

POWR-GARD® Fuse

L70S SERIES HIGH-SPEED ROUND BODY

700 V ac • Very Fast Acting • 650 V dc • 10–800 A



Description

Littelfuse L70S series high-speed fuses are designed to protect today's equipment and systems, and are manufactured with Littelfuse-developed technology that sets tomorrow's standards for accuracy, consistent quality, reliability, and predictable performance.

Littelfuse engineers have redefined high-speed fuse technology by using advanced metallurgical, polymer, and materials research, mathematical modeling, and computerized statistical analysis.

Features/Benefits

- Extremely current limiting
- Low watt losses
- Controlled transient over-voltages
- UL Recognized

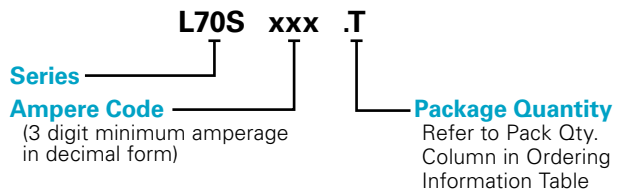
Applications

- Ac and dc drives
- Dc common bus protection
- Power converters
- UPS
- Soft-starters

Specifications

| | |
|------------------------------|---|
| Voltage Rating | 700 V ac 650 V dc |
| Amperage Rating | 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125, 150, 175, 200, 225, 250, 300, 350, 400, 450, 500, 600, 700, 800 |
| Interrupting Rating | Ac: 200 kAIC Dc: 20 kAIC |
| Material | Body: melamine Terminals: copper (silver plated) |
| Mounting Type | Cylindrical (10–0 A) Bolted tags (35–800 A) |
| Operating Temperature | -55 °C to +125 °C |
| Storage Temperature | Up to 35 °C with relative humidity < 65 % |
| Approvals | UL Recognized (File: E71611) CSA Recognized (File: LR29862) |
| Environmental | RoHS Compliant |
| Country of Origin | Mexico |

Part Numbering System



| SERIES | AMP | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|----------------|-----------------|
| L70S | 10 | L70S010 | L70S010.T |
| L70S | 500 | L70S500 | L70S500.X |

Recommended Fuse Block

LSCR001 (35–100 A)
LSCR002 (125–800 A)
107/127 Series (10-30A)

Web Resources

Download technical documents: Littelfuse.com/L70S

Note: high-speed fuses are designed for fixed installations. They are not intended for use in moving vehicle applications.

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Electrical Specifications

| CATALOG NUMBER | AMPERAGE RATING | VOLTAGE RATING | | INTERRUPT RATING | | MELTING (PRE-ARC) I ² T (A ² s) | TOTAL CLEARING I ² T (A ² s) | TOTAL CLEARING I ² T (A ² s) | TOTAL CLEARING I ² T (A ² s) | WATTS LOSS AT 100 % RATED CURRENT | WATTS LOSS AT 80 % RATED CURRENT |
|----------------|-----------------|----------------|-----|------------------|-------|---|--|--|--|-----------------------------------|----------------------------------|
| | | AC | DC | AC | DC | | 100 kA @ 700 V AC | 200 kA @ 700 V AC | 20 kA @ 650 V DC | (W) | (W) |
| L70S010 | 10 | 700 | 650 | 200 kA | 20 kA | 21 | 160 | 173 | 346 | 2 | 1 |
| L70S015 | 15 | 700 | 650 | 200 kA | 20 kA | 34 | 330 | 355 | 270 | 2 | 2 |
| L70S020 | 20 | 700 | 650 | 200 kA | 20 kA | 48 | 550 | 599 | 300 | 5 | 2 |
| L70S025 | 25 | 700 | 650 | 200 kA | 20 kA | 62 | 810 | 900 | 340 | 7 | 4 |
| L70S030 | 30 | 700 | 650 | 200 kA | 20 kA | 77 | 1,130 | 1,220 | 417 | 10 | 5 |
| L70S035 | 35 | 700 | 650 | 200 kA | 20 kA | 110 | 1,470 | 1,500 | 500 | 12 | 6 |
| L70S040 | 40 | 700 | 650 | 200 kA | 20 kA | 150 | 1,830 | 2,000 | 660 | 13 | 7 |
| L70S050 | 50 | 700 | 650 | 200 kA | 20 kA | 250 | 2,670 | 3,200 | 1,070 | 16 | 9 |
| L70S060 | 60 | 700 | 650 | 200 kA | 20 kA | 380 | 3,646 | 4,674 | 1,572 | 18 | 9 |
| L70S070 | 70 | 700 | 650 | 200 kA | 20 kA | 545 | 4,800 | 6,000 | 1,970 | 16 | 9 |
| L70S080 | 80 | 700 | 650 | 200 kA | 20 kA | 745 | 6,180 | 7,550 | 2,380 | 21 | 11 |
| L70S090 | 90 | 700 | 650 | 200 kA | 20 kA | 990 | 7,650 | 9,250 | 2,830 | 25 | 13 |
| L70S100 | 100 | 700 | 650 | 200 kA | 20 kA | 1,266 | 9,407 | 11,117 | 3,266 | 29 | 14 |
| L70S125 | 125 | 700 | 650 | 200 kA | 20 kA | 2,150 | 14,700 | 17,550 | 4,900 | 33 | 17 |
| L70S150 | 150 | 700 | 650 | 200 kA | 20 kA | 3,280 | 21,250 | 25,700 | 6,800 | 51 | 24 |
| L70S175 | 175 | 700 | 650 | 200 kA | 20 kA | 4,700 | 28,750 | 34,800 | 9,000 | 63 | 28 |
| L70S200 | 200 | 700 | 650 | 200 kA | 20 kA | 6,411 | 37,300 | 45,583 | 11,447 | 75 | 33 |
| L70S225 | 225 | 700 | 650 | 200 kA | 20 kA | 8,000 | 46,500 | 57,000 | 16,000 | 43 | 24 |
| L70S250 | 250 | 700 | 650 | 200 kA | 20 kA | 9,900 | 58,000 | 69,500 | 22,000 | 49 | 27 |
| L70S300 | 300 | 700 | 650 | 200 kA | 20 kA | 14,000 | 83,000 | 97,700 | 37,500 | 60 | 33 |
| L70S350 | 350 | 700 | 650 | 200 kA | 20 kA | 19,000 | 113,000 | 131,000 | 59,000 | 71 | 36 |
| L70S400 | 400 | 700 | 650 | 200 kA | 20 kA | 24,373 | 147,290 | 169,000 | 87,875 | 107 | 49 |
| L70S450 | 450 | 700 | 650 | 200 kA | 20 kA | 33,000 | 191,000 | 219,000 | 119,000 | 85 | 47 |
| L70S500 | 500 | 700 | 650 | 200 kA | 20 kA | 44,200 | 240,000 | 275,000 | 155,000 | 92 | 49 |
| L70S600 | 600 | 700 | 650 | 200 kA | 20 kA | 72,000 | 370,250 | 405,000 | 246,182 | 106 | 56 |
| L70S700 | 700 | 700 | 650 | 200 kA | 20 kA | 110,000 | 526,000 | 573,000 | 255,000 | 128 | 67 |
| L70S800 | 800 | 700 | 650 | 200 kA | 20 kA | 157,082 | 735,330 | 762,333 | 262,949 | 156 | 78 |

POWR-GARD® Fuse

L70S SERIES HIGH-SPEED ROUND BODY

Ordering Information

| SERIES | AMPERAGE RATING | AMP CODE | CATALOG NUMBER | ORDERING NUMBER | PACK QUANTITY | UPC |
|--------|-----------------|----------|----------------|-----------------|---------------|-------------|
| L70S | 10 | 010 | L70S010 | L70S010.T | 10 Pcs/ Box | 07945810161 |
| L70S | 15 | 015 | L70S015 | L70S015.T | 10 Pcs/ Box | 07945810163 |
| L70S | 20 | 020 | L70S020 | L70S020.T | 10 Pcs/ Box | 07945810164 |
| L70S | 25 | 025 | L70S025 | L70S025.T | 10 Pcs/ Box | 07945810165 |
| L70S | 30 | 030 | L70S030 | L70S030.T | 10 Pcs/ Box | 07945810166 |
| L70S | 35 | 035 | L70S035 | L70S035.T | 10 Pcs/ Box | 07945810152 |
| L70S | 40 | 040 | L70S040 | L70S040.T | 10 Pcs/ Box | 07945810167 |
| L70S | 50 | 050 | L70S050 | L70S050.T | 10 Pcs/ Box | 07945810168 |
| L70S | 60 | 060 | L70S060 | L70S060.T | 10 Pcs/ Box | 07945810169 |
| L70S | 70 | 070 | L70S070 | L70S070.V | 5 Pcs/ Box | 07945810170 |
| L70S | 80 | 080 | L70S080 | L70S080.V | 5 Pcs/ Box | 07945810171 |
| L70S | 90 | 090 | L70S090 | L70S090.V | 5 Pcs/ Box | 07945810172 |
| L70S | 100 | 100 | L70S100 | L70S100.V | 5 Pcs/ Box | 07945810173 |
| L70S | 125 | 125 | L70S125 | L70S125.V | 5 Pcs/ Box | 07945810174 |
| L70S | 150 | 150 | L70S150 | L70S150.V | 5 Pcs/ Box | 07945810175 |
| L70S | 175 | 175 | L70S175 | L70S175.V | 5 Pcs/ Box | 07945810176 |
| L70S | 200 | 200 | L70S200 | L70S200.V | 5 Pcs/ Box | 07945810177 |
| L70S | 225 | 225 | L70S225 | L70S225.V | 5 Pcs/ Box | 07945810188 |
| L70S | 250 | 250 | L70S250 | L70S250.V | 5 Pcs/ Box | 07945810178 |
| L70S | 300 | 300 | L70S300 | L70S300.V | 5 Pcs/ Box | 07945810179 |
| L70S | 350 | 350 | L70S350 | L70S350.V | 5 Pcs/ Box | 07945810180 |
| L70S | 400 | 400 | L70S400 | L70S400.V | 5 Pcs/ Box | 07945810181 |
| L70S | 450 | 450 | L70S450 | L70S450.X | 1 Pc/ Box | 07945810182 |
| L70S | 500 | 500 | L70S500 | L70S500.X | 1 Pc/ Box | 07945810183 |
| L70S | 600 | 600 | L70S600 | L70S600.X | 1 Pc/ Box | 07945810184 |
| L70S | 700 | 700 | L70S700 | L70S700.X | 1 Pc/ Box | 07945810185 |
| L70S | 800 | 800 | L70S800 | L70S800.X | 1 Pc/ Box | 07945810186 |

Dimensions

| AMPERE RATING | FIGURE NO. | DIMENSIONS INCHES (mm) | | | | | | | | | |
|---------------|------------|------------------------|-----------------|-----------------|----------------|---------------|--------------|--------------|------------|------------|--|
| | | A | B | C | D | E | F | G | H | J | |
| 10 – 30 | 1 | 2 (50.8) | — | ½ (12.7) | ⅞ (14.3) | — | — | — | — | — | |
| 31 – 60 | 2 | 2 ⅞ (73.0) | 3 ⅞ (87.3) | 3 ¾ (95.2) | 4 ⅜ (111.1) | 1 (25.4) | 43/64 (17.1) | 1 ½ (8.7) | ⅛ (3.2) | — | |
| 61 – 100 | 2 | 2 ⅞ (73.0) | 3 9/16 (90.5) | 3 11/16 (93.7) | 4 ⅜ (111.1) | 1 7/32 (31.0) | 29/32 (22.9) | 5/16 (7.9) | 3/16 (4.8) | — | |
| 101 – 200 | 2 | 2 27/32 (72.2) | 3 17/32 (89.7) | 4 5/32 (105.6) | 5 3/32 (129.4) | 1 ½ (38.1) | 1 (25.4) | 13/32 (10.3) | ¼ (6.4) | — | |
| 201 – 400 | 2 | 2 27/32 (72.2) | 3 17/32 (89.7) | 4 5/32 (105.6) | 5 3/32 (129.4) | 2 (50.8) | 1 ½ (38.1) | 13/32 (10.3) | ¼ (6.4) | — | |
| 401 – 600 | 2 | 2 27/32 (72.2) | 4 29/32 (124.6) | 5 ¼ (133.4) | 7 3/32 (180.2) | 2 ½ (63.5) | 2 (50.8) | 17/32 (13.5) | 3/8 (9.5) | — | |
| 601 – 800 | 3 | 3 5/16 (84.1) | 5 5/16 (134.9) | 6 13/16 (173.0) | — | 2 ⅞ (73.0) | 2 (50.8) | 5/8 (15.9) | 3/8 (9.5) | 5/16 (7.9) | |

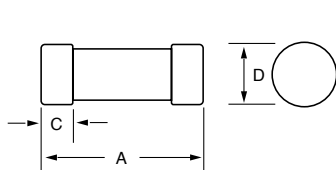


Figure 1

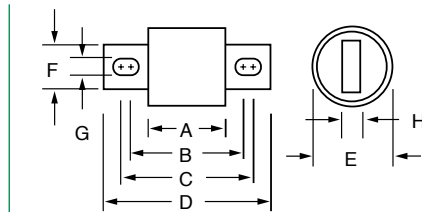


Figure 2

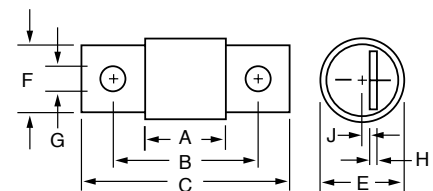
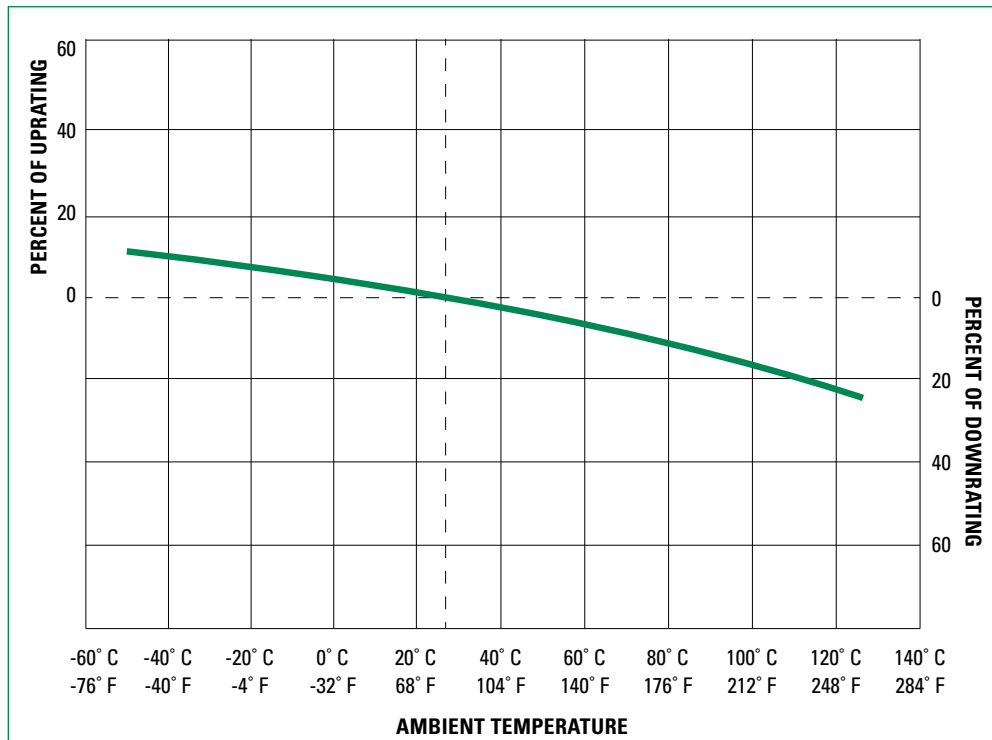


Figure 3

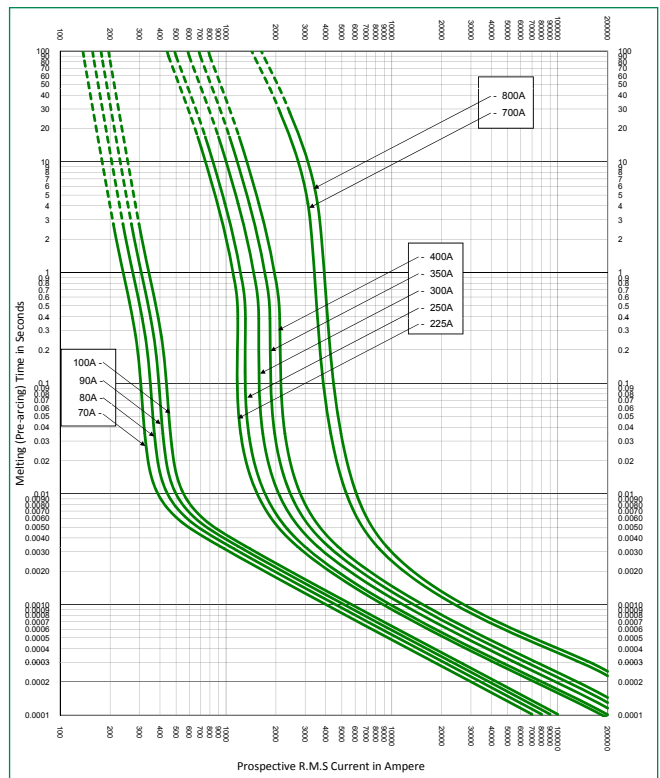
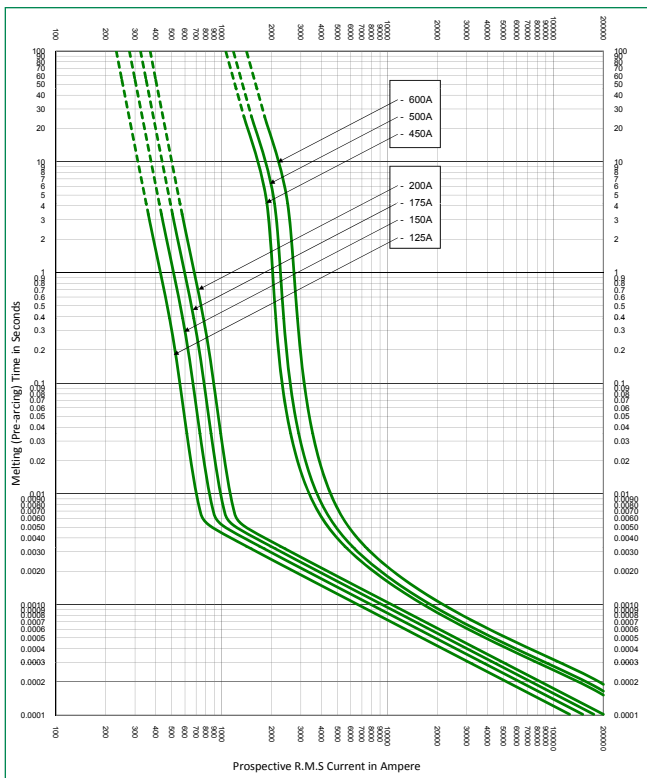
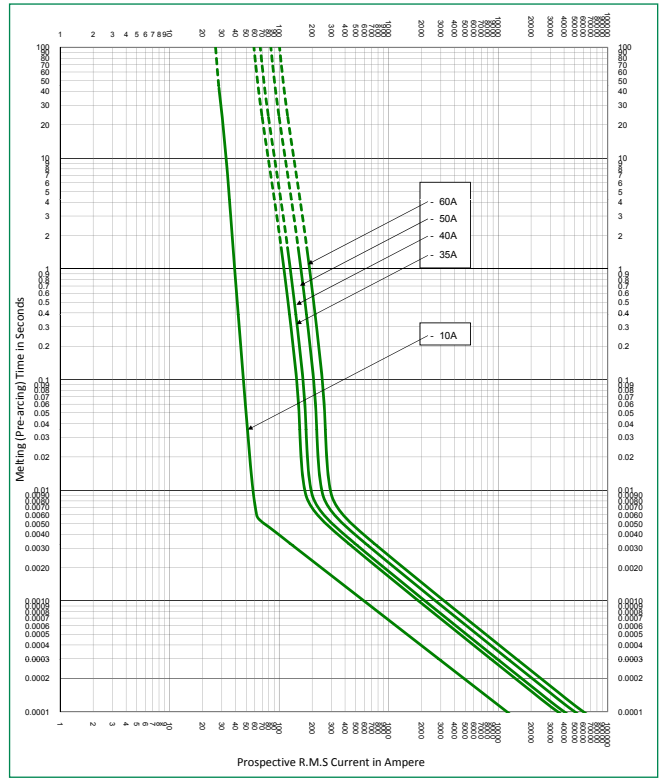
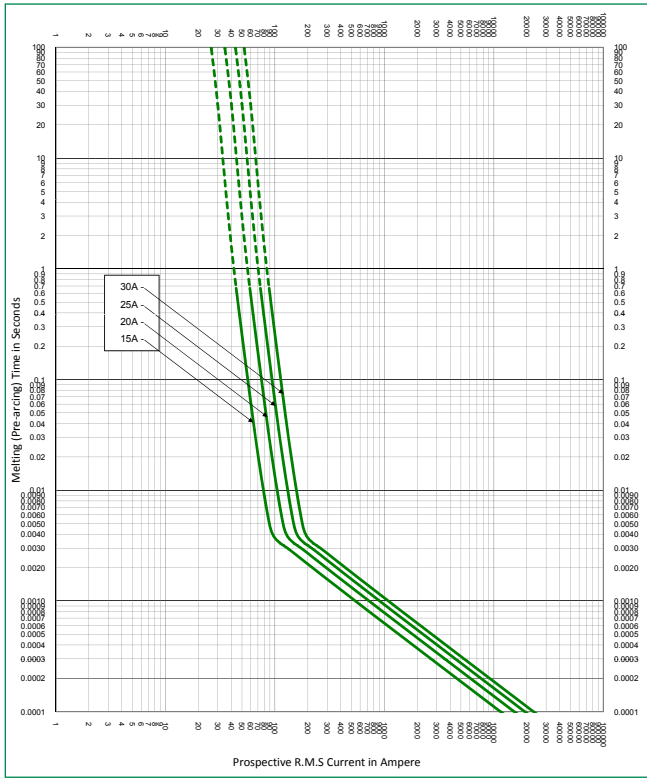
Bus Bar Mounting Recommended Torque Values

| RECOMMENDED TORQUE VALUES FOR BUS BAR MOUNTING FUSE | | |
|---|-------------------------------|---------------------------------|
| CATALOG NUMBER | FUSE TORQUE—METRIC (STANDARD) | HARDWARE SIZE—METRIC (STANDARD) |
| L70S035 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S040 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S050 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S060 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S070 | 8 N m (70.81 in-lb) | M6 (¼") |
| L70S080 | 8 N m (70.81 in-lb) | M6 (¼") |
| L70S090 | 8 N m (70.81 in-lb) | M6 (¼") |
| L70S100 | 8 N m (70.81 in-lb) | M6 (¼") |
| L70S125 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S150 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S175 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S200 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S225 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S250 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S300 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S350 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S400 | 15 N m (132.76 in-lb) | M8 (5/16") |
| L70S450 | 54 N m (477.94 in-lb) | M12 (½") |
| L70S500 | 54 N m (477.94 in-lb) | M12 (½") |
| L70S600 | 54 N m (477.94 in-lb) | M12 (½") |
| L70S700 | 75 N m (663.81 in-lb) | M14 (9/16") |
| L70S800 | 75 N m (663.81 in-lb) | M14 (9/16") |

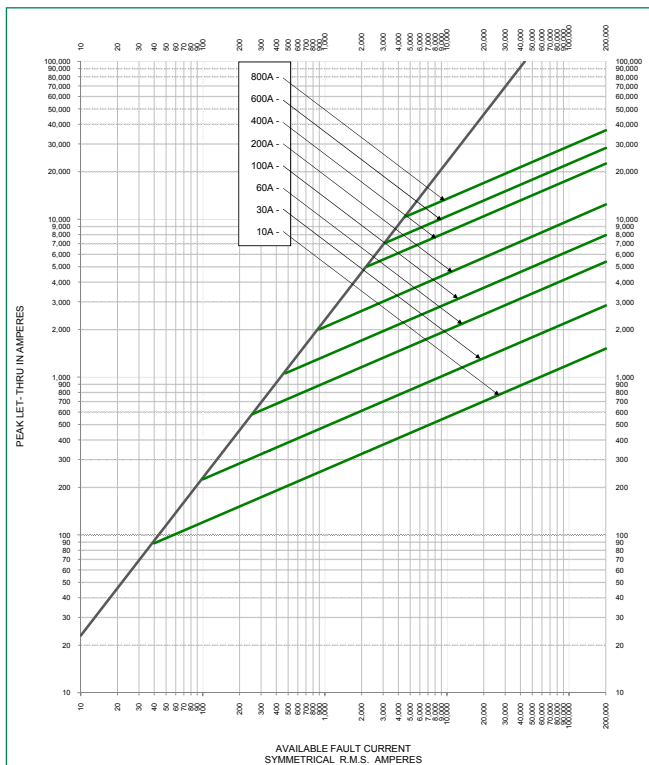
Temperature De-rating Curve (temperature of air immediately surrounding fuse)



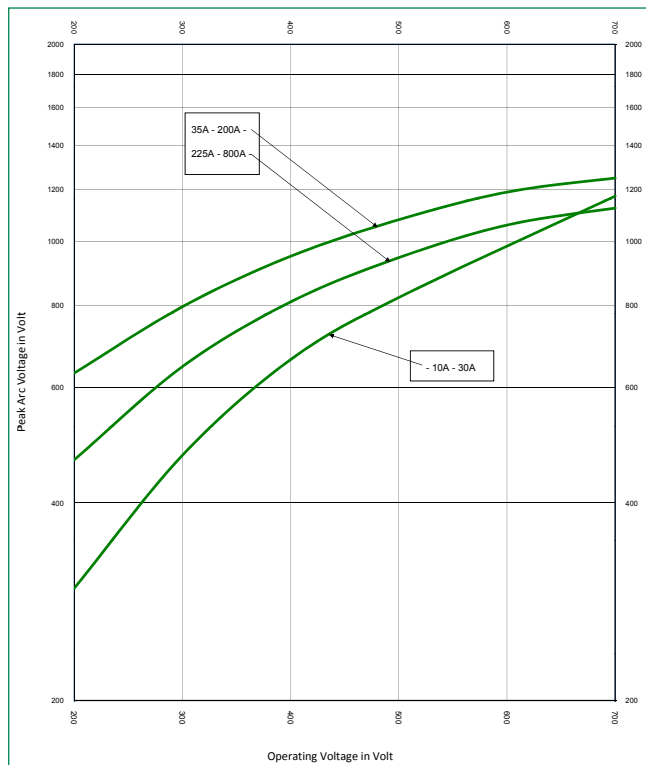
Time Current Curves



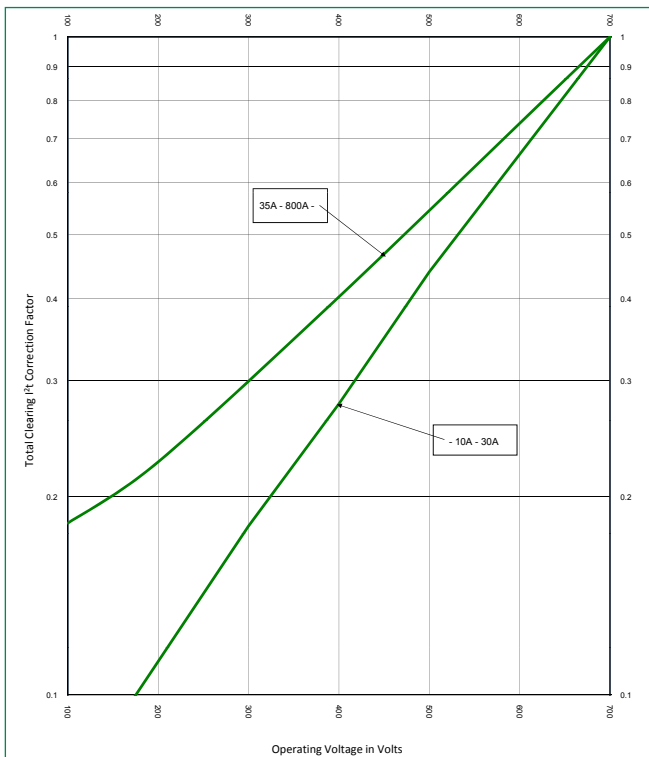
Peak Let-Thru Curve



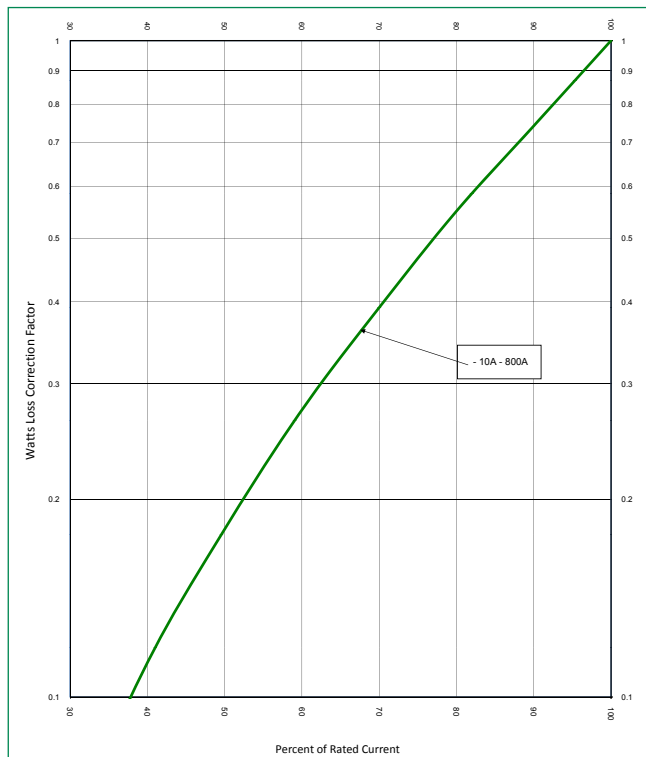
Peak Arc Voltage Curve



Total Clearing I²t Correction Factor Curve



Watts Loss Correction Factor Curve



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