

## SPFJ SERIES SOLAR FUSE

1000 Vdc • 70-450 A



## Description

The SPFJ series is the smallest 1000 Vdc 70-450 A photovoltaic fuse available in the market. The SPFJ series is manufactured in Class J case sizes that allows for both fuse holder and busbar mounting configuration. The SPFJ meets both UL and IEC requirements.

## Features/Benefits

- Meets UL and IEC photovoltaic standards
- Small footprint reduces panel size
- Flexibility of fuse holder or busbar mounting
- Higher amperage solar fuses in standard sizes
- UL Listed branch and feeder circuit rated
- Class J case sizes for the 125-450 A ratings

## Applications

- Inverters
- Re-combiner boxes

## Recommended Fuse Holder

LFJ1000 Solar Series

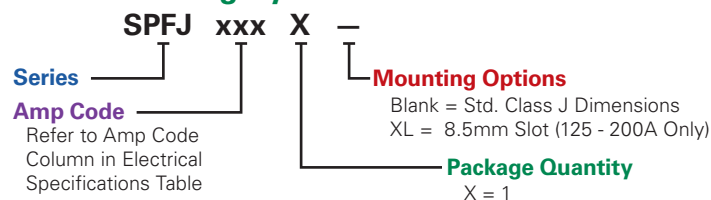
## Web Resources

Download technical documents: [Littelfuse.com/spfj](http://Littelfuse.com/spfj)

## Specifications

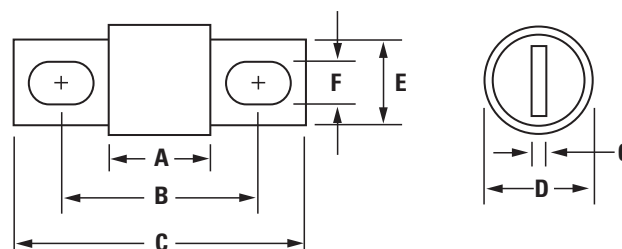
|                            |                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Voltage Rating</b>      | 1000 Vdc<br>600 Vac (125-450 A)                                                                                   |
| <b>Amperage Rating</b>     | 70, 80, 90, 100, 125, 160, 200,<br>250, 300, 350, 400, 450                                                        |
| <b>Interrupting Rating</b> | AC: 200 kAIC (125-450 A)<br>DC: 70-200 A: 20 kAIC<br>250-400 A: 10 kAIC<br>450 A: 20 kAIC                         |
| <b>Time Constant</b>       | ≤ 1ms                                                                                                             |
| <b>Material</b>            | Body: Melamine<br>End Bells: Copper Alloy                                                                         |
| <b>Approvals</b>           | UL 248-19 Listed (File: E339112)<br>UL 248-8, Class J (125-450 A)<br>cULus (125-450 A)<br>IEC 60269-6 (125-450 A) |
| <b>Environmental</b>       | RoHS Compliant                                                                                                    |
| <b>Country of Origin</b>   | Mexico                                                                                                            |

## Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|----------------|-----------------|
| SPFJ   | 70  | 1                | SPFJ070        | SPFJ070.X       |
| SPFJ   | 200 | 1                | SPFJ200        | SPFJ200.XXL     |

## Dimensions Inches (mm)



| AMPERAGE | DIMENSIONS IN INCHES (MM) |              |               |            |              |             |            |
|----------|---------------------------|--------------|---------------|------------|--------------|-------------|------------|
|          | A                         | B            | C             | D          | E            | F           | G          |
| 70-100   | 3.02 (76.5)               | 4.38 (111.3) | 5.75 (146.1)  | 1.5 (38.1) | 1.125 (28.3) | .335 (8.5)  | .189 (4.8) |
| 125-200  | 3.02 (76.5)               | 4.38 (111.3) | 5.75 (146.1)  | 1.5 (38.1) | 1.125 (28.3) | .281 (7.1)* | .189 (4.8) |
| 250-400  | 3.37 (85.7)               | 5.25 (133.4) | 7.125 (181.0) | 2.0 (50.8) | 1.63 (41.3)  | .406 (10.3) | .252 (6.4) |
| 450      | 3.75 (95.3)               | 5.98 (152.0) | 8.0 (203.2)   | 2.5 (63.5) | 2.0 (50.8)   | .531 (13.5) | .374 (9.5) |

\* SPFJ XL option = 8.5 mm (UL 248-19 approval only)



Look for this logo to indicate products that are used in solar applications. Visit our website [Littelfuse.com/solar](http://Littelfuse.com/solar) for the latest updates on approvals, certifications, and new products.

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## Ordering Information

| SERIES | AMPERAGE RATING | AMP CODE | CATALOG NUMBER | ORDERING NUMBER | UPC         | AGENCY APPROVALS |        |
|--------|-----------------|----------|----------------|-----------------|-------------|------------------|--------|
|        |                 |          |                |                 |             | UL               | cULus* |
| SPFJ   | 70              | 070      | SPFJ070        | SPFJ070.X       | 07945879326 | •                | —      |
| SPFJ   | 80              | 080      | SPFJ080        | SPFJ080.X       | 07945879327 | •                | —      |
| SPFJ   | 90              | 090      | SPFJ090        | SPFJ090.X       | 07945879328 | •                | —      |
| SPFJ   | 100             | 100      | SPFJ100        | SPFJ100.X       | 07945879329 | •                | —      |
| SPFJ   | 125             | 125      | SPFJ125        | SPFJ125.X       | 07945894924 | •                | •      |
| SPFJ   | 125             | 125      | SPFJ125L       | SPFJ125.XXL     | 07945879546 | •                | —      |
| SPFJ   | 160             | 160      | SPFJ160        | SPFJ160.X       | 07945894925 | •                | •      |
| SPFJ   | 160             | 160      | SPFJ160L       | SPFJ160.XXL     | 07945879547 | •                | —      |
| SPFJ   | 200             | 200      | SPFJ200        | SPFJ200.X       | 07945894926 | •                | •      |
| SPFJ   | 200             | 200      | SPFJ200L       | SPFJ200.XXL     | 07945879548 | •                | —      |
| SPFJ   | 250             | 250      | SPFJ250        | SPFJ250.X       | 07945894927 | •                | •      |
| SPFJ   | 300             | 300      | SPFJ300        | SPFJ300.X       | 07945894928 | •                | •      |
| SPFJ   | 350             | 350      | SPFJ350        | SPFJ350.X       | 07945894929 | •                | •      |
| SPFJ   | 400             | 400      | SPFJ400        | SPFJ400.X       | 07945894930 | •                | •      |
| SPFJ   | 450             | 450      | SPFJ450        | SPFJ450.X       | 07945894931 | •                | •      |

\* cULus approval on Class J fuse  
(no CSA PV standard exists)

## Electrical Specifications

| CATALOG NUMBER | AMPERAGE RATING | VOLTAGE RATING |      | INTERRUPTING RATING |       | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 100 kA (600 Vac) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 10 kA (1000 Vdc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 20 kA (1000 Vdc) |
|----------------|-----------------|----------------|------|---------------------|-------|---------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
|                |                 | AC             | DC   | AC                  | DC    |                                                                     |                                                                     |                                                                     |
| SPFJ070        | 70              | —              | 1000 | —                   | 20 kA | —                                                                   | —                                                                   | 5212.93                                                             |
| SPFJ080        | 80              | —              | 1000 | —                   | 20 kA | —                                                                   | —                                                                   | 6971.37                                                             |
| SPFJ090        | 90              | —              | 1000 | —                   | 20 kA | —                                                                   | —                                                                   | 10487.20                                                            |
| SPFJ100        | 100             | —              | 1000 | —                   | 20 kA | —                                                                   | —                                                                   | 12243.51                                                            |
| SPFJ125        | 125             | 600            | 1000 | 200 kA              | 20 kA | 24750                                                               | 17391                                                               | 23529                                                               |
| SPFJ160        | 160             | 600            | 1000 | 200 kA              | 20 kA | 60100                                                               | 38771                                                               | 47465                                                               |
| SPFJ200        | 200             | 600            | 1000 | 200 kA              | 20 kA | 108000                                                              | 66151                                                               | 79642                                                               |
| SPFJ250        | 250             | 600            | 1000 | 200 kA              | 10 kA | 85900                                                               | 55897                                                               | —                                                                   |
| SPFJ300        | 300             | 600            | 1000 | 200 kA              | 10 kA | 143000                                                              | 91129                                                               | —                                                                   |
| SPFJ350        | 350             | 600            | 1000 | 200 kA              | 10 kA | 232000                                                              | 170863                                                              | —                                                                   |
| SPFJ400        | 400             | 600            | 1000 | 200 kA              | 10 kA | 400500                                                              | 287094                                                              | —                                                                   |
| SPFJ450        | 450             | 600            | 1000 | 200 kA              | 20 kA | 565333                                                              | 401687                                                              | 400916                                                              |

| CATALOG NUMBER | AMPERAGE RATING | NOM COLD RESISTANCE (mΩ) | MELTING I <sup>2</sup> t (10 kA) (1000 Vdc) | MELTING I <sup>2</sup> t (20 kA) (1000 Vdc) | WATTS LOSS AT 100% RATED CURRENT (W) | WATTS LOSS AT 80% RATED CURRENT (W) | WATTS LOSS AT 70% RATED CURRENT (W) |
|----------------|-----------------|--------------------------|---------------------------------------------|---------------------------------------------|--------------------------------------|-------------------------------------|-------------------------------------|
| SPFJ070        | 70              | 1.930                    | —                                           | 1772.73                                     | 12.56                                | 7.17                                | 5.30                                |
| SPFJ080        | 80              | 1.700                    | —                                           | 2345.80                                     | 15.32                                | 8.62                                | 6.18                                |
| SPFJ090        | 90              | 1.436                    | —                                           | 3837.24                                     | 14.83                                | 8.31                                | 6.10                                |
| SPFJ100        | 100             | 1.243                    | —                                           | 4693.13                                     | 18.01                                | 9.98                                | 7.19                                |
| SPFJ125        | 125             | 0.964                    | 6863                                        | 5824                                        | 23.00                                | 12.60                               | 9.04                                |
| SPFJ160        | 160             | 0.613                    | 19053                                       | 19368                                       | 22.77                                | 12.67                               | 9.15                                |
| SPFJ200        | 200             | 0.460                    | 34053                                       | 32502                                       | 27.40                                | 15.09                               | 10.87                               |
| SPFJ250        | 250             | 0.485                    | 31022                                       | N/A                                         | 49.17                                | 26.20                               | 20.59                               |
| SPFJ300        | 300             | 0.367                    | 59201                                       | N/A                                         | 52.90                                | 28.32                               | 20.02                               |
| SPFJ350        | 350             | 0.285                    | 109799                                      | N/A                                         | 54.48                                | 29.31                               | 20.99                               |
| SPFJ400        | 400             | 0.236                    | 198654                                      | N/A                                         | 58.40                                | 31.47                               | 22.21                               |
| SPFJ450        | 450             | 0.187                    | 317627                                      | 201877                                      | 50.55                                | 28.68                               | 20.79                               |

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## Electrical Specification – Agency Requirements

| CATALOG<br>NUMBER | AMPERAGE | OPENING TIME (MINUTES)       |                               |                              |                               |                              |  |
|-------------------|----------|------------------------------|-------------------------------|------------------------------|-------------------------------|------------------------------|--|
|                   |          | 100% of Amp<br>Rating per UL | 113% of Amp<br>Rating per IEC | 135% of Amp<br>Rating per UL | 145% of Amp<br>Rating per IEC | 200% of Amp<br>Rating per UL |  |
| SPFJ070           | 70       | Temperature<br>Stabilization | —                             | 120 Max                      | —                             | 8 Max                        |  |
| SPFJ080           | 80       |                              |                               |                              |                               |                              |  |
| SPFJ090           | 90       |                              | 120 Min                       |                              | 120 Max                       | 10 Max                       |  |
| SPFJ100           | 100      |                              |                               |                              |                               |                              |  |
| SPFJ125           | 125      |                              | 180 Min                       |                              | 180 Max                       | 12 Max                       |  |
| SPFJ160           | 160      |                              |                               |                              |                               |                              |  |
| SPFJ200           | 200      |                              |                               |                              |                               |                              |  |
| SPFJ250           | 250      |                              |                               |                              |                               |                              |  |
| SPFJ300           | 300      |                              |                               |                              |                               |                              |  |
| SPFJ350           | 350      |                              |                               |                              |                               |                              |  |
| SPFJ400           | 400      |                              | 240 Min                       |                              | 240 Max                       | 14 Max                       |  |
| SPFJ450           | 450      |                              |                               |                              |                               |                              |  |

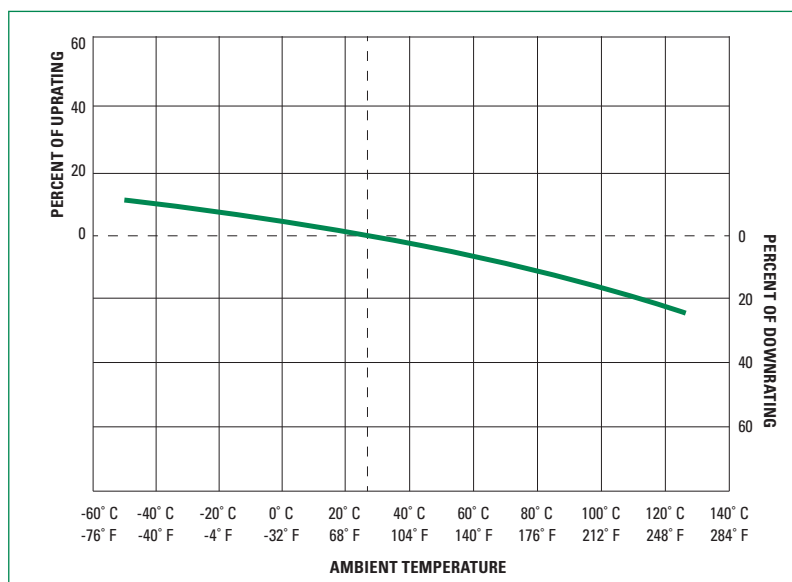
## Recommended Torque Values For Buss Bar Mounting

| RECOMMENDED TORQUE VALUES FOR BUSS BAR MOUNTING FUSE |                               |                                  |
|------------------------------------------------------|-------------------------------|----------------------------------|
| CATALOG NUMBER                                       | FUSE TORQUE—METRIC (STANDARD) | HARDWARE SIZE—METRIC (STANDARD)* |
| SPFJ070                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) / 8mm (5/16 -18)   |
| SPFJ080                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) / 8mm (5/16 -18)   |
| SPFJ090                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) / 8mm (5/16 -18)   |
| SPFJ100                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) / 8mm (5/16 -18)   |
| SPFJ125                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) <sup>†</sup>       |
| SPFJ160                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) <sup>†</sup>       |
| SPFJ200                                              | 7.3 N•m (65 in-lb)            | 6mm (1/4 -20) <sup>†</sup>       |
| SPFJ250                                              | 19.2 N•m (170 in-lb)          | 10mm (3/8 -16)                   |
| SPFJ300                                              | 19.2 N•m (170 in-lb)          | 10mm (3/8 -16)                   |
| SPFJ350                                              | 19.2 N•m (170 in-lb)          | 10mm (3/8 -16)                   |
| SPFJ400                                              | 19.2 N•m (170 in-lb)          | 10mm (3/8 -16)                   |
| SPFJ450                                              | 19.2 N•m (170 in-lb)          | 12mm (7/16 -14)                  |

\* Recommended minimum hardware grade 2 or class 5.8

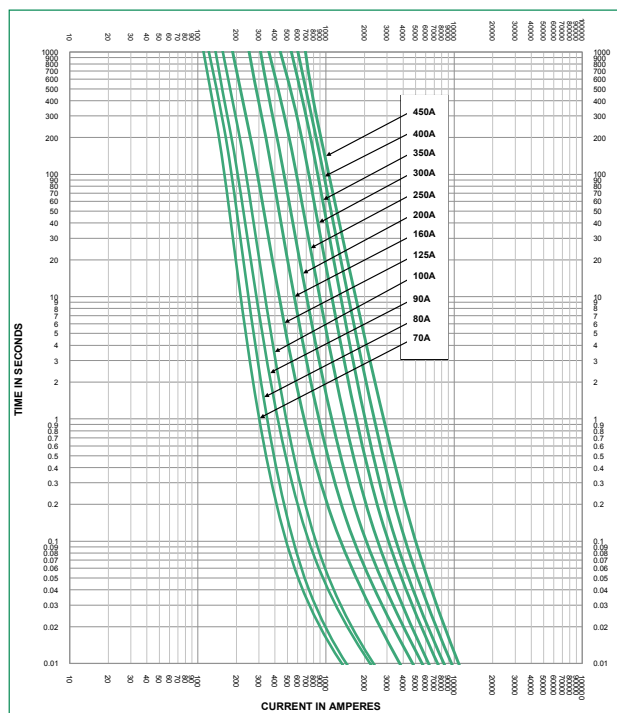
<sup>†</sup> 8mm (5/16 -18) for L dimension option

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

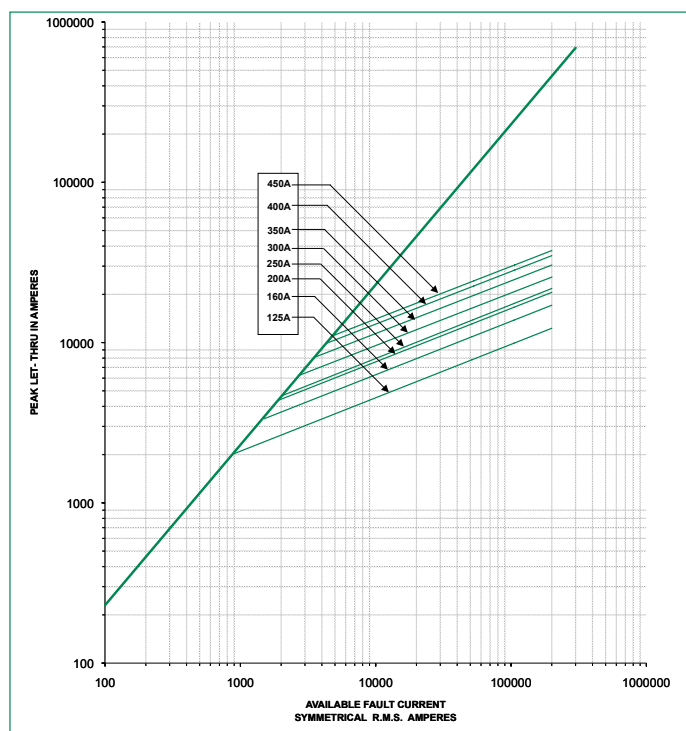


# SPFJ SERIES SOLAR FUSE

## Time Current Curve



## Peak Let-Thru Curve (125-450 A)



\*Tested at 600 Vac

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