

# POWR-SPEED® Fuse

## PSX SERIES HIGH-SPEED SQUARE BODY

Battery Protection Fuses • 1500 V Dc Class aBat • 80 A–1400 A



### Description

Littelfuse PSX series 1500 V dc high-speed square body fuses are specially designed to protect battery energy storage systems (BESS), photovoltaic inverters, and many dc applications such as dc common bus systems, larger industrial regenerative drives, rectifiers and metal processing equipment.

The PSX series fuses are extremely fast-acting, offering high-speed performance up to 1500 V dc, ranging from 80 A to 1400 A in the smallest NH XL package sizes. The PSX series is available with multiple mounting terminations including flush-end, DIN, and bolted-blade styles. Visual blown fuse indication is standard on all fuses and optional micro-switch is available for external indication.

The PSX series is certified to UL248-13 and designed to meet IEC 60269-7 (Class aBat) battery protection fuse standard.

### Features/Benefits

- High dc voltage rating up to 1500 V dc
- Dc interrupting rating is 250 kA
- Extremely fast acting for high speed performance
- Low watt loss provides energy efficiency for BESS applications
- Compact NH 1XL and 3XL sizes offer flexibility

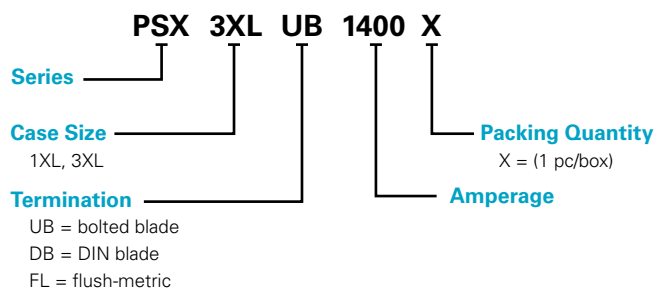
### Applications

- Battery energy storage systems (BESSs)
- Power conversion systems
- Dc common bus systems
- Hybrid PV-BESS inverters
- Regenerative drives
- Industrial heaters and welding equipment
- Metal processing equipment

### Specifications

|                              |                                                                               |
|------------------------------|-------------------------------------------------------------------------------|
| <b>Voltage Rating</b>        | Dc: 1500 V                                                                    |
| <b>Amperage Rating</b>       | 80 A–1400 A                                                                   |
| <b>Interrupting Rating</b>   | Dc: 250 kA                                                                    |
| <b>Time Constant</b>         | 1XL: $\leq 3$ ms<br>3XL: $\leq 5$ ms                                          |
| <b>Microswitch</b>           | Yes                                                                           |
| <b>Mounting</b>              | Bolted-blade style, DIN-blade style,<br>Metric flush-end style                |
| <b>Material</b>              | Body: ceramic<br>Contacts: plated copper (bladed)<br>plated brass (flush end) |
| <b>Approvals</b>             | cURus Recognized (File: E71611)                                               |
| <b>Applicable Standards</b>  | UL 248-13, IEC 60269-7                                                        |
| <b>Environmental</b>         | RoHS Compliant, REACH                                                         |
| <b>Operating Temperature</b> | -55 °C to +125 °C                                                             |
| <b>Storage Temperature</b>   | Up to +35 °C with relative humidity <65 %                                     |
| <b>Country of Origin</b>     | Mexico                                                                        |

### Ordering Part Number



### Catalog Number

| SERIES | CASE SIZE | TERMINATION | AMPERAGE | CATALOG NUMBER | ORDERING PART NUMBER |
|--------|-----------|-------------|----------|----------------|----------------------|
| PSX    | 3XL       | UB          | 1400     | PSX3XLUB1400   | PSX3XLUB1400X        |

### Recommended Accessories

**Microswitch:** MSXL2000C

**Fuseblock:** LSCR series

### Web Resources

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

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### Electrical Characteristics

| CASE SIZE | CATALOG NUMBER    |                   |                | AMPERE RATING (A) | VOLTAGE RATING (V) | INTERRUPTING RATING | MINIMUM BREAKING CAPACITY (A) | MELTING (PRE-ARC) I²T (A²S) | TOTAL CLEARING I²T (A²S) AT RATED VOLTAGE | WATTS LOSS AT 100% RATED CURRENT (W) | AGENCY CERTIFICATION |
|-----------|-------------------|-------------------|----------------|-------------------|--------------------|---------------------|-------------------------------|-----------------------------|-------------------------------------------|--------------------------------------|----------------------|
|           | FLUSH METRIC (FL) | BOLTED BLADE (UB) | DIN BLADE (DB) |                   | DC                 |                     |                               |                             | DC                                        |                                      | DC                   |
| NH 1XL    | PSX1XLFL0080      | PSX1XLUB0080      | PSX1XLD0080    | 80                | 1500               | 250 kA              | 800 A                         | 2048                        | 8720                                      | 16.4                                 | •                    |
|           | PSX1XLFL0100      | PSX1XLUB0100      | PSX1XLD0100    | 100               | 1500               | 250 kA              | 1000 A                        | 3540                        | 15485                                     | 19.1                                 | •                    |
|           | PSX1XLFL0125      | PSX1XLUB0125      | PSX1XLD0125    | 125               | 1500               | 250 kA              | 1250 A                        | 7091                        | 35720                                     | 19.6                                 | •                    |
|           | PSX1XLFL0160      | PSX1XLUB0160      | PSX1XLD0160    | 160               | 1500               | 250 kA              | 1600 A                        | 13704                       | 55490                                     | 24.6                                 | •                    |
|           | PSX1XLFL0200      | PSX1XLUB0200      | PSX1XLD0200    | 200               | 1500               | 250 kA              | 2000 A                        | 18016                       | 77240                                     | 34.6                                 | •                    |
|           | PSX1XLFL0250      | PSX1XLUB0250      | PSX1XLD0250    | 250               | 1500               | 250 kA              | 2500 A                        | 36552                       | 156450                                    | 38.5                                 | •                    |
|           | PSX1XLFL0280      | PSX1XLUB0280      | PSX1XLD0280    | 280               | 1500               | 250 kA              | 2800 A                        | 36552                       | 156450                                    | 48.7                                 | •                    |
|           | PSX1XLFL0315      | PSX1XLUB0315      | PSX1XLD0315    | 315               | 1500               | 250 kA              | 3150 A                        | 56940                       | 212400                                    | 53.6                                 | •                    |
|           | PSX1XLFL0350      | PSX1XLUB0350      | PSX1XLD0350    | 350               | 1500               | 250 kA              | 3500 A                        | 86623                       | 332050                                    | 51.8                                 | •                    |
|           | PSX1XLFL0400      | PSX1XLUB0400      | PSX1XLD0400    | 400               | 1500               | 250 kA              | 4000 A                        | 116271                      | 352600                                    | 64.4                                 | •                    |
|           | PSX1XLFL0450      | PSX1XLUB0450      | PSX1XLD0450    | 450               | 1500               | 250 kA              | 6750 A                        | 149336                      | 540850                                    | 69.3                                 | •                    |
|           | PSX1XLFL0500      | PSX1XLUB0500      | PSX1XLD0500    | 500               | 1500               | 250 kA              | 7500 A                        | 250109                      | 774600                                    | 71.5                                 | •                    |
|           | PSX1XLFL0550      | PSX1XLUB0550      | PSX1XLD0550    | 550               | 1500               | 250 kA              | 8250 A                        | 276650                      | 924967                                    | 83.1                                 | •                    |
|           | PSX1XLFL0630      | PSX1XLUB0630      | PSX1XLD0630    | 630               | 1500               | 250 kA              | 9450 A                        | 276650                      | 924967                                    | 127.3                                | •                    |
| NH 3XL    | PSX3XLFL0450      | PSX3XLUB0450      | PSX3XLD0450    | 450               | 1500               | 250 kA              | 4500 A                        | 57143                       | 194500                                    | 146.3                                | •                    |
|           | PSX3XLFL0500      | PSX3XLUB0500      | PSX3XLD0500    | 500               | 1500               | 250 kA              | 5000 A                        | 98570                       | 333900                                    | 132.5                                | •                    |
|           | PSX3XLFL0550      | PSX3XLUB0550      | PSX3XLD0550    | 550               | 1500               | 250 kA              | 5500 A                        | 142790                      | 451600                                    | 136.7                                | •                    |
|           | PSX3XLFL0630      | PSX3XLUB0630      | PSX3XLD0630    | 630               | 1500               | 250 kA              | 6300 A                        | 205617                      | 650304                                    | 150.9                                | •                    |
|           | PSX3XLFL0700      | PSX3XLUB0700      | PSX3XLD0700    | 700               | 1500               | 250 kA              | 7000 A                        | 305720                      | 1003650                                   | 164.5                                | •                    |
|           | PSX3XLFL0800      | PSX3XLUB0800      | PSX3XLD0800    | 800               | 1500               | 250 kA              | 8000 A                        | 335493                      | 1150000                                   | 209.6                                | •                    |
|           | PSX3XLFL0900      | PSX3XLUB0900      | PSX3XLD0900    | 900               | 1500               | 250 kA              | 9000 A                        | 403262                      | 1308500                                   | 266.9                                | •                    |
|           | PSX3XLFL1000      | PSX3XLUB1000      | PSX3XLD1000    | 1000              | 1500               | 250 kA              | 10000 A                       | 484792                      | 1791500                                   | 335.0                                | •                    |
|           | PSX3XLFL1100      | PSX3XLUB1100      | PSX3XLD1100    | 1100              | 1500               | 250 kA              | 11000 A                       | 656719                      | 2201250                                   | 341.0                                | •                    |
|           | PSX3XLFL1250      | PSX3XLUB1250      | PSX3XLD1250    | 1250              | 1500               | 250 kA              | 12500 A                       | 995376                      | 3003500                                   | 346.9                                | •                    |
|           | PSX3XLFL1400      | PSX3XLUB1400      | PSX3XLD1400    | 1400              | 1500               | 250 kA              | 14000 A                       | 1395828                     | 4228250                                   | 361.9                                | •                    |

### Ordering Information

| CASE SIZE | FLUSH METRIC (FL) |                      |             | BOLTED BLADE (UB) |                      |             | DIN BLADE (DB) |                      |             | BOX QUANTITY |
|-----------|-------------------|----------------------|-------------|-------------------|----------------------|-------------|----------------|----------------------|-------------|--------------|
|           | CATALOG NUMBER    | ORDERING PART NUMBER | UPC         | CATALOG NUMBER    | ORDERING PART NUMBER | UPC         | CATALOG NUMBER | ORDERING PART NUMBER | UPC         |              |
| NH 1XL    | PSX1XLFL0080      | PSX1XLFL0080X        | 07945825798 | PSX1XLUB0080      | PSX1XLUB0080X        | 07945825819 | PSX1XLD0080    | PSX1XLD0080X         | 07945826320 | 1 pc/box     |
|           | PSX1XLFL0100      | PSX1XLFL0100X        | 07945825799 | PSX1XLUB0100      | PSX1XLUB0100X        | 07945825820 | PSX1XLD0100    | PSX1XLD0100X         | 07945826321 | 1 pc/box     |
|           | PSX1XLFL0125      | PSX1XLFL0125X        | 07945825800 | PSX1XLUB0125      | PSX1XLUB0125X        | 07945825821 | PSX1XLD0125    | PSX1XLD0125X         | 07945826322 | 1 pc/box     |
|           | PSX1XLFL0160      | PSX1XLFL0160X        | 07945825801 | PSX1XLUB0160      | PSX1XLUB0160X        | 07945825822 | PSX1XLD0160    | PSX1XLD0160X         | 07945826323 | 1 pc/box     |
|           | PSX1XLFL0200      | PSX1XLFL0200X        | 07945825802 | PSX1XLUB0200      | PSX1XLUB0200X        | 07945825823 | PSX1XLD0200    | PSX1XLD0200X         | 07945826324 | 1 pc/box     |
|           | PSX1XLFL0250      | PSX1XLFL0250X        | 07945825803 | PSX1XLUB0250      | PSX1XLUB0250X        | 07945825824 | PSX1XLD0250    | PSX1XLD0250X         | 07945826325 | 1 pc/box     |
|           | PSX1XLFL0280      | PSX1XLFL0280X        | 07945825804 | PSX1XLUB0280      | PSX1XLUB0280X        | 07945825825 | PSX1XLD0280    | PSX1XLD0280X         | 07945826326 | 1 pc/box     |
|           | PSX1XLFL0315      | PSX1XLFL0315X        | 07945825805 | PSX1XLUB0315      | PSX1XLUB0315X        | 07945825826 | PSX1XLD0315    | PSX1XLD0315X         | 07945826327 | 1 pc/box     |
|           | PSX1XLFL0350      | PSX1XLFL0350X        | 07945825806 | PSX1XLUB0350      | PSX1XLUB0350X        | 07945825827 | PSX1XLD0350    | PSX1XLD0350X         | 07945826328 | 1 pc/box     |
|           | PSX1XLFL0400      | PSX1XLFL0400X        | 07945825807 | PSX1XLUB0400      | PSX1XLUB0400X        | 07945825828 | PSX1XLD0400    | PSX1XLD0400X         | 07945826329 | 1 pc/box     |
|           | PSX1XLFL0450      | PSX1XLFL0450X        | 07945825808 | PSX1XLUB0450      | PSX1XLUB0450X        | 07945825829 | PSX1XLD0450    | PSX1XLD0450X         | 07945826330 | 1 pc/box     |
|           | PSX1XLFL0500      | PSX1XLFL0500X        | 07945825809 | PSX1XLUB0500      | PSX1XLUB0500X        | 07945826310 | PSX1XLD0500    | PSX1XLD0500X         | 07945826331 | 1 pc/box     |
|           | PSX1XLFL0550      | PSX1XLFL0550X        | 07945825810 | PSX1XLUB0550      | PSX1XLUB0550X        | 07945826311 | PSX1XLD0550    | PSX1XLD0550X         | 07945826332 | 1 pc/box     |
|           | PSX1XLFL0630      | PSX1XLFL0630X        | 07945825811 | PSX1XLUB0630      | PSX1XLUB0630X        | 07945826312 | PSX1XLD0630    | PSX1XLD0630X         | 07945826333 | 1 pc/box     |
| NH 3XL    | PSX3XLFL0450      | PSX3XLFL0450X        | 07945828641 | PSX3XLUB0450      | PSX3XLUB0450X        | 07945828645 | PSX3XLD0450    | PSX3XLD0450X         | 07945828649 | 1 pc/box     |
|           | PSX3XLFL0500      | PSX3XLFL0500X        | 07945828642 | PSX3XLUB0500      | PSX3XLUB0500X        | 07945828646 | PSX3XLD0500    | PSX3XLD0500X         | 07945828650 | 1 pc/box     |
|           | PSX3XLFL0550      | PSX3XLFL0550X        | 07945828643 | PSX3XLUB0550      | PSX3XLUB0550X        | 07945828647 | PSX3XLD0550    | PSX3XLD0550X         | 07945828651 | 1 pc/box     |
|           | PSX3XLFL0630      | PSX3XLFL0630X        | 07945828644 | PSX3XLUB0630      | PSX3XLUB0630X        | 07945828648 | PSX3XLD0630    | PSX3XLD0630X         | 07945828652 | 1 pc/box     |
|           | PSX3XLFL0700      | PSX3XLFL0700X        | 07945825812 | PSX3XLUB0700      | PSX3XLUB0700X        | 07945826313 | PSX3XLD0700    | PSX3XLD0700X         | 07945826334 | 1 pc/box     |
|           | PSX3XLFL0800      | PSX3XLFL0800X        | 07945825813 | PSX3XLUB0800      | PSX3XLUB0800X        | 07945826314 | PSX3XLD0800    | PSX3XLD0800X         | 07945826335 | 1 pc/box     |
|           | PSX3XLFL0900      | PSX3XLFL0900X        | 07945825814 | PSX3XLUB0900      | PSX3XLUB0900X        | 07945826315 | PSX3XLD0900    | PSX3XLD0900X         | 07945826336 | 1 pc/box     |
|           | PSX3XLFL1000      | PSX3XLFL1000X        | 07945825815 | PSX3XLUB1000      | PSX3XLUB1000X        | 07945826316 | PSX3XLD1000    | PSX3XLD1000X         | 07945826337 | 1 pc/box     |
|           | PSX3XLFL1100      | PSX3XLFL1100X        | 07945825816 | PSX3XLUB1100      | PSX3XLUB1100X        | 07945826317 | PSX3XLD1100    | PSX3XLD1100X         | 07945826338 | 1 pc/box     |
|           | PSX3XLFL1250      | PSX3XLFL1250X        | 07945825817 | PSX3XLUB1250      | PSX3XLUB1250X        | 07945826318 | PSX3XLD1250    | PSX3XLD1250X         | 07945826339 | 1 pc/box     |
|           | PSX3XLFL1400      | PSX3XLFL1400X        | 07945825818 | PSX3XLUB1400      | PSX3XLUB1400X        | 07945826319 | PSX3XLD1400    | PSX3XLD1400X         | 07945826340 | 1 pc/box     |

# POWR-SPEED® Fuse

## PSX SERIES HIGH-SPEED SQUARE BODY

### Dimensions

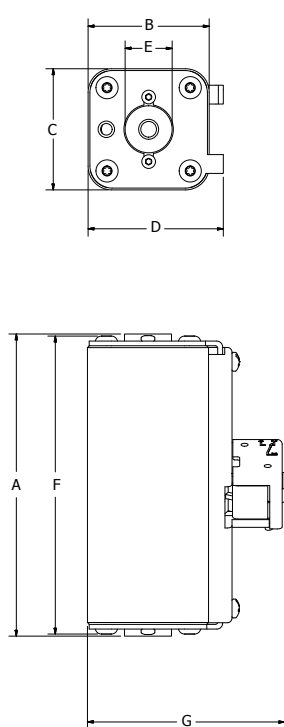


Figure 1. Flush-metric style

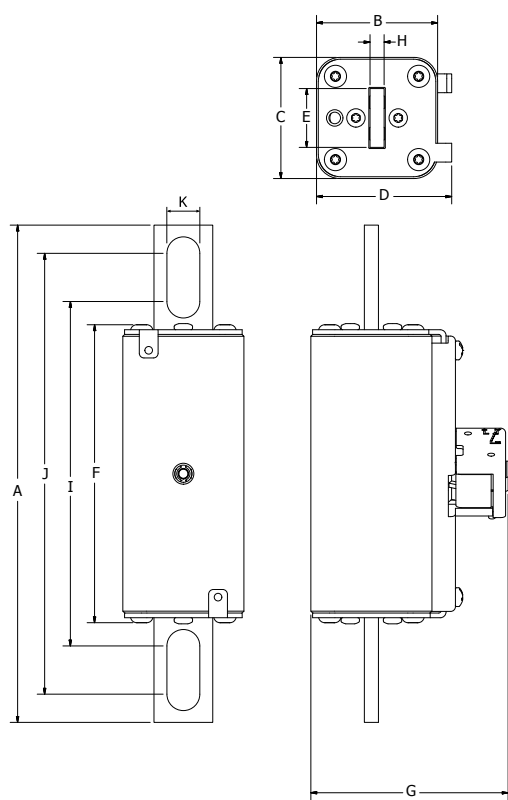


Figure 2. Bolted-blade style

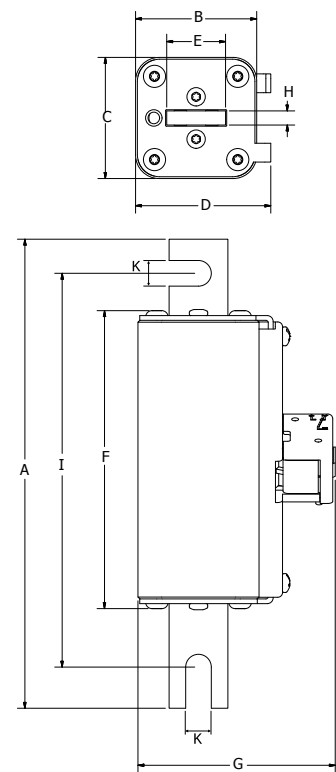


Figure 3. DIN-blade style

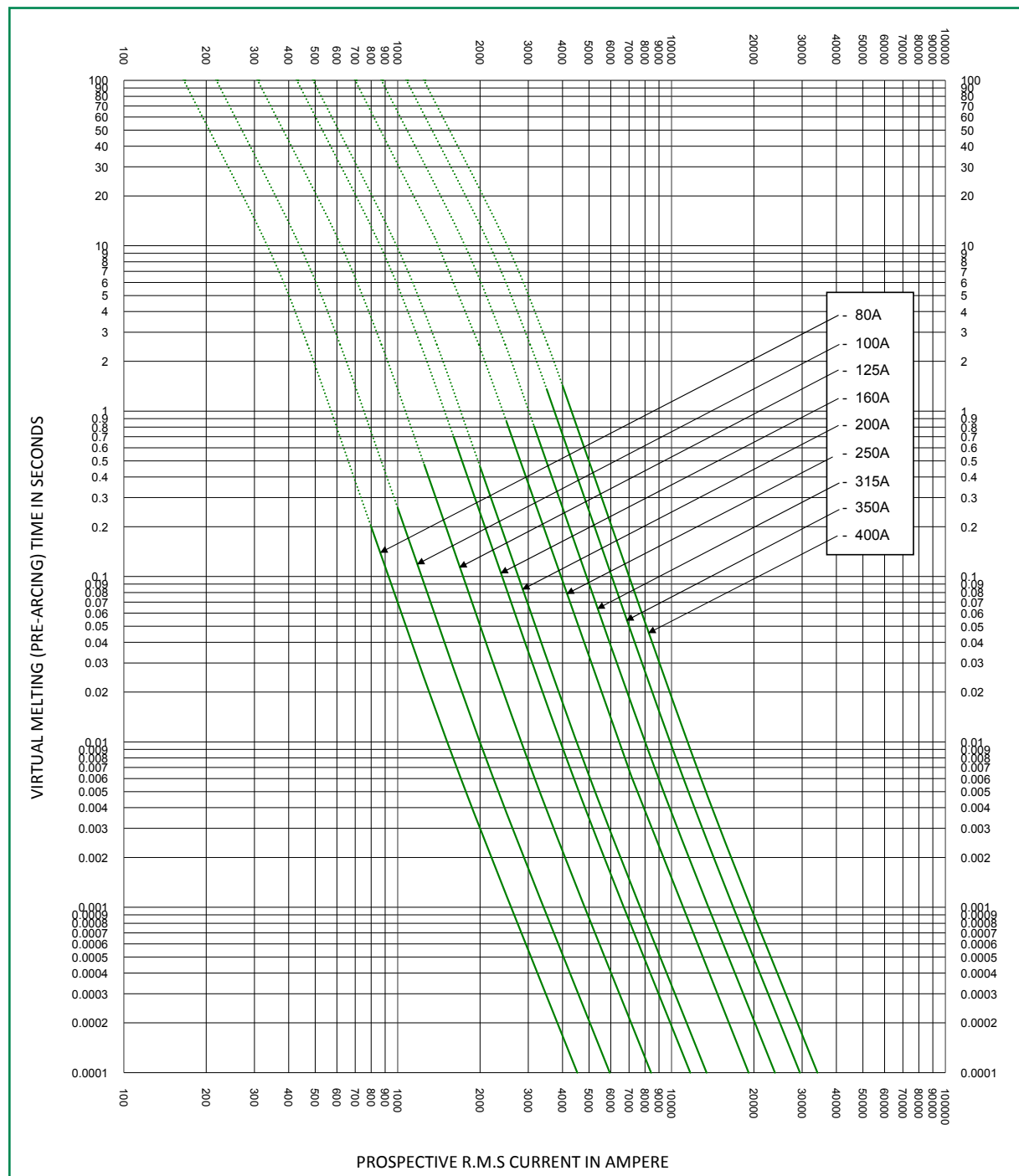
| DIMENSIONS MM (IN) |                   |        |              |             |             |             |             |              |              |            |              |              |                       |                      |            |                    |
|--------------------|-------------------|--------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|------------|--------------|--------------|-----------------------|----------------------|------------|--------------------|
| CASE SIZE          | MOUNTING STYLE    | FIGURE | A            | B           | C           | D           | E           | F            | G*           | H          | I            | J            | K                     | RECOMMENDED FASTENER | THREAD     | RECOMMENDED TORQUE |
| NH 1XL             | FLUSH METRIC (FL) | 1      | 128.5 (5.06) | 51.5 (2.03) | 51.5 (2.03) | 57.5 (2.26) | 20.0 (0.79) | 128.5 (5.06) | 83.9 (3.30)  | -          | -            | -            | -                     | -                    | M8 x 1.25  | 13–20 Nm           |
|                    | BOLTED BLADE (UB) | 2      | 211.7 (8.33) | 51.5 (2.03) | 51.5 (2.03) | 57.5 (2.26) | 25.0 (0.98) | 127.7 (5.03) | 83.9 (3.30)  | 6.0 (0.24) | 146.5 (5.77) | 187.5 (7.38) | 14.0 (0.55)           | 12 mm (1/2)          | -          | 64 Nm              |
|                    | DIN BLADE (DB)    | 3      | 199.7 (7.86) | 51.5 (2.03) | 51.5 (2.03) | 57.5 (2.26) | 25.0 (0.98) | 127.7 (5.03) | 83.9 (3.30)  | 6.0 (0.24) | 167.5 (6.59) | -            | 10.5-11.0 (0.41-0.43) | 10 mm (3/8)          | -          | 26 Nm              |
| NH 3XL             | FLUSH METRIC (FL) | 1      | 129.5 (5.10) | 73.5 (2.89) | 73.5 (2.89) | 79.5 (3.13) | 30.0 (1.18) | 129.5 (5.10) | 105.9 (4.17) | -          | -            | -            | -                     | -                    | M12 x 1.75 | 45–55 Nm           |
|                    | BOLTED BLADE (UB) | 2      | 213.5 (8.41) | 73.5 (2.89) | 73.5 (2.89) | 79.5 (3.13) | 36.0 (1.42) | 128.7 (5.07) | 105.9 (4.17) | 6.0 (0.24) | 153.1 (6.03) | 186.1 (7.33) | 16.0 (0.63)           | 14 mm (9/16)         | -          | 92 Nm              |
|                    | DIN BLADE (DB)    | 3      | 199.0 (7.83) | 73.5 (2.89) | 73.5 (2.89) | 79.5 (3.13) | 36.0 (1.42) | 128.7 (5.07) | 105.9 (4.17) | 6.0 (0.24) | 166.8 (6.57) | -            | 10.5-11.0 (0.41-0.43) | 10 mm (3/8)          | -          | 26 Nm              |

\*These dimensions include the optional bolt-on microswitch.

# POWR-SPEED® Fuse

## PSX SERIES HIGH-SPEED SQUARE BODY

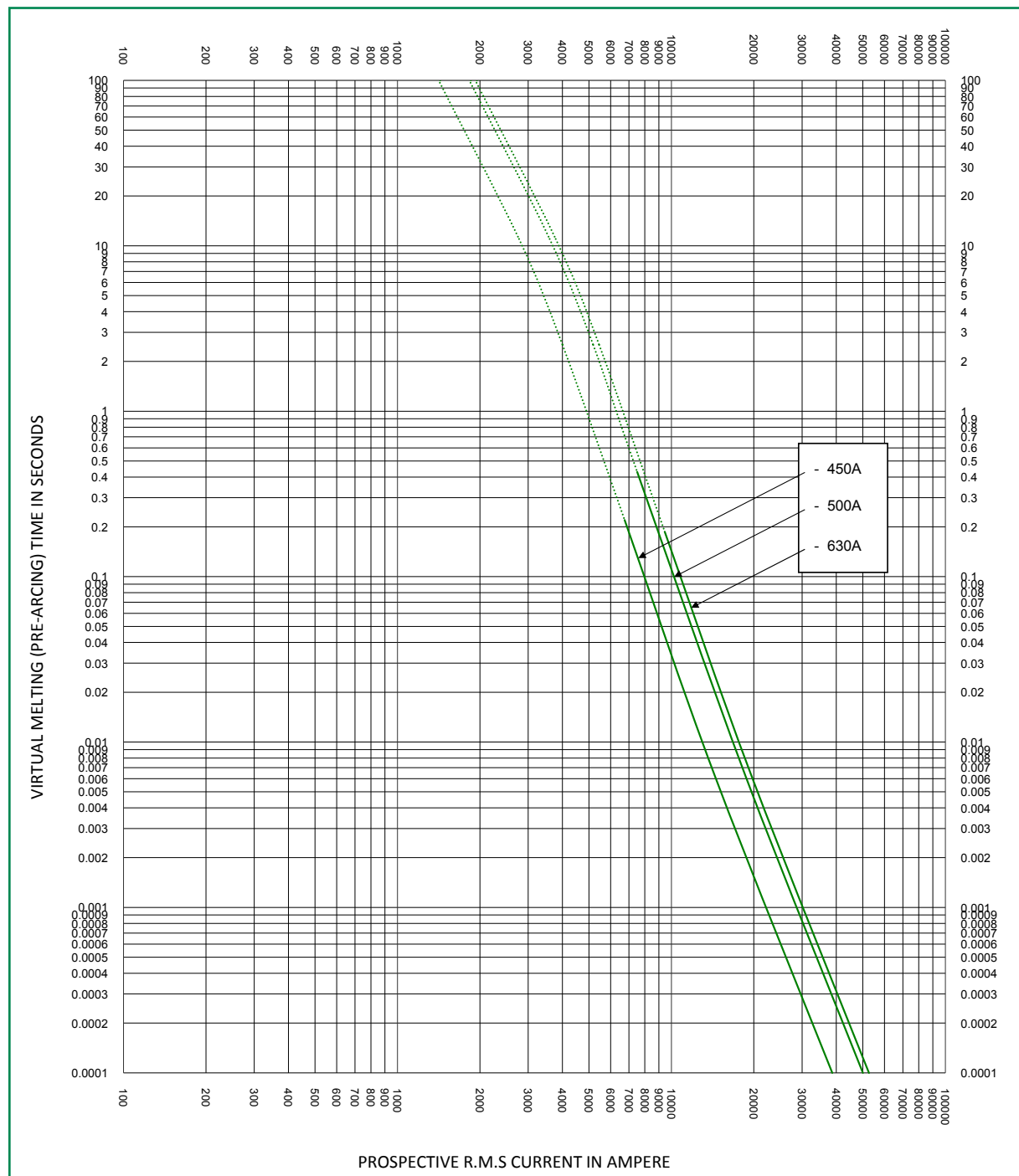
### Time Current Curve (1XL Case Size 80 A–400 A)



# POWR-SPEED® Fuse

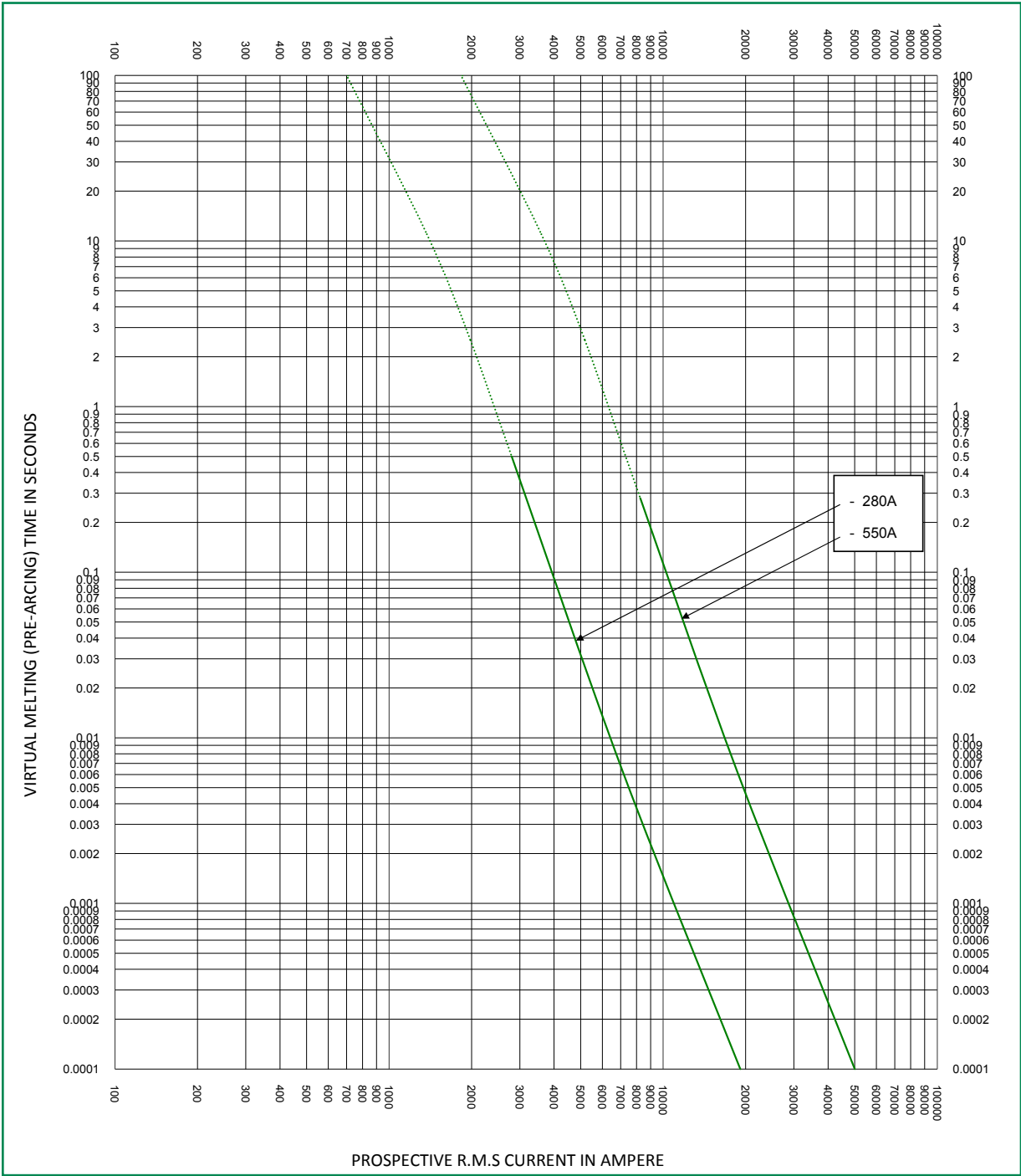
## PSX SERIES HIGH-SPEED SQUARE BODY

### Time Current Curve (1XL Case Size 450 A–630 A)



**POWR-SPEED® Fuse**  
PSX SERIES HIGH-SPEED SQUARE BODY

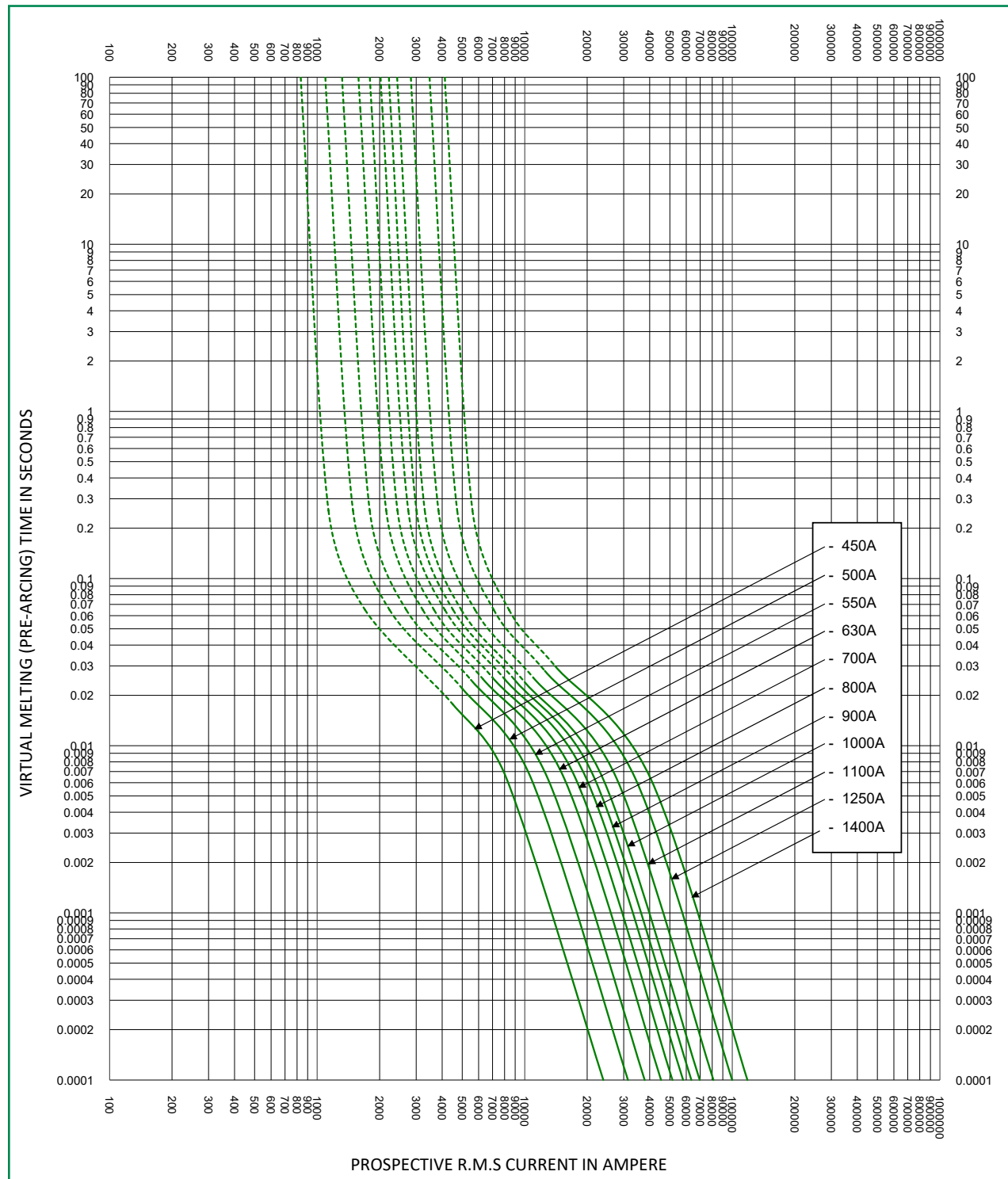
**Time Current Curve (1XL Case Size 280 A and 550 A)**



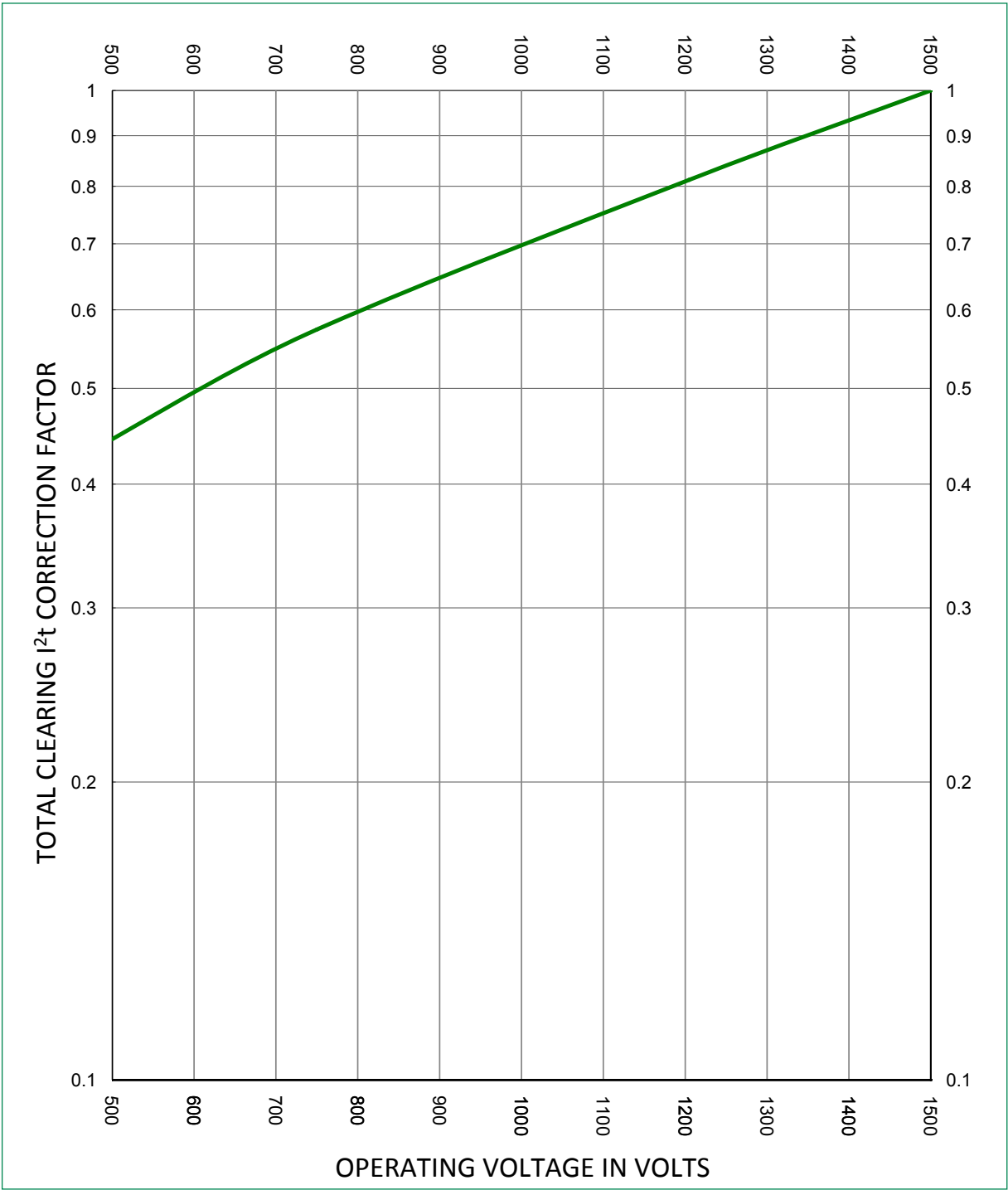
# POWR-SPEED® Fuse

## PSX SERIES HIGH-SPEED SQUARE BODY

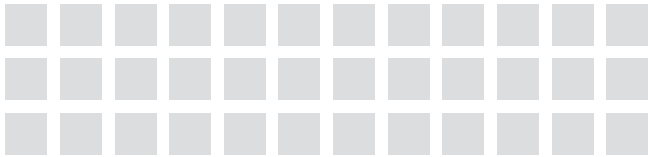
### Time Current Curve (3XL Case Size 450 A–1400 A)



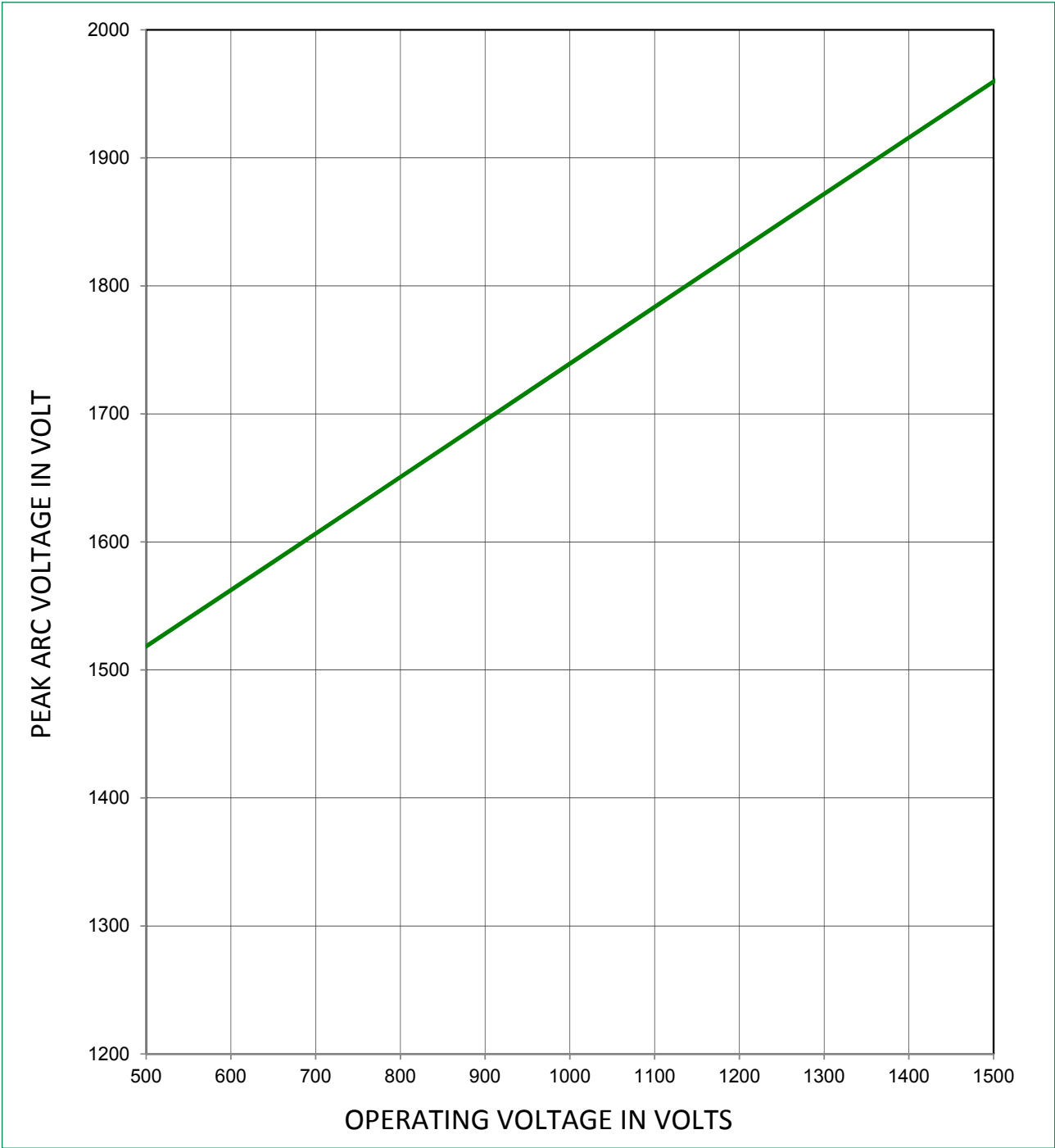
**Total Clearing I²t Correction Factor Curve (1XL and 3XL)**





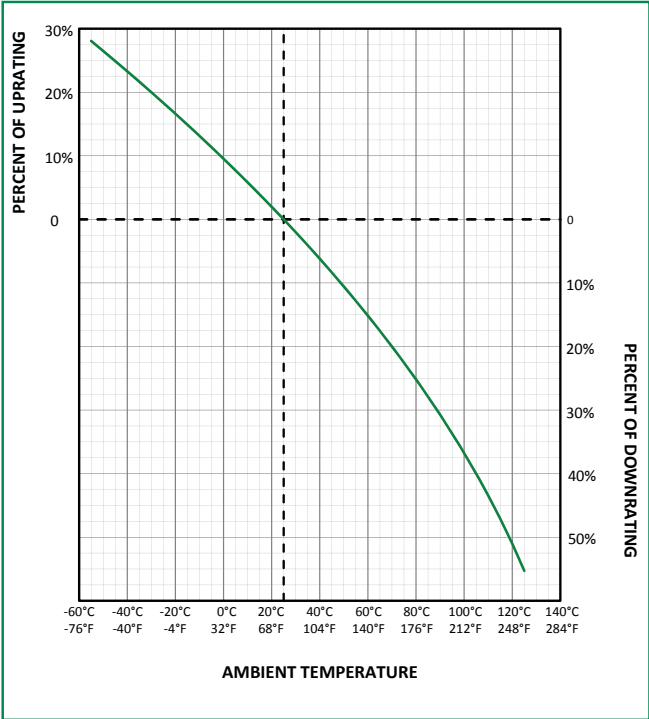


**Peak Arc Voltage Curve 1XL and 3XL**

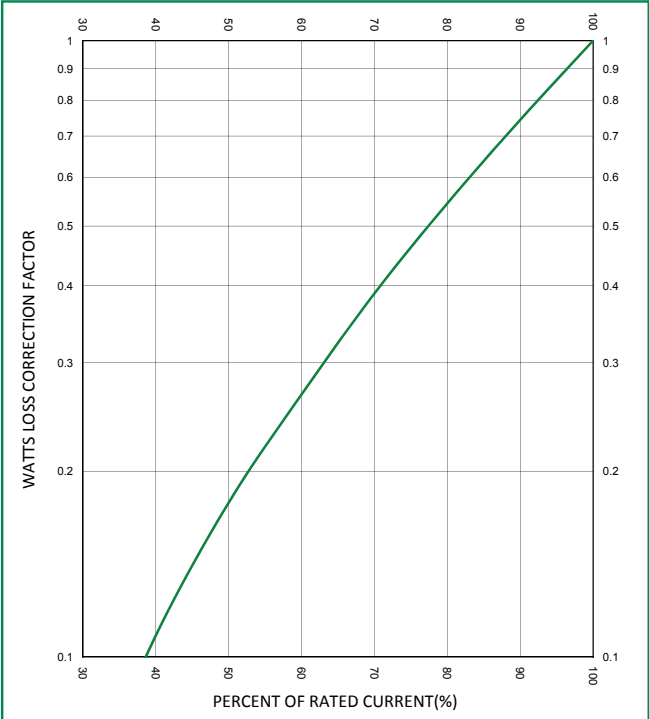


Temperature Derating Curve

(temperature of air immediately surrounding fuse)



Watts Loss Correction Factor Curve



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