

## SPFJ SERIES DC FUSE

1000 V dc • 70–450 A • Full Range • Solar-Rated



## Description

The SPFJ series is the smallest 1000 V dc 70–450 A dc full range fuse available in the market. The SPFJ series is manufactured in Class J case sizes and is suitable for photovoltaic, dc cable protection, EV off-board charging and other dc applications that allow for both fuse holder and busbar mounting configurations. The SPFJ meets both UL and IEC requirements.

## Features &amp; Benefits

- Higher amperage capacity in standard sizes for more protection in a smaller space
- Full range over-current protection capability, suitable for dc cable protection
- Small footprint offers design flexibility and reduces panel size requirements
- Fuse holder or bus bar mountings available for added versatility

## Applications

- Inverters
- Re-combiner boxes
- Dc cable protection
- EV off-board (dc fast) chargers

## Recommended Fuse Holder

LFJ1000 Solar Series

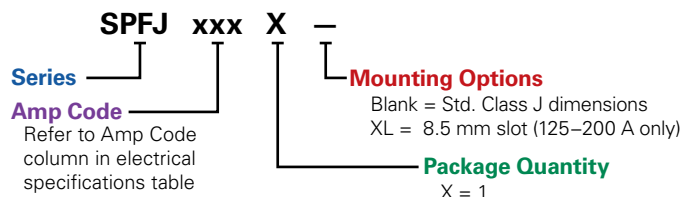
## Web Resources

Download technical documents: [Littelfuse.com/SPFJ](https://www.littelfuse.com/SPFJ)

## Specifications

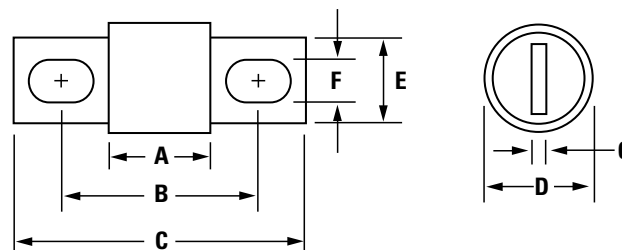
|                             |                                                                                           |
|-----------------------------|-------------------------------------------------------------------------------------------|
| <b>Voltage Rating</b>       | 1000 V dc<br>600 V ac (125–450 A)                                                         |
| <b>Amperage Rating</b>      | 70–450 A                                                                                  |
| <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>            | cULus (File:E339112),<br>VDE (Cert No. 40033659)**                                        |
| <b>Applicable Standards</b> | UL 248-1, UL 248-8, UL 248-19,<br>IEC 60269-6                                             |
| <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 L option = .330 (8.5)

\*\* Refer to Ordering Information table



Look for this logo to indicate products that are used in solar applications. Visit our website [Littelfuse.com/Solar](https://www.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 | FUSE LABEL ID | ORDERING NUMBER | UPC CODE    | cULus APPROVAL |           | VDE APPROVAL |
|--------|-----------------|----------|----------------|---------------|-----------------|-------------|----------------|-----------|--------------|
|        |                 |          |                |               |                 |             | 600 V AC       | 1000 V DC |              |
| SPFJ   | 70              | 070.     | SPFJ070        | SPFJ 70       | SPFJ070.X       | 07945879326 | —              | •         | —            |
| SPFJ   | 80              | 080.     | SPFJ080        | SPFJ 80       | SPFJ080.X       | 07945879327 | —              | •         | —            |
| SPFJ   | 90              | 090.     | SPFJ090        | SPFJ 90       | SPFJ090.X       | 07945879328 | —              | •         | —            |
| SPFJ   | 100             | 100.     | SPFJ100        | SPFJ 100      | SPFJ100.X       | 07945879329 | —              | •         | —            |
| SPFJ   | 125             | 125.     | SPFJ125        | SPFJ 125      | SPFJ125.X       | 07945894924 | •              | •         | •            |
| SPFJ L | 125             | 125.     | SPFJ125L       | SPFJ 125 L    | SPFJ125.XXL     | 07945879546 | —              | •         | —            |
| SPFJ   | 160             | 160.     | SPFJ160        | SPFJ 160      | SPFJ160.X       | 07945894925 | •              | •         | •            |
| SPFJ L | 160             | 160.     | SPFJ160L       | SPFJ 160 L    | SPFJ160.XXL     | 07945879547 | —              | •         | —            |
| SPFJ   | 200             | 200.     | SPFJ200        | SPFJ 200      | SPFJ200.X       | 07945894926 | •              | •         | •            |
| SPFJ L | 200             | 200.     | SPFJ200L       | SPFJ 200 L    | SPFJ200.XXL     | 07945879548 | —              | •         | —            |
| SPFJ   | 250             | 250.     | SPFJ250        | SPFJ 250      | SPFJ250.X       | 07945894927 | •              | •         | —            |
| SPFJ   | 300             | 300.     | SPFJ300        | SPFJ 300      | SPFJ300.X       | 07945894928 | •              | •         | —            |
| SPFJ   | 350             | 350.     | SPFJ350        | SPFJ 350      | SPFJ350.X       | 07945894929 | •              | •         | —            |
| SPFJ   | 400             | 400.     | SPFJ400        | SPFJ 400      | SPFJ400.X       | 07945894930 | •              | •         | —            |
| SPFJ   | 450             | 450.     | SPFJ450        | SPFJ 450      | SPFJ450.X       | 07945894931 | •              | •         | —            |

## Electrical Specifications

| CATALOG NUMBER | VOLTAGE RATING |      | INTERRUPTING RATING |       | NOM COLD RESISTANCE (mOHMS) | WATTS LOSS AT 100 % RATED CURRENT (W) | WATTS LOSS AT 80 % RATED CURRENT (W) | WATTS LOSS AT 70 % RATED CURRENT (W) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> S) 100 KA (600 V AC) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> S) 10 KA (1000 V DC) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> S) 20 KA (1000 V DC) |
|----------------|----------------|------|---------------------|-------|-----------------------------|---------------------------------------|--------------------------------------|--------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
|                | AC             | DC   | AC                  | DC    |                             |                                       |                                      |                                      |                                                                      |                                                                      |                                                                      |
| SPFJ070        | —              | 1000 | —                   | 20 kA | 2.018                       | 12.56                                 | 7.17                                 | 5.30                                 | —                                                                    | —                                                                    | 5212.9                                                               |
| SPFJ080        | —              | 1000 | —                   | 20 kA | 1.700                       | 15.32                                 | 8.62                                 | 6.18                                 | —                                                                    | —                                                                    | 6971.4                                                               |
| SPFJ090        | —              | 1000 | —                   | 20 kA | 1.436                       | 14.83                                 | 8.31                                 | 6.10                                 | —                                                                    | —                                                                    | 10487.2                                                              |
| SPFJ100        | —              | 1000 | —                   | 20 kA | 1.299                       | 18.01                                 | 9.98                                 | 7.19                                 | —                                                                    | —                                                                    | 12244                                                                |
| SPFJ125        | 600            | 1000 | 200 kA              | 20 kA | 1.020                       | 23.00                                 | 12.60                                | 9.04                                 | 24750                                                                | 17391                                                                | 23529                                                                |
| SPFJ125L       | —              | 1000 | —                   | 20 kA | 1.020                       | 23.00                                 | 12.60                                | 9.04                                 | —                                                                    | 17391                                                                | 23529                                                                |
| SPFJ160        | 600            | 1000 | 200 kA              | 20 kA | 0.613                       | 22.77                                 | 12.67                                | 9.15                                 | 60100                                                                | 38771                                                                | 47465                                                                |
| SPFJ160L       | —              | 1000 | —                   | 20 kA | 0.613                       | 22.77                                 | 12.67                                | 9.15                                 | —                                                                    | 38771                                                                | 47465                                                                |
| SPFJ200        | 600            | 1000 | 200 kA              | 20 kA | 0.494                       | 27.40                                 | 15.09                                | 10.87                                | 108000                                                               | 66151                                                                | 79642                                                                |
| SPFJ200L       | —              | 1000 | —                   | 20 kA | 0.494                       | 27.40                                 | 15.09                                | 10.87                                | —                                                                    | 66151                                                                | 79642                                                                |
| SPFJ250        | 600            | 1000 | 200 kA              | 10 kA | 0.513                       | 49.17                                 | 26.20                                | 20.59                                | 85900                                                                | 55897                                                                | —                                                                    |
| SPFJ300        | 600            | 1000 | 200 kA              | 10 kA | 0.385                       | 52.90                                 | 28.32                                | 20.02                                | 143000                                                               | 91129                                                                | —                                                                    |
| SPFJ350        | 600            | 1000 | 200 kA              | 10 kA | 0.302                       | 54.48                                 | 29.31                                | 20.99                                | 232000                                                               | 170863                                                               | —                                                                    |
| SPFJ400        | 600            | 1000 | 200 kA              | 10 kA | 0.248                       | 58.40                                 | 31.47                                | 22.21                                | 400500                                                               | 287094                                                               | —                                                                    |
| SPFJ450        | 600            | 1000 | 200 kA              | 20 kA | 0.195                       | 50.55                                 | 28.68                                | 20.79                                | 565333                                                               | 401687                                                               | 400916                                                               |

# SPFJ SERIES DC FUSE

## Electrical Specification – Agency Requirements

| CATALOG NUMBER | AMPERAGE | OPENING TIME (MINUTES)        |                                |                               |                               |
|----------------|----------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|
|                |          | 100 % OF AMP<br>RATING PER UL | 105 % OF AMP<br>RATING PER IEC | 135 % OF AMP<br>RATING PER UL | 200 % OF AMP<br>RATING PER UL |
| SPFJ070        | 70       | Temperature<br>Stabilization  | —                              | 120 Max                       | 8 Max                         |
| SPFJ080        | 80       |                               |                                |                               |                               |
| SPFJ090        | 90       |                               | 120 Min                        |                               | 10 Max                        |
| SPFJ100        | 100      |                               |                                |                               |                               |
| SPFJ125        | 125      |                               |                                |                               |                               |
| SPFJ160        | 160      |                               |                                |                               |                               |
| SPFJ200        | 200      |                               | 180 Min                        |                               | 12 Max                        |
| SPFJ250        | 250      |                               |                                |                               |                               |
| SPFJ300        | 300      |                               | 240 Min                        |                               | 14 Max                        |
| SPFJ350        | 350      |                               |                                |                               |                               |
| SPFJ400        | 400      |                               |                                |                               |                               |
| SPEJ450        | 450      |                               |                                |                               |                               |

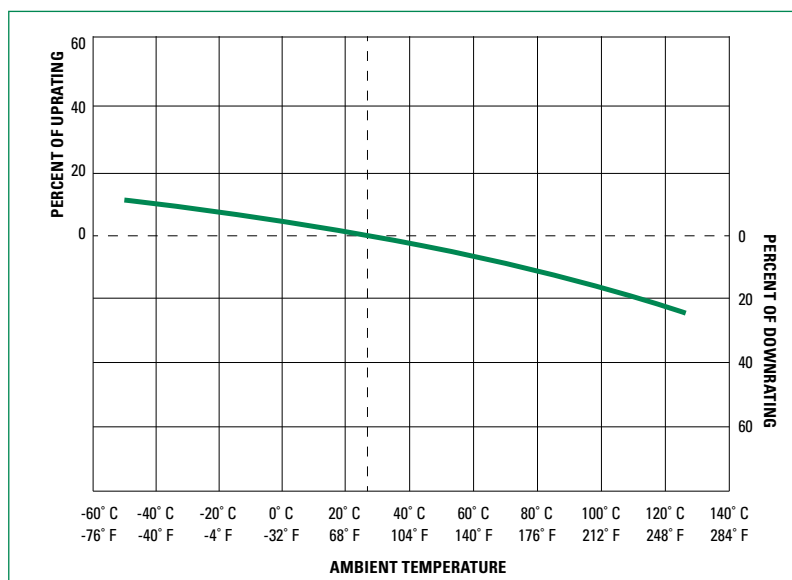
## Recommended Torque Values for Bus Bar Mounting Fuse

| 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

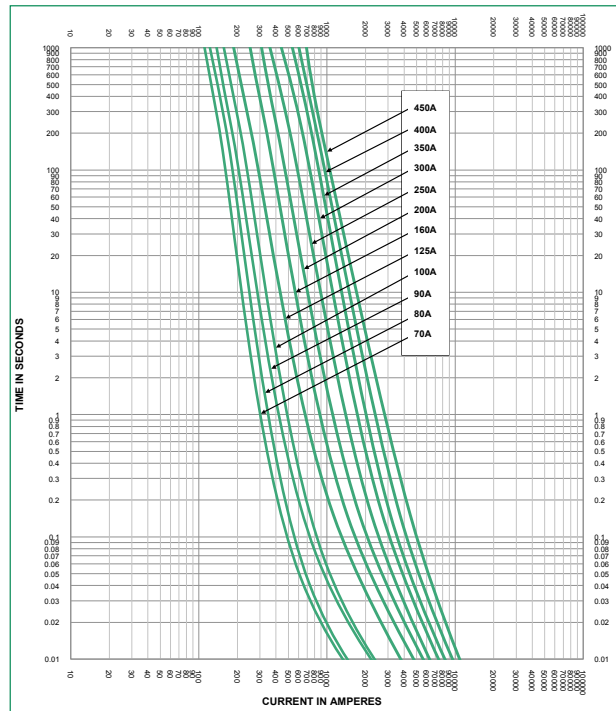
<sup>†</sup> 8 mm (5/16–18) for SPFJ L dimension option

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

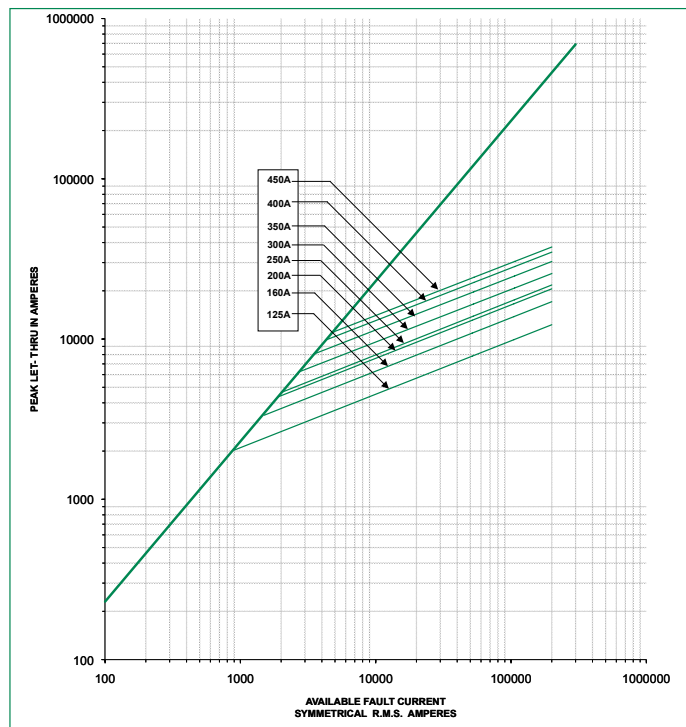


# SPFJ SERIES DC FUSE

## Time Current Curve



## Peak Let-Thru Curve (125–450 A)\*



\*Tested at 600 V ac

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