      | SPXV006.TXS     |
| SPXVS  | 20  | 50               | SPXV020-S      | SPXV020.LXS     |

### Web Resources

Download technical resources at:

**Littelfuse.com/SPXVS**

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### Ordering Information

| SERIES | AMPERAGE | AMPERE CODE | CATALOG NUMBER | FUSE LABEL ID | PACK QUANTITY | ORDERING NUMBER | UPC         |
|--------|----------|-------------|----------------|---------------|---------------|-----------------|-------------|
| SPXV   | 1        | 001.        | SPXV001-S      | SPXV 1-S      | 10            | SPXV001.TXS     | 07945822105 |
|        |          |             |                |               | 50            | SPXV001.LXS     | 07945822106 |
| SPXV   | 2        | 002.        | SPXV002-S      | SPXV 2-S      | 10            | SPXV002.TXS     | 07945822107 |
|        |          |             |                |               | 50            | SPXV002.LXS     | 07945822108 |
| SPXV   | 2.25     | 2.25        | SPXV2.25-S     | SPXV 2 ¼-S    | 10            | SPXV2.25TXS     | 07945822109 |
|        |          |             |                |               | 50            | SPXV2.25LXS     | 07945822110 |
| SPXV   | 2.5      | 02.5        | SPXV02.5-S     | SPXV 2 ½-S    | 10            | SPXV02.5TXS     | 07945822111 |
|        |          |             |                |               | 50            | SPXV02.5LXS     | 07945822112 |
| SPXV   | 3        | 003.        | SPXV003-S      | SPXV 3-S      | 10            | SPXV003.TXS     | 07945822113 |
|        |          |             |                |               | 50            | SPXV003.LXS     | 07945822114 |
| SPXV   | 3.5      | 03.5        | SPXV03.5-S     | SPXV 3 ½-S    | 10            | SPXV03.5TXS     | 07945822115 |
|        |          |             |                |               | 50            | SPXV03.5LXS     | 07945822116 |
| SPXV   | 4        | 004.        | SPXV004-S      | SPXV 4-S      | 10            | SPXV004.TXS     | 07945819882 |
|        |          |             |                |               | 50            | SPXV004.LXS     | 07945819884 |
| SPXV   | 4.5      | 04.5        | SPXV04.5-S     | SPXV 4 ½-S    | 10            | SPXV04.5TXS     | 07945828571 |
|        |          |             |                |               | 50            | SPXV04.5LXS     | 07945828572 |
| SPXV   | 5        | 005.        | SPXV005-S      | SPXV 5-S      | 10            | SPXV005.TXS     | 07945819886 |
|        |          |             |                |               | 50            | SPXV005.LXS     | 07945819888 |
| SPXV   | 6        | 006.        | SPXV006-S      | SPXV 6-S      | 10            | SPXV006.TXS     | 07945884279 |
|        |          |             |                |               | 50            | SPXV006.LXS     | 07945884278 |
| SPXV   | 8        | 008.        | SPXV008-S      | SPXV 8-S      | 10            | SPXV008.TXS     | 07945884281 |
|        |          |             |                |               | 50            | SPXV008.LXS     | 07945884280 |
| SPXV   | 10       | 010.        | SPXV010-S      | SPXV 10-S     | 10            | SPXV010.TXS     | 07945884283 |
|        |          |             |                |               | 50            | SPXV010.LXS     | 07945884282 |
| SPXV   | 12       | 012.        | SPXV012-S      | SPXV 12-S     | 10            | SPXV012.TXS     | 07945884285 |
|        |          |             |                |               | 50            | SPXV012.LXS     | 07945884284 |
| SPXV   | 15       | 015.        | SPXV015-S      | SPXV 15-S     | 10            | SPXV015.TXS     | 07945884287 |
|        |          |             |                |               | 50            | SPXV015.LXS     | 07945884286 |
| SPXV   | 16       | 016.        | SPXV016-S      | SPXV 16-S     | 10            | SPXV016.TXS     | 07945827710 |
|        |          |             |                |               | 50            | SPXV016.LXS     | 07945827708 |
| SPXV   | 20       | 020.        | SPXV020-S      | SPXV 20-S     | 10            | SPXV020.TXS     | 07945884289 |
|        |          |             |                |               | 50            | SPXV020.LXS     | 07945884288 |

# POWR-GARD® Fuse

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### Electrical Specifications

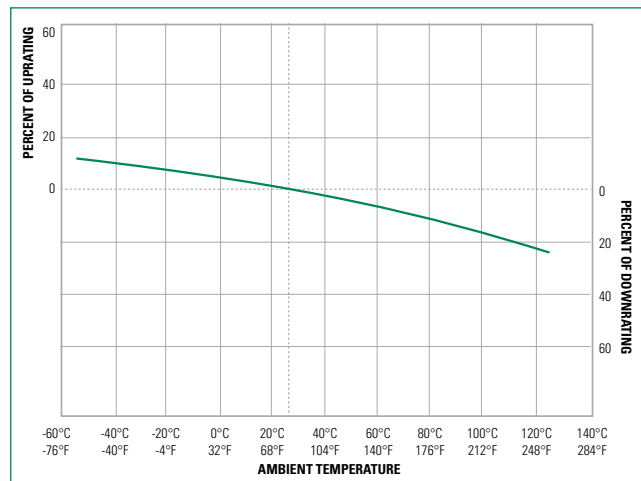
| AMPERAGE | VOLTAGE | INTERRUPTING RATING | NOM COLD RESISTANCE (ohm) | WATTS LOSS AT 100% RATED CURRENT (W) | WATTS LOSS AT 80% RATED CURRENT (W) | MELTING I <sup>2</sup> T (A <sup>2</sup> S) (1500 V dc) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> S) 15 kA (1500 V dc) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> S) 30kA (1500 V DC) |
|----------|---------|---------------------|---------------------------|--------------------------------------|-------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|
|          | DC      | DC                  |                           |                                      |                                     |                                                         |                                                                      |                                                                     |
| 1        | 1500    | 50 kA*              | 0.926                     | 1.67                                 | 0.90                                | 0.27                                                    | 0.5                                                                  | —                                                                   |
| 2        | 1500    | 50 kA*              | 0.289                     | 2.17                                 | 1.10                                | 1.35                                                    | 3.2                                                                  | —                                                                   |
| 2.25     | 1500    | 50 kA*              | 0.249                     | 2.43                                 | 1.21                                | 1.59                                                    | 4.4                                                                  | —                                                                   |
| 2.5      | 1500    | 50 kA*              | 0.223                     | 2.90                                 | 1.40                                | 3.68                                                    | 5.8                                                                  | —                                                                   |
| 3        | 1500    | 50 kA*              | 0.159                     | 2.91                                 | 1.41                                | 6                                                       | 12                                                                   | —                                                                   |
| 3.5      | 1500    | 50 kA*              | 0.124                     | 2.95                                 | 1.47                                | 10                                                      | 19                                                                   | 16                                                                  |
| 4        | 1500    | 50 kA*              | 0.123                     | 2.96                                 | 1.65                                | 14                                                      | 24                                                                   | —                                                                   |
| 4.5      | 1500    | 50 kA*              | 0.102                     | 2.81                                 | 1.61                                | 34                                                      | 55                                                                   | —                                                                   |
| 5        | 1500    | 50 kA*              | 0.076                     | 3.01                                 | 1.66                                | 48                                                      | 71                                                                   | —                                                                   |
| 6        | 1500    | 50 kA*              | 0.058                     | 3.05                                 | 1.71                                | 49                                                      | 75                                                                   | —                                                                   |
| 8        | 1500    | 50 kA*              | 0.035                     | 3.26                                 | 1.84                                | 121                                                     | 214                                                                  | —                                                                   |
| 10       | 1500    | 50 kA*              | 0.022                     | 3.25                                 | 1.82                                | 407                                                     | 509                                                                  | —                                                                   |
| 12       | 1500    | 50 kA*              | 0.016                     | 3.34                                 | 1.89                                | 798                                                     | 951                                                                  | 1154                                                                |
| 15       | 1500    | 50 kA*              | 0.013                     | 5.27                                 | 3.05                                | 299                                                     | 637                                                                  | —                                                                   |
| 16       | 1500    | 50 kA*              | 0.013                     | 5.32                                 | 3.08                                | 404                                                     | 666                                                                  | —                                                                   |
| 20       | 1500    | 50 kA*              | 0.009                     | 5.38                                 | 3.14                                | 701                                                     | 1464                                                                 | 1738                                                                |

\* Self-certified

### Electrical Specification — Agency Requirements

| AMPERAGE RATING | OPENING TIME (MINUTES)          |                                  |                                 |                                 |
|-----------------|---------------------------------|----------------------------------|---------------------------------|---------------------------------|
|                 | 100 % of Amperage Rating per UL | 105 % of Amperage Rating per IEC | 135 % of Amperage Rating per UL | 200 % of Amperage Rating per UL |
| 1–20            | Temperature Stabilization       | 60 Min                           | 60 Max                          | 4 Max                           |

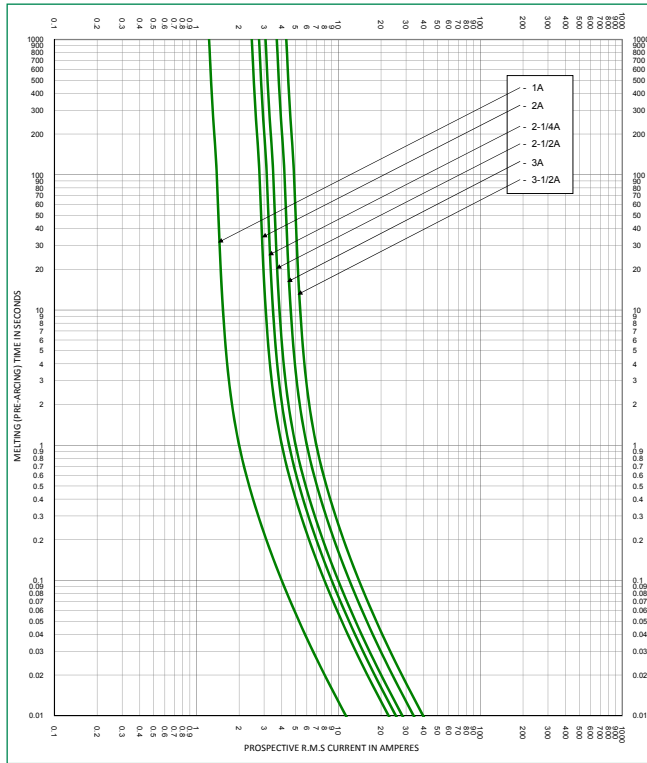
### Temperature Derating Curve (Temperature of Air Immediately Surrounding Fuse)



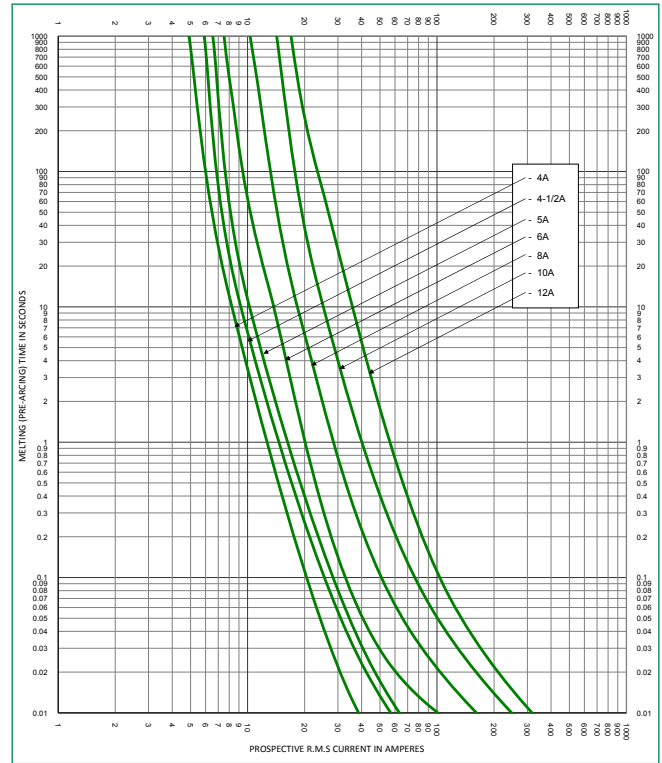
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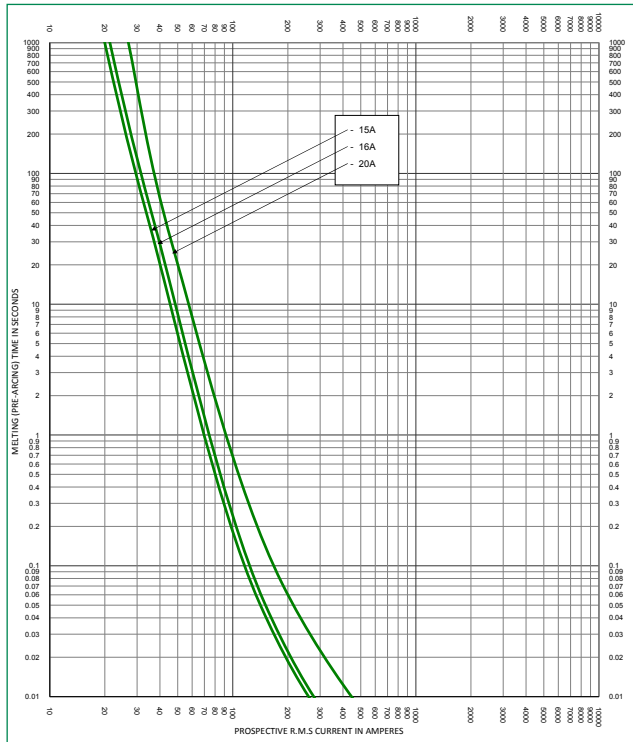
### Time Current Curve (1–3.5 A)



### Time Current Curve (4–12 A)



### Time Current Curve (15–20 A)



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