

# POWR-GARD® Fuse

## SPXV SERIES SOLAR FUSE

1500 V dc • 1–60 A



### Description

The Littelfuse SPXV solar string fuse has been specifically designed for the protection of photovoltaic (PV) systems.

It is available in multiple ampere 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
- Up to 50,000 A interrupting rating

### Applications

- Inverters
- Combiner boxes

### Recommended Accessories

#### 1–32 Amperes

**Fuse Holder:** LFPXV001

**Fuse Clips:** 125003

#### 35–60 Amperes

**Fuse Block and Cover:** LFXV15060-BC

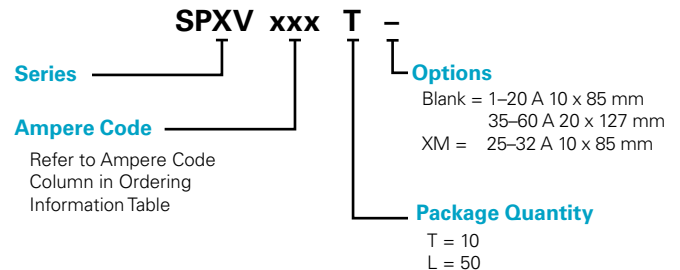
### Web Resources

Download technical resources at: [Littelfuse.com/SPXV](http://Littelfuse.com/SPXV)

### 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, 25, 30, 32, 35, 40, 45, 50, 55, 60 A |
| <b>Interrupting Rating</b>  | SPXV 1 A–20 A: 30 kA (50 kA Self-Certified)<br>SPXV 35 A–60 A: 50 kA<br>SPXV-M 25 A–32 A: 50 kA    |
| <b>Time Constant</b>        | ≤ 1ms  |
| <b>Material</b>             | Body: melamine<br>Caps: copper alloy (nickel plated)   |
| <b>Approvals</b>            | cULus (File: E339112)<br>TUV (Cert: J 50506219)  |
| <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   |

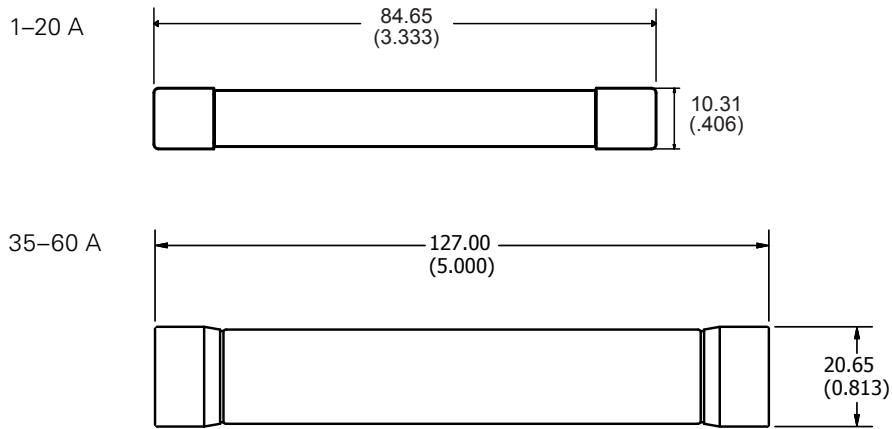
### Part Numbering System



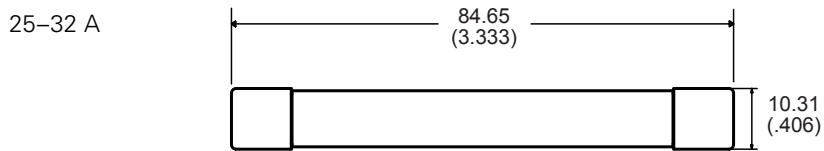
| SERIES | AMPERAGE | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|------------------|----------------|-----------------|
| SPXV   | 6        | 10               | SPXV006        | SPXV006.T       |
| SPXV   | 20       | 50               | SPXV020        | SPXV020.L       |
| SPXV   | 32       | 10               | SPXV032-M      | SPXV032.TXM     |
| SPXV   | 60       | 10               | SPXV060        | SPXV060.T       |



**SPXV Dimensions mm (in)**



**SPXV-M Dimensions mm (in)**



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### SPXV and SPXV-M Ordering Information

| SERIES | AMPERAGE | AMPERE CODE | CATALOG NUMBER | FUSE LABEL ID | PACK QUANTITY | ORDERING NUMBER | UPC         |
|--------|----------|-------------|----------------|---------------|---------------|-----------------|-------------|
| SPXV   | 1        | 001.        | SPXV001        | SPXV 1        | 10            | SPXV001.T       | 07945822117 |
|        |          |             |                |               | 50            | SPXV001.L       | 07945822118 |
| SPXV   | 2        | 002.        | SPXV002        | SPXV 2        | 10            | SPXV002.T       | 07945822119 |
|        |          |             |                |               | 50            | SPXV002.L       | 07945822120 |
| SPXV   | 2.25     | 2.25        | SPXV2.25       | SPXV 2 ¼      | 10            | SPXV2.25T       | 07945822121 |
|        |          |             |                |               | 50            | SPXV2.25L       | 07945822122 |
| SPXV   | 2.5      | 02.5        | SPXV02.5       | SPXV 2 ½      | 10            | SPXV02.5T       | 07945822123 |
|        |          |             |                |               | 50            | SPXV02.5L       | 07945822124 |
| SPXV   | 3        | 003.        | SPXV003        | SPXV 3        | 10            | SPXV003.T       | 07945822125 |
|        |          |             |                |               | 50            | SPXV003.L       | 07945822126 |
| SPXV   | 3.5      | 03.5        | SPXV03.5       | SPXV 3 ½      | 10            | SPXV03.5T       | 07945822127 |
|        |          |             |                |               | 50            | SPXV03.5L       | 07945822128 |
| SPXV   | 4        | 004.        | SPXV004        | SPXV 4        | 10            | SPXV004.T       | 07945819881 |
|        |          |             |                |               | 50            | SPXV004.L       | 07945819883 |
| SPXV   | 4.5      | 04.5        | SPXV04.5       | SPXV 4 ½      | 10            | SPXV04.5T       | 07945828569 |
|        |          |             |                |               | 50            | SPXV04.5L       | 07945828570 |
| SPXV   | 5        | 005.        | SPXV005        | SPXV 5        | 10            | SPXV005.T       | 07945819885 |
|        |          |             |                |               | 50            | SPXV005.L       | 07945819887 |
| SPXV   | 6        | 006.        | SPXV006        | SPXV 6        | 10            | SPXV006.T       | 07945880812 |
|        |          |             |                |               | 50            | SPXV006.L       | 07945880811 |
| SPXV   | 8        | 008.        | SPXV008        | SPXV 8        | 10            | SPXV008.T       | 07945880814 |
|        |          |             |                |               | 50            | SPXV008.L       | 07945880813 |
| SPXV   | 10       | 010.        | SPXV010        | SPXV 10       | 10            | SPXV010.T       | 07945880816 |
|        |          |             |                |               | 50            | SPXV010.L       | 07945880815 |
| SPXV   | 12       | 012.        | SPXV012        | SPXV 12       | 10            | SPXV012.T       | 07945880818 |
|        |          |             |                |               | 50            | SPXV012.L       | 07945880817 |
| SPXV   | 15       | 015.        | SPXV015        | SPXV 15       | 10            | SPXV015.T       | 07945880820 |
|        |          |             |                |               | 50            | SPXV015.L       | 07945880819 |
| SPXV   | 16       | 016.        | SPXV016        | SPXV 16       | 10            | SPXV016.T       | 07945827709 |
|        |          |             |                |               | 50            | SPXV016.L       | 07945827707 |
| SPXV   | 20       | 020.        | SPXV020        | SPXV 20       | 10            | SPXV020.T       | 07945880822 |
|        |          |             |                |               | 50            | SPXV020.L       | 07945880821 |
| SPXV-M | 25       | 025.        | SPXV025-M      | SPXV 25A-M    | 10            | SPXV025.TXM     | 07945826354 |
|        |          |             |                |               | 50            | SPXV025.LXM     | 07945826355 |
| SPXV-M | 30       | 030.        | SPXV030-M      | SPXV 30A-M    | 10            | SPXV030.TXM     | 07945826356 |
|        |          |             |                |               | 50            | SPXV030.LXM     | 07945826357 |
| SPXV-M | 32       | 032.        | SPXV032-M      | SPXV 32A-M    | 10            | SPXV032.TXM     | 07945826358 |
|        |          |             |                |               | 50            | SPXV032.LXM     | 07945826359 |
| SPXV   | 35       | 035.        | SPXV035        | SPXV 35A      | 10            | SPXV035.T       | 07945826372 |
| SPXV   | 40       | 040.        | SPXV040        | SPXV 40A      | 10            | SPXV040.T       | 07945826373 |
| SPXV   | 45       | 045.        | SPXV045        | SPXV 45A      | 10            | SPXV045.T       | 07945826374 |
| SPXV   | 50       | 050.        | SPXV050        | SPXV 50A      | 10            | SPXV050.T       | 07945826375 |
| SPXV   | 55       | 055.        | SPXV055        | SPXV 55A      | 10            | SPXV055.T       | 07945826376 |
| SPXV   | 60       | 060.        | SPXV060        | SPXV 60A      | 10            | SPXV060.T       | 07945826377 |

# POWR-GARD® Fuse

## SPXV SERIES SOLAR FUSE

### Electrical Specifications

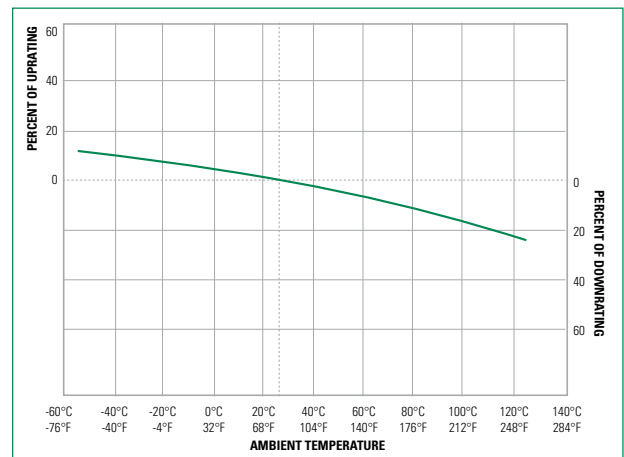
| SERIES | AMPERAGE | VOLTAGE |        | NOM COLD RESISTANCE (ohm) | WATTS LOSS AT 100 % RATED CURRENT (W) | WATTS LOSS AT 80 % RATED CURRENT (W) | MELTING I <sup>2</sup> t (A <sup>2</sup> s) (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 15 kA (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 30 kA (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 50 kA (1500 V dc) | AGENCY APPROVALS |     |
|--------|----------|---------|--------|---------------------------|---------------------------------------|--------------------------------------|---|--|--|--|------------------|-----|
|        |          | DC      | DC     |                           |                                       |                                      |   |  |  |  | cULus            | TUV |
| SPXV   | 1        | 1500    | 50 kA* | 0.9256                    | 1.67                                  | 0.90                                 | .27   | 0.48   | —  | —  | •                | •   |
| SPXV   | 2        | 1500    | 50 kA* | 0.2891                    | 2.17                                  | 1.10                                 | 1.35  | 3.24   | —  | —  | •                | •   |
| SPXV   | 2.25     | 1500    | 50 kA* | 0.2492                    | 2.43                                  | 1.21                                 | 1.59  | 4.44   | —  | —  | •                | •   |
| SPXV   | 2.5      | 1500    | 50 kA* | 0.2234                    | 2.90                                  | 1.40                                 | 3.68  | 5.8  | —  | —  | •                | •   |
| SPXV   | 3        | 1500    | 50 kA* | 0.1587                    | 2.91                                  | 1.41                                 | 6   | 12   | —  | —  | •                | •   |
| SPXV   | 3.5      | 1500    | 50 kA* | 0.1240                    | 2.95                                  | 1.47                                 | 10  | 19   | 16   | —  | •                | •   |
| SPXV   | 4        | 1500    | 50 kA* | 0.1067                    | 2.99                                  | 1.58                                 | 14  | 24   | —  | —  | •                | •   |
| SPXV   | 4.5      | 1500    | 50 kA* | 0.0899                    | 2.84                                  | 1.54                                 | 34  | 55   | —  | —  | •                | •   |
| SPXV   | 5        | 1500    | 50 kA* | 0.0644                    | 3.04                                  | 1.59                                 | 48  | 71   | —  | —  | •                | •   |
| SPXV   | 6        | 1500    | 50 kA* | 0.0576                    | 3.05                                  | 1.71                                 | 49  | 75   | —  | —  | •                | •   |
| SPXV   | 8        | 1500    | 50 kA* | 0.0349                    | 3.26                                  | 1.84                                 | 121   | 214  | —  | —  | •                | •   |
| SPXV   | 10       | 1500    | 50 kA* | 0.0223                    | 3.25                                  | 1.82                                 | 407   | 509  | —  | —  | •                | •   |
| SPXV   | 12       | 1500    | 50 kA* | 0.0163                    | 3.34                                  | 1.89                                 | 798   | 951  | 1154   | —  | •                | •   |
| SPXV   | 15       | 1500    | 50 kA* | 0.0131                    | 5.27                                  | 3.05                                 | 299   | 637  | —  | —  | •                | •   |
| SPXV   | 16       | 1500    | 50 kA* | 0.0130                    | 5.32                                  | 3.08                                 | 404   | 666  | —  | —  | •                | •   |
| SPXV   | 20       | 1500    | 50 kA* | 0.0085                    | 5.38                                  | 3.14                                 | 701   | 1464   | 1738   | —  | •                | •   |
| SPXV-M | 25       | 1500    | 50 kA  | 0.00665                   | 6.1                                   | 3.4                                  | 2304  | —  | —  | 3256   | •                | •   |
| SPXV-M | 30       | 1500    | 50 kA  | 0.00526                   | 7.1                                   | 4.0                                  | 3792  | —  | —  | 5543   | •                | •   |
| SPXV-M | 32       | 1500    | 50 kA  | 0.00459                   | 7.3                                   | 4.1                                  | 4350  | —  | —  | 6655   | •                | •   |
| SPXV   | 35       | 1500    | 50 kA  | 0.00713                   | 13.22                                 | 7.40                                 | 257   | —  | —  | 1794   | •                | •   |
| SPXV   | 40       | 1500    | 50 kA  | 0.00563                   | 13.75                                 | 7.70                                 | 362   | —  | —  | 5726   | •                | •   |
| SPXV   | 45       | 1500    | 50 kA  | 0.0046                    | 13.86                                 | 7.76                                 | 588   | —  | —  | 5521   | •                | •   |
| SPXV   | 50       | 1500    | 50 kA  | 0.00412                   | 16.07                                 | 9.00                                 | 657   | —  | —  | 7058   | •                | •   |
| SPXV   | 55       | 1500    | 50 kA  | 0.0037                    | 18.31                                 | 10.25                                | 853   | —  | —  | 8783   | •                | •   |
| SPXV   | 60       | 1500    | 50 kA  | 0.0033                    | 20.93                                 | 11.72                                | 1030  | —  | —  | 11682  | •                | •   |

\*Self-certified

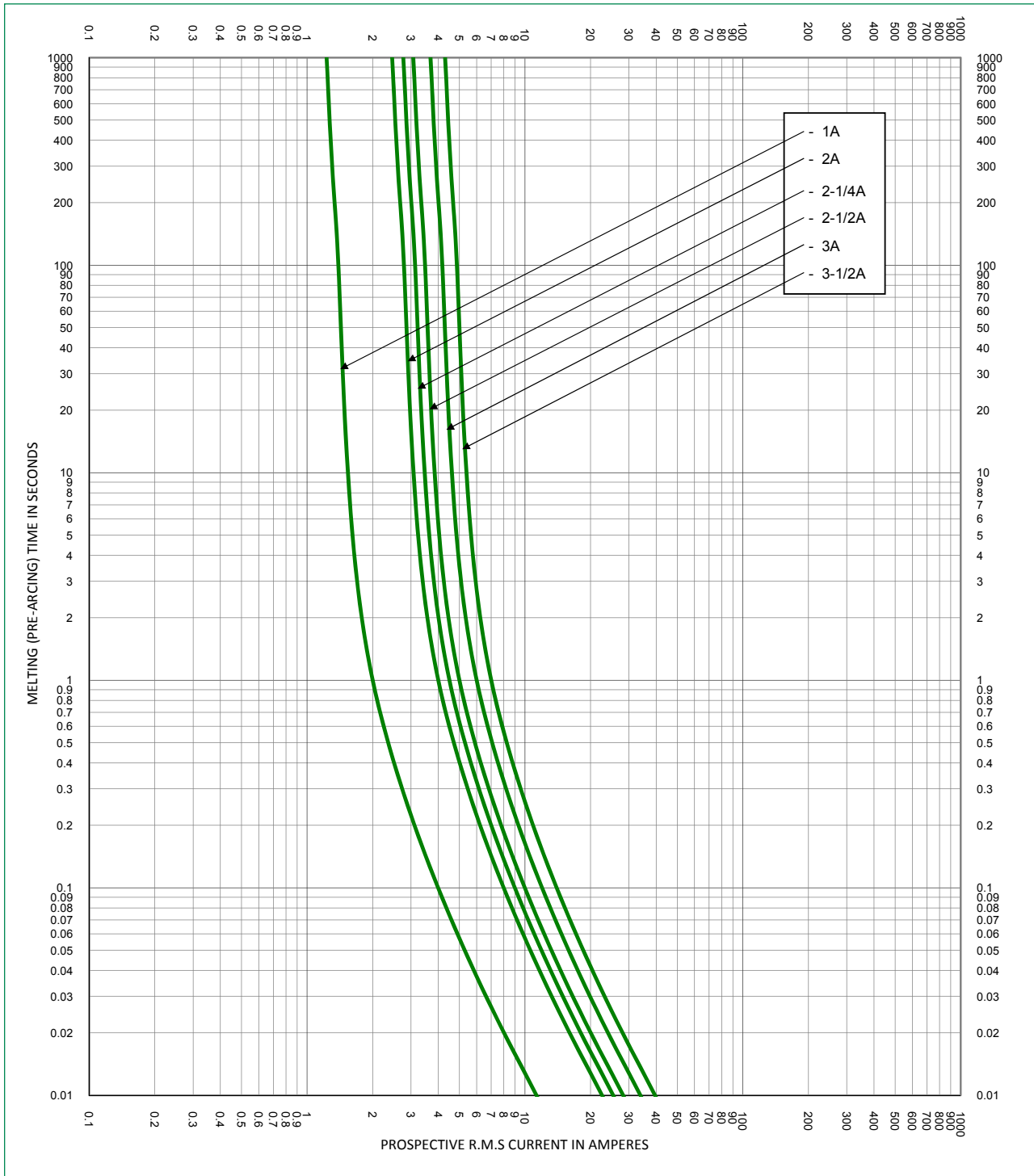
### Electrical Specification — Agency Requirements

| 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 |
| 1–30            | Temperature Stabilization       | 60 Min                           | 60 Max                          | 4 Max                           |
| 32–60           | Temperature Stabilization       | 60 Min                           | 60 Max                          | 6 Max                           |

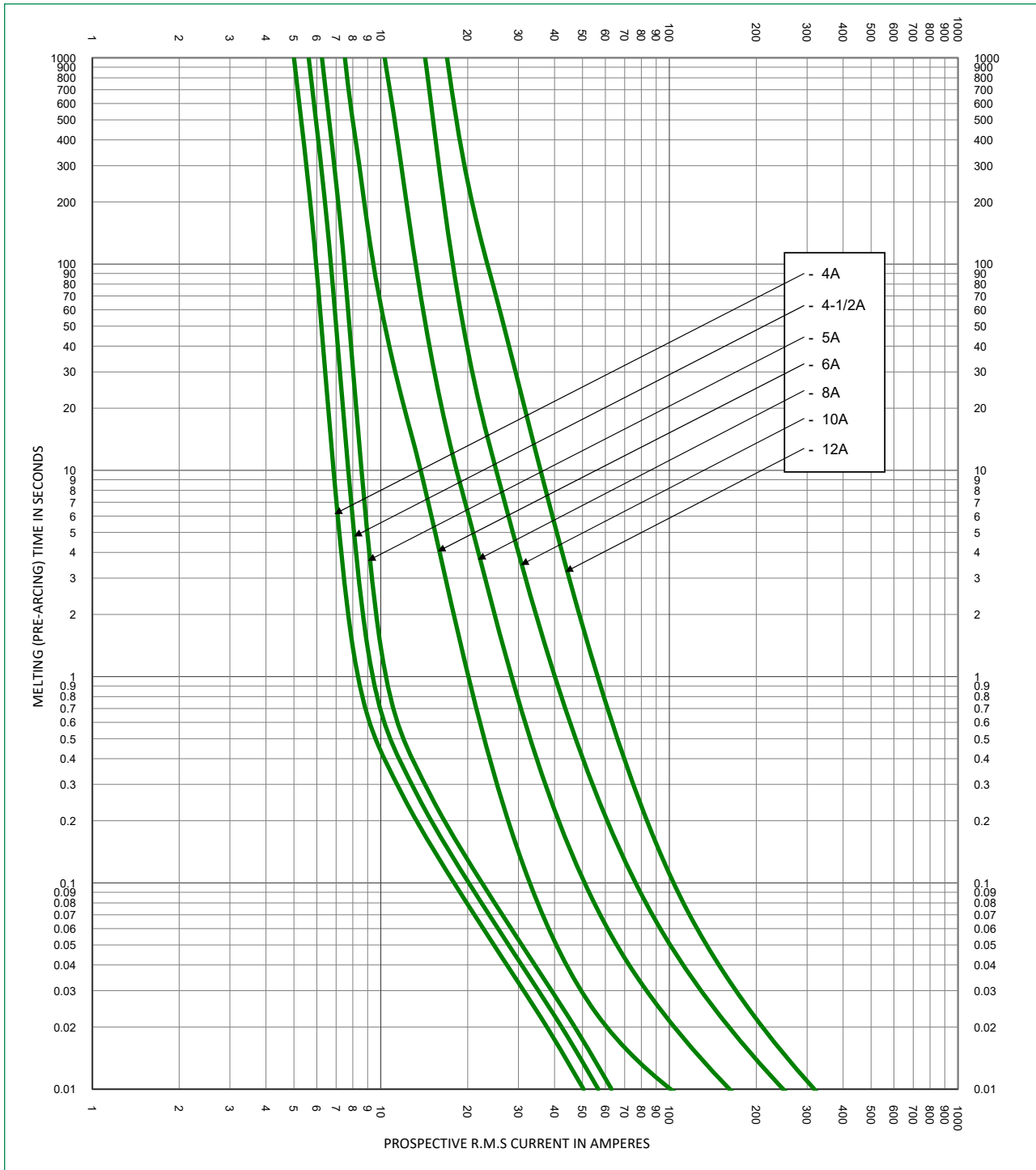
### Temperature Rerating Curve (temperature of air immediately surrounding fuse)



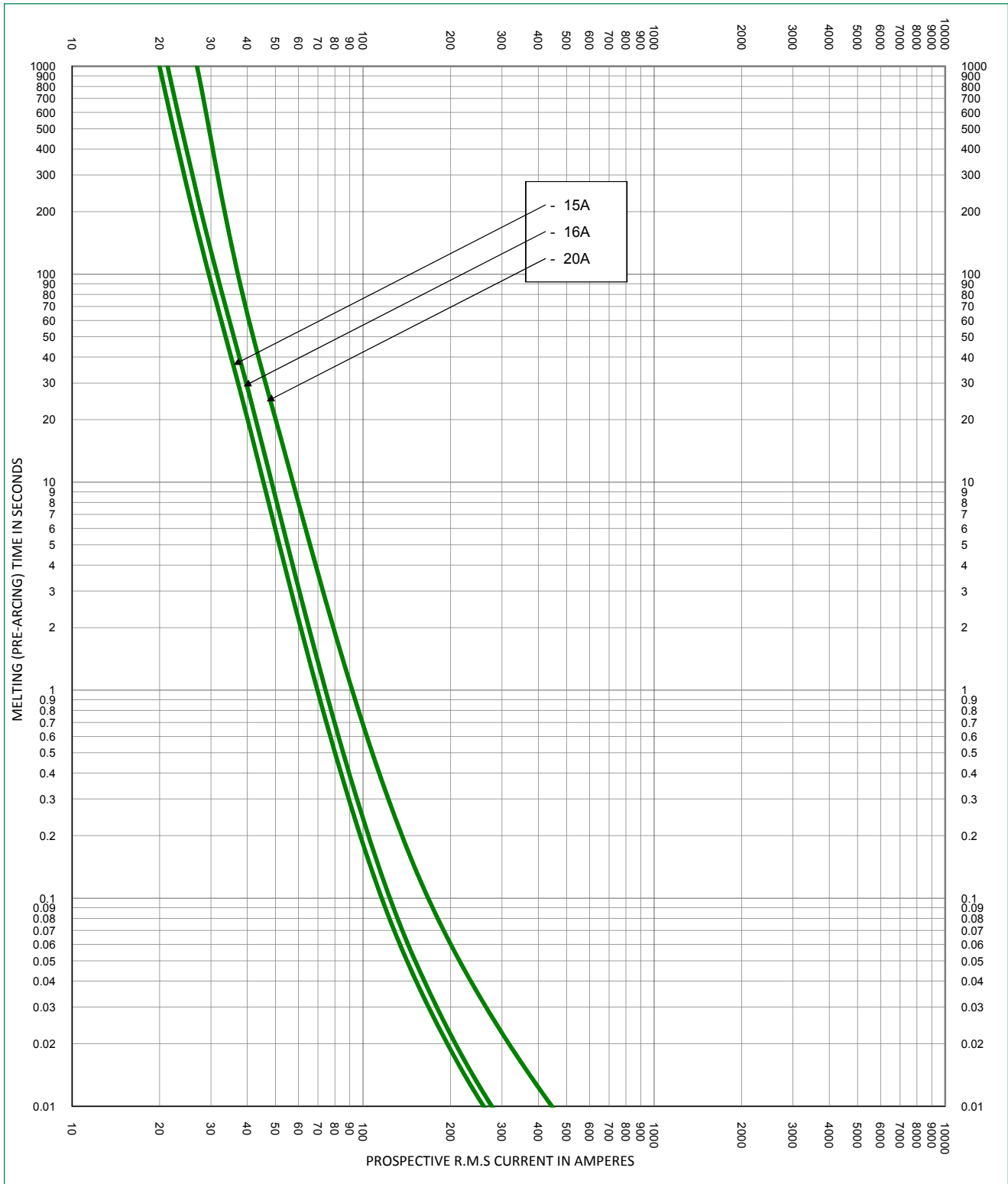
**SPXV Time Current Curve**  
**(1–3.5 A)**



**SPXV Time Current Curve**  
**(4–12 A)**



**SPXV Time Current Curve**  
**(15–20 A)**



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### SPXV Time Current Curve (35–60 A)

