

# POWR-GARD® Fuse

## SPXV SERIES SOLAR FUSE

1500 V dc • 1–60 A

REACH   gPV 



### 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:** 125004/125005

#### 35–60 Amperes

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

### Web Resources

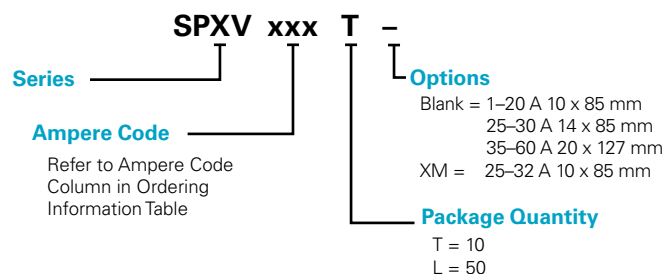
Download technical resources at: [Littelfuse.com/spxv](http://Littelfuse.com/spxv)

### 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-30 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>            | UL 248-19 Listed (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                                                                                             |

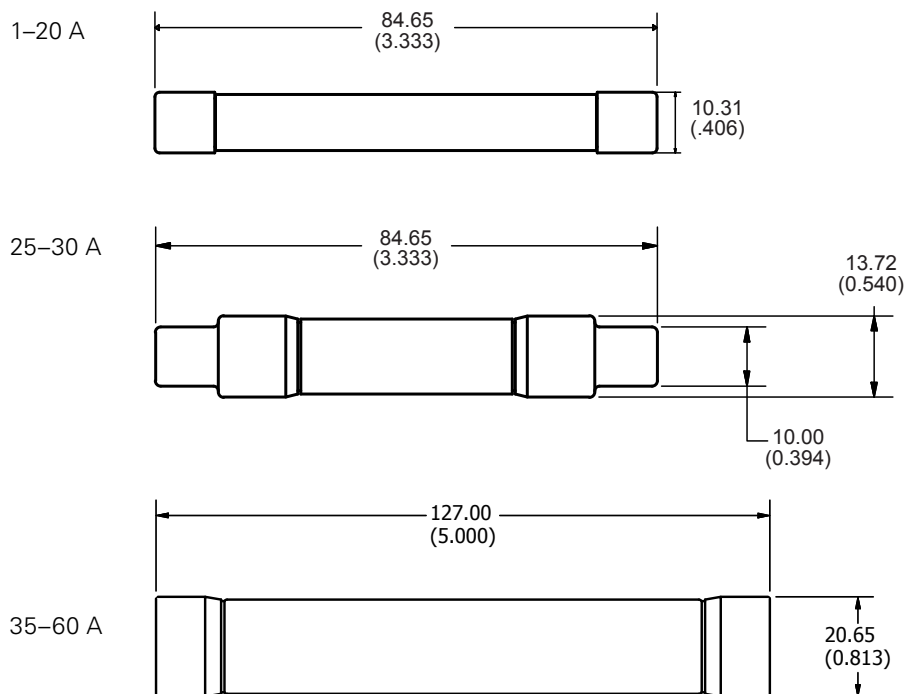
\*SPXV 25 and 30 amp fuses meet electrical performance only.

### Part Numbering System

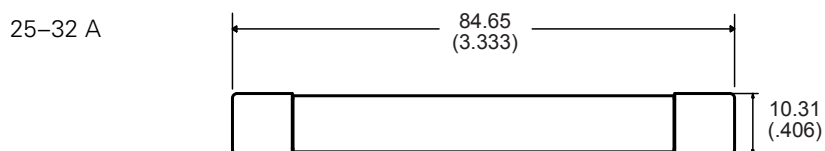


| SERIES | AMPERAGE | PACKAGE QUANTITY | CATALOG NUMBER | ORDERING NUMBER |
|--------|----------|------------------|----------------|-----------------|
| SPXV   | 6        | 10               | SPXV006        | SPXV006.T       |
| SPXV   | 20       | 50               | SPXV020        | SPXV020.L       |
| 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 | PACK QUANTITY | ORDERING NUMBER | UPC         |
|--------|----------|-------------|----------------|---------------|-----------------|-------------|
| SPXV   | 1        | 001.        | SPXV001        | 10            | SPXV001.T       | 07945822117 |
|        |          |             |                | 50            | SPXV001.L       | 07945822118 |
| SPXV   | 2        | 002.        | SPXV002        | 10            | SPXV002.T       | 07945822119 |
|        |          |             |                | 50            | SPXV002.L       | 07945822120 |
| SPXV   | 2.25     | 2.25        | SPXV2.25       | 10            | SPXV2.25T       | 07945822121 |
|        |          |             |                | 50            | SPXV2.25L       | 07945822122 |
| SPXV   | 2.5      | 02.5        | SPXV02.5       | 10            | SPXV02.5T       | 07945822123 |
|        |          |             |                | 50            | SPXV02.5L       | 07945822124 |
| SPXV   | 3        | 003.        | SPXV003        | 10            | SPXV003.T       | 07945822125 |
|        |          |             |                | 50            | SPXV003.L       | 07945822126 |
| SPXV   | 3.5      | 03.5        | SPXV03.5       | 10            | SPXV03.5T       | 07945822127 |
|        |          |             |                | 50            | SPXV03.5L       | 07945822128 |
| SPXV   | 4        | 004.        | SPXV004        | 10            | SPXV004.T       | 07945819881 |
|        |          |             |                | 50            | SPXV004.L       | 07945819883 |
| SPXV   | 4.5      | 04.5        | SPXV04.5       | 10            | SPXV04.5T       | 07945828569 |
|        |          |             |                | 50            | SPXV04.5L       | 07945828570 |
| SPXV   | 5        | 005.        | SPXV005        | 10            | SPXV005.T       | 07945819885 |
|        |          |             |                | 50            | SPXV005.L       | 07945819887 |
| SPXV   | 6        | 006.        | SPXV006        | 10            | SPXV006.T       | 07945880812 |
|        |          |             |                | 50            | SPXV006.L       | 07945880811 |
| SPXV   | 8        | 008.        | SPXV008        | 10            | SPXV008.T       | 07945880814 |
|        |          |             |                | 50            | SPXV008.L       | 07945880813 |
| SPXV   | 10       | 010.        | SPXV010        | 10            | SPXV010.T       | 07945880816 |
|        |          |             |                | 50            | SPXV010.L       | 07945880815 |
| SPXV   | 12       | 012.        | SPXV012        | 10            | SPXV012.T       | 07945880818 |
|        |          |             |                | 50            | SPXV012.L       | 07945880817 |
| SPXV   | 15       | 015.        | SPXV015        | 10            | SPXV015.T       | 07945880820 |
|        |          |             |                | 50            | SPXV015.L       | 07945880819 |
| SPXV   | 16       | 016.        | SPXV016        | 10            | SPXV016.T       | 07945827709 |
|        |          |             |                | 50            | SPXV016.L       | 07945827707 |
| SPXV   | 20       | 020.        | SPXV020        | 10            | SPXV020.T       | 07945880822 |
|        |          |             |                | 50            | SPXV020.L       | 07945880821 |
| SPXV   | 25       | 025.        | SPXV025        | 10            | SPXV025.T       | 07945880824 |
|        |          |             |                | 50            | SPXV025.L       | 07945880823 |
| SPXV-M | 25       | 025.        | SPXV025-M      | 10            | SPXV025.TXM     | 07945826354 |
|        |          |             |                | 50            | SPXV025.LXM     | 07945826355 |
| SPXV   | 30       | 030.        | SPXV030        | 10            | SPXV030.T       | 07945880826 |
|        |          |             |                | 50            | SPXV030.L       | 07945880825 |
| SPXV-M | 30       | 030.        | SPXV030-M      | 10            | SPXV030.TXM     | 07945826356 |
|        |          |             |                | 50            | SPXV030.LXM     | 07945826357 |
| SPXV-M | 32       | 032.        | SPXV032-M      | 10            | SPXV032.TXM     | 07945826358 |
|        |          |             |                | 50            | SPXV032.LXM     | 07945826359 |
| SPXV   | 35       | 035.        | SPXV035        | 10            | SPXV035.T       | 07945826372 |
| SPXV   | 40       | 040.        | SPXV040        | 10            | SPXV040.T       | 07945826373 |
| SPXV   | 45       | 045.        | SPXV045        | 10            | SPXV045.T       | 07945826374 |
| SPXV   | 50       | 050.        | SPXV050        | 10            | SPXV050.T       | 07945826375 |
| SPXV   | 55       | 055.        | SPXV055        | 10            | SPXV055.T       | 07945826376 |
| SPXV   | 60       | 060.        | SPXV060        | 10            | SPXV060.T       | 07945826377 |

# POWR-GARD® Fuse

## SPXV SERIES SOLAR FUSE

### Electrical Specifications

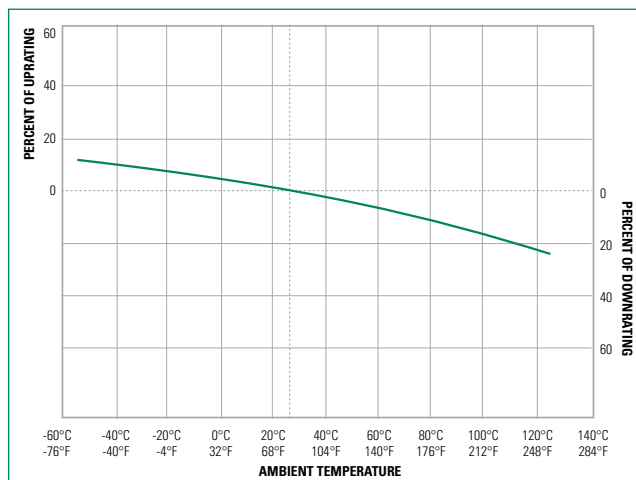
| SERIES | AMPERAGE | VOLTAGE | INTERRUPTING RATING | NOM COLD RESISTANCE (ohm) | WATTS LOSS AT 100 % RATED CURRENT (W) | WATTS LOSS AT 80 % RATED CURRENT (W) | MELTING I <sup>2</sup> t (A <sup>2</sup> s) (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 15 kA (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 30 kA (1500 V dc) | TOTAL CLEARING I <sup>2</sup> t (A <sup>2</sup> s) 50 kA (1500 V dc) |
|--------|----------|---------|---------------------|---------------------------|---------------------------------------|--------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|
|        |          | DC      | DC                  |                           |                                       |                                      |                                                         |                                                                      |                                                                      |                                                                      |
| 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*              | 0.1229                    | 2.96                                  | 1.65                                 | 14                                                      | 24                                                                   | —                                                                    | —                                                                    |
| SPXV   | 4.5      | 1500    | 50 kA*              | 0.1023                    | 2.81                                  | 1.61                                 | 34                                                      | 55                                                                   | —                                                                    | —                                                                    |
| SPXV   | 5        | 1500    | 50 kA*              | 0.0760                    | 3.01                                  | 1.66                                 | 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   | 25       | 1500    | 50 kA*              | 0.0064                    | 5.64                                  | 3.18                                 | 2671                                                    | 3202                                                                 | —                                                                    | —                                                                    |
| SPXV-M | 25       | 1500    | 50 kA               | 0.00665                   | 6.1                                   | 3.4                                  | 2304                                                    | —                                                                    | —                                                                    | 3256                                                                 |
| SPXV   | 30       | 1500    | 50 kA*              | 0.0052                    | 7.16                                  | 3.93                                 | 3770                                                    | 4692                                                                 | 6204                                                                 | —                                                                    |
| 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

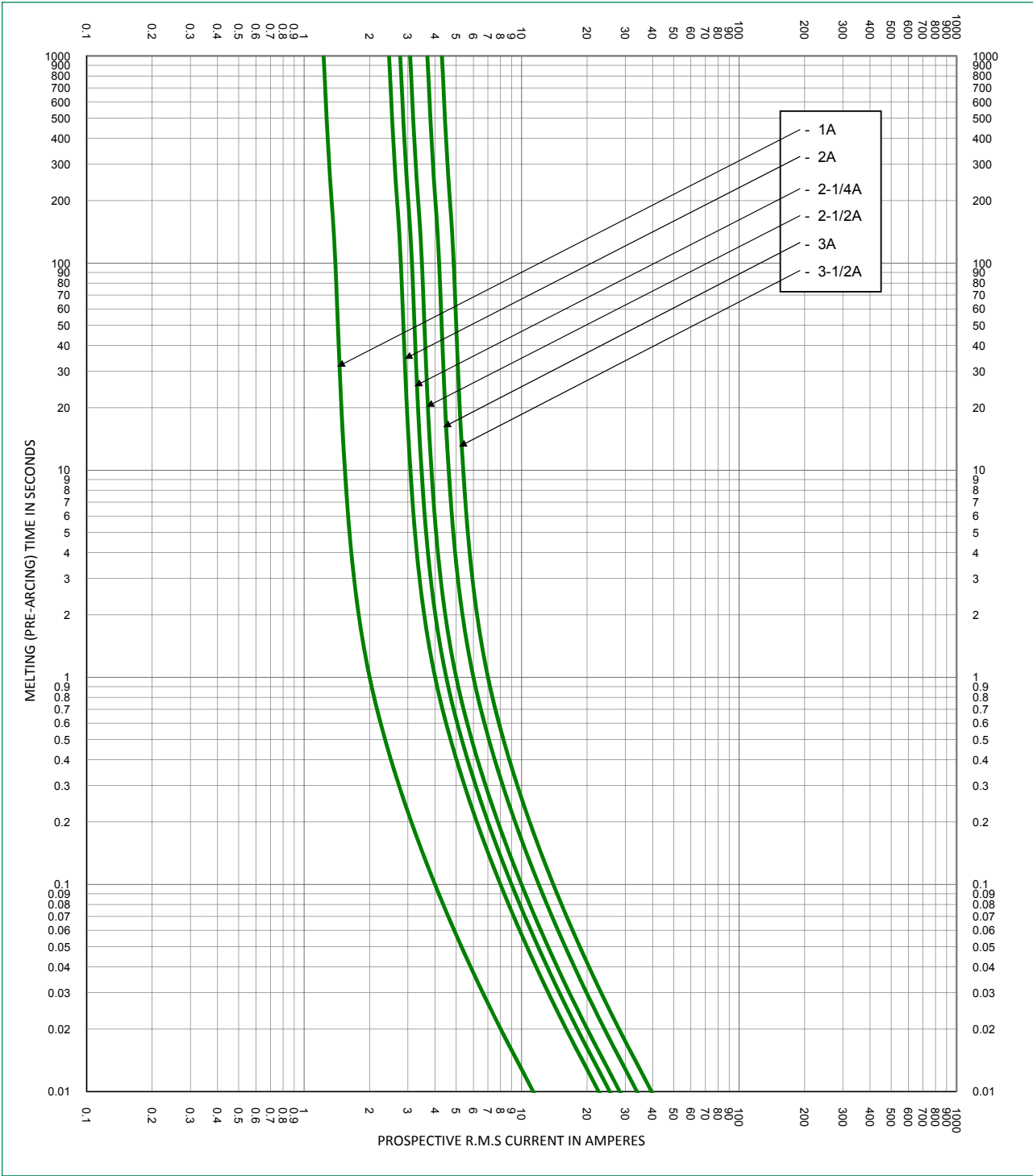
### Electrical Specification — Agency Requirements

| AMPERAGE RATING | OPENING TIME (MINUTES)          |                                  |                                 |                                  |                                 |
|-----------------|---------------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|
|                 | 100 % of Amperage Rating per UL | 113 % of Amperage Rating per IEC | 135 % of Amperage Rating per UL | 145 % of Amperage Rating per IEC | 200 % of Amperage Rating per UL |
| 1–30            | Temperature Stabilization       | 60 Min                           | 60 Max                          | 60 Max                           | 4 Max                           |
| 32–60           | Temperature Stabilization       | 60 Min                           | 60 Max                          | 60 Max                           | 6 Max                           |

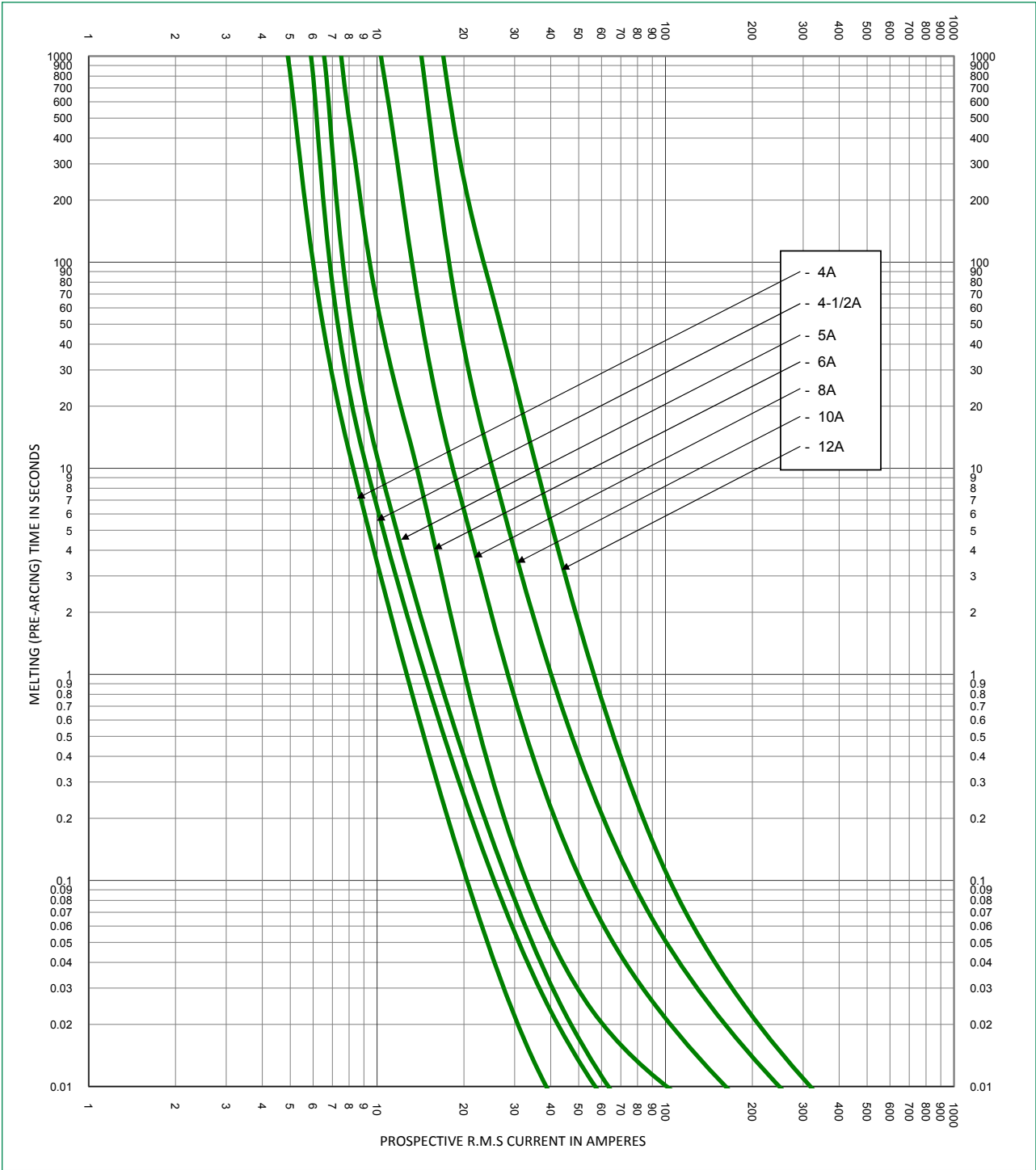
### Temperature Derating Curve (temperature of air immediately surrounding fuse)



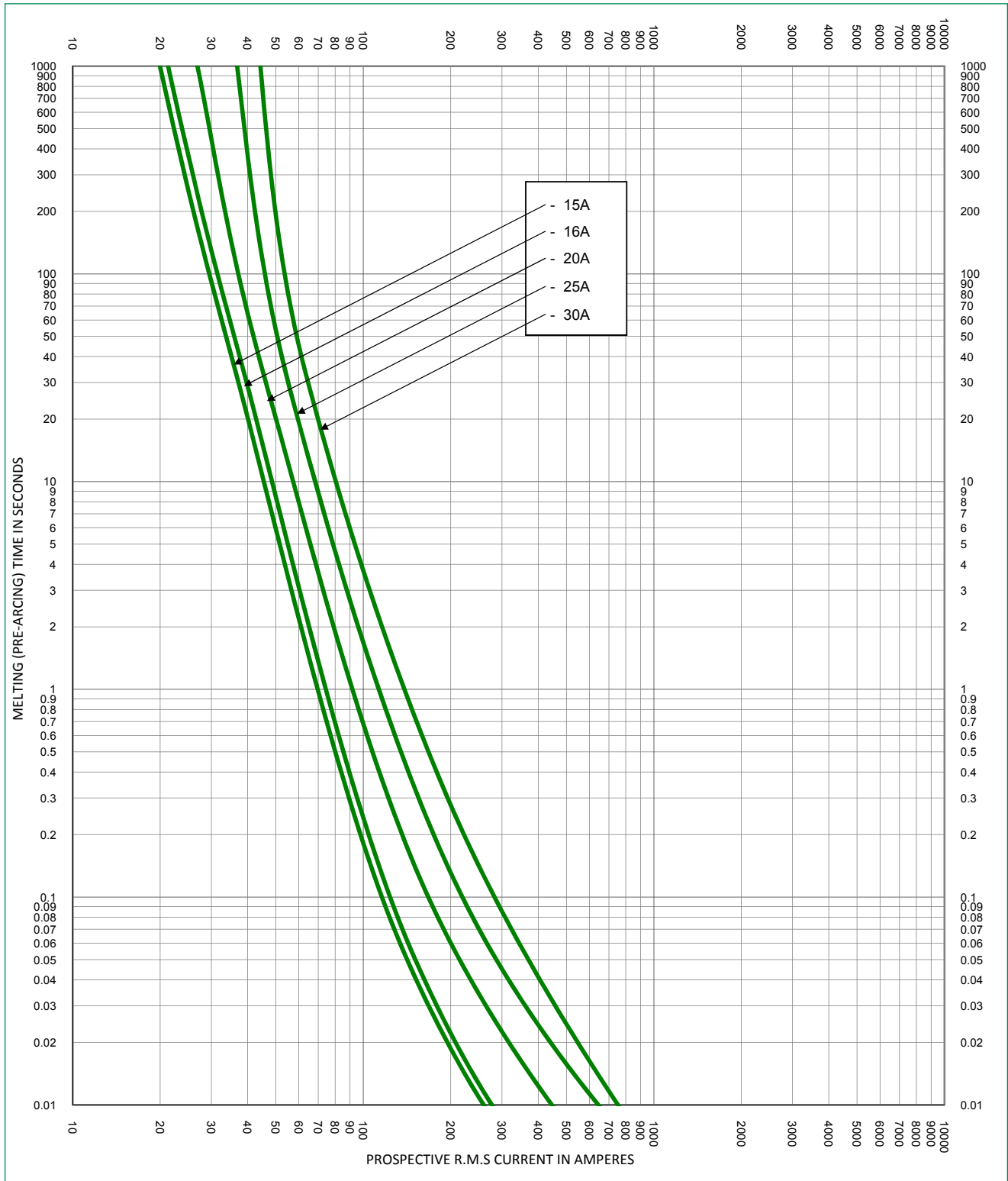
**SPXV Time Current Curve**  
(1–3.5 A)



SPXV Time Current Curve  
(4-12 A)



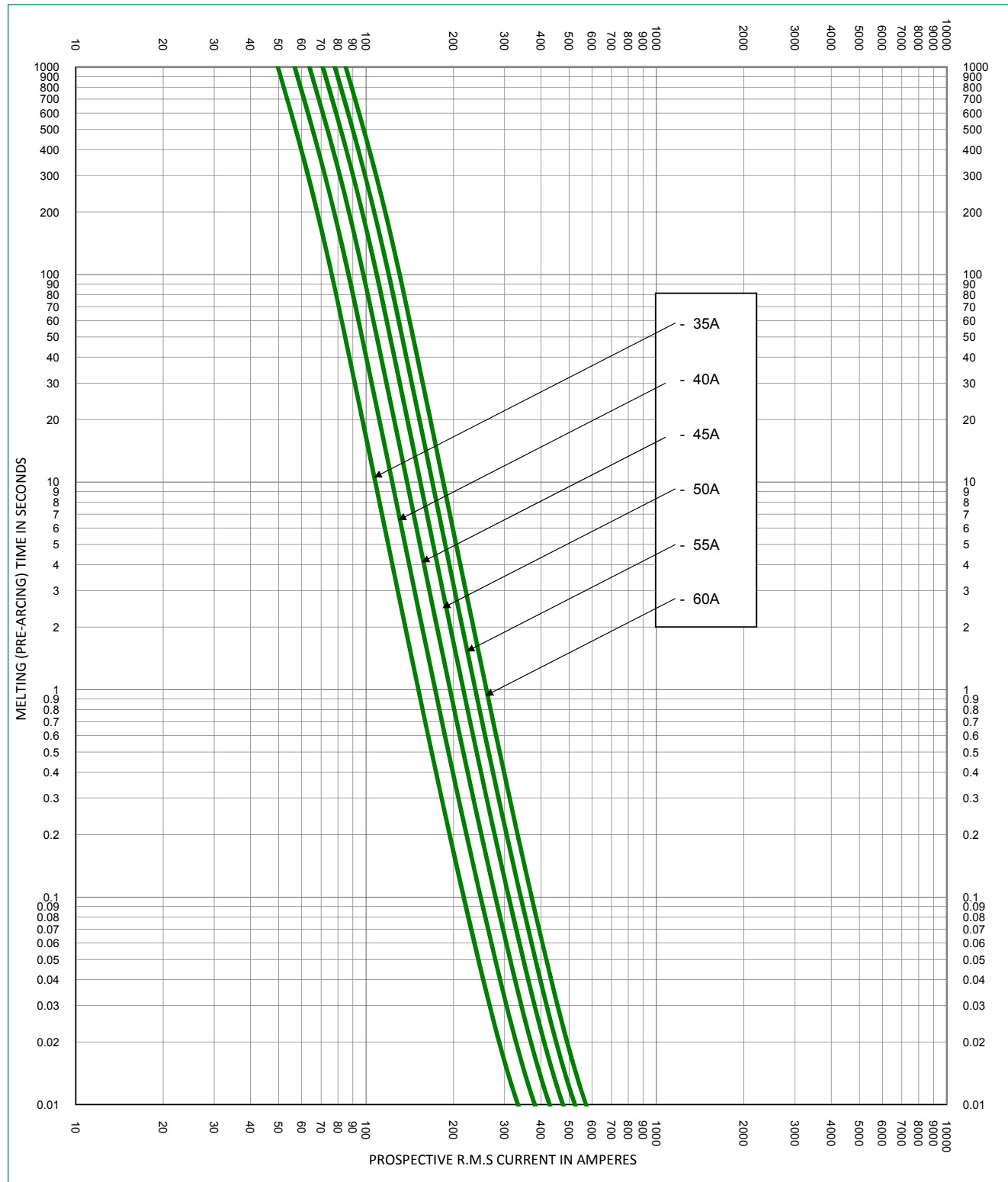
**SPXV Time Current Curve**  
(15–30 A)



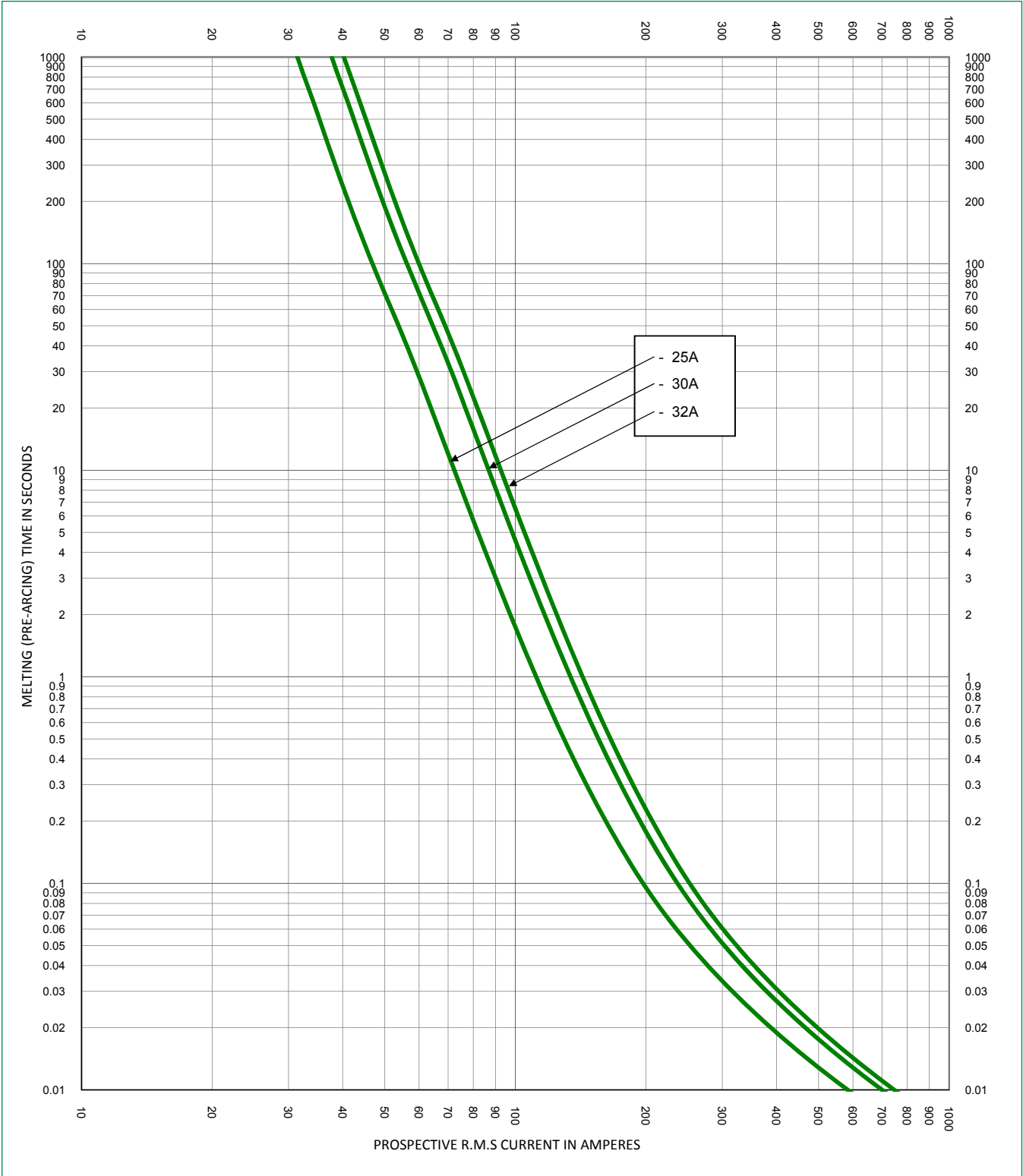
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## SPXV SERIES SOLAR FUSE

### SPXV Time Current Curve (35–60 A)



**SPXV-M Time Current Curve**  
(25–32 A)



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