

# 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

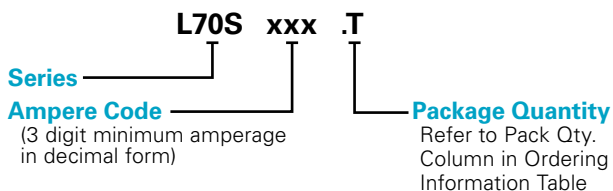
### Applications

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

### Specifications

|                              |                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Voltage Rating</b>        | 700 V ac<br>650 V dc                                                                                                            |
| <b>Amperage Rating</b>       | 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80,<br>90, 100, 125, 150, 175, 200, 225, 250, 300,<br>350, 400, 450, 500, 600, 700, 800 |
| <b>Interrupting Rating</b>   | Ac: 200 kAIC<br>Dc: 20 kAIC                                                                                                     |
| <b>Material</b>              | Body: melamine<br>Terminals: copper (silver plated)                                                                             |
| <b>Mounting Type</b>         | Cylindrical (10–0 A)<br>Bolted tags (35–800 A)                                                                                  |
| <b>Operating Temperature</b> | -55 °C to +125 °C                                                                                                               |
| <b>Storage Temperature</b>   | Up to 35 °C with relative humidity < 65 %                                                                                       |
| <b>Approvals</b>             | UL Recognized (File: E71611)<br>CSA Recognized (File: LR29862)                                                                  |
| <b>Environmental</b>         | RoHS Compliant                                                                                                                  |
| <b>Country of Origin</b>     | 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](https://www.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 <sup>2</sup> T (A <sup>2</sup> s) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> s) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> s) | TOTAL CLEARING I <sup>2</sup> T (A <sup>2</sup> 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                               |

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### 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 Pcs/ Box    | 07945810182 |
| L70S   | 500             | 500      | L70S500        | L70S500.X       | 1 Pcs/ Box    | 07945810183 |
| L70S   | 600             | 600      | L70S600        | L70S600.X       | 1 Pcs/ Box    | 07945810184 |
| L70S   | 700             | 700      | L70S700        | L70S700.X       | 1 Pcs/ Box    | 07945810185 |
| L70S   | 800             | 800      | L70S800        | L70S800.X       | 1 Pcs/ 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          | 2⅞ (73.0)              | 3⅞ (87.3)       | 3¾ (95.2)       | 4⅜ (111.1)     | 1 (25.4)      | 43/64 (17.1) | 11/32 (8.7)  | ⅛ (3.2)    | —          |
| 61 – 100      | 2          | 2⅞ (73.0)              | 3⅞ (90.5)       | 3⅞ (93.7)       | 4⅜ (111.1)     | 1 1/32 (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 7/8 (73.0)  | 2 (50.8)     | 5/8 (15.9)   | 3/8 (9.5)  | 5/16 (7.9) |

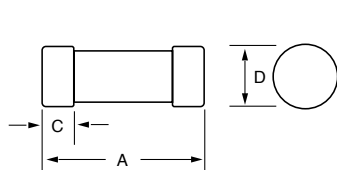


Figure 1

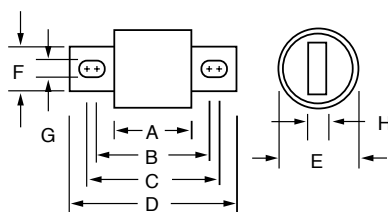


Figure 2

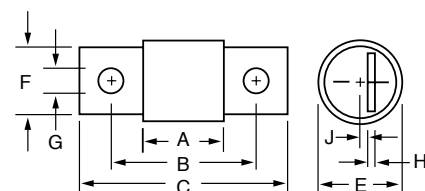


Figure 3

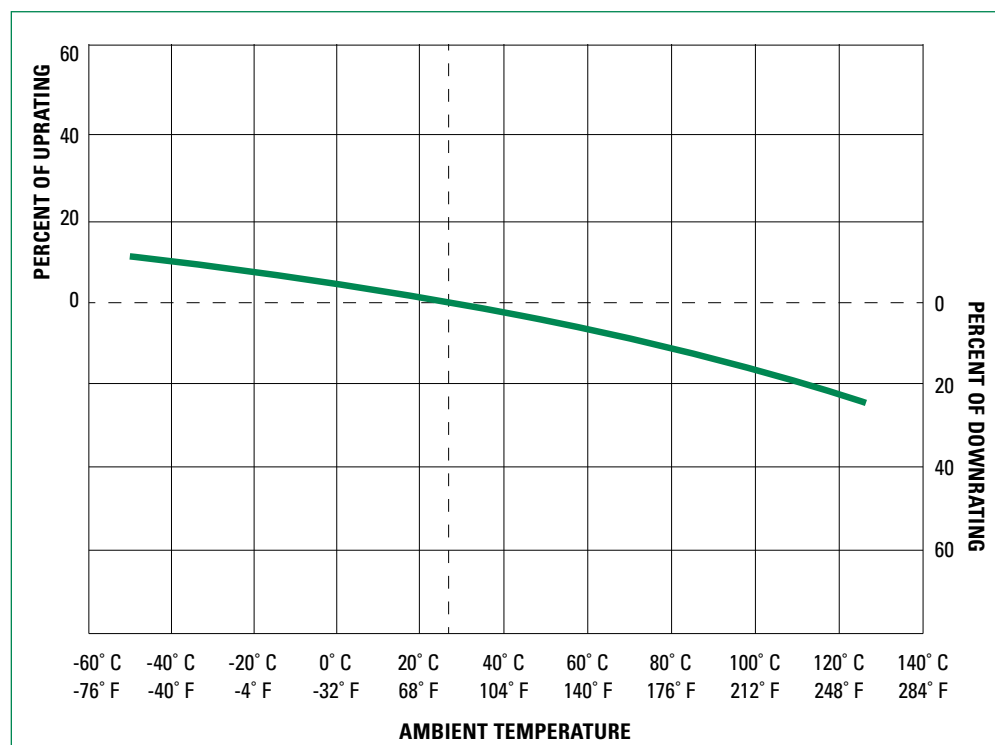
# POWR-GARD® Fuse

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### 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")                     |

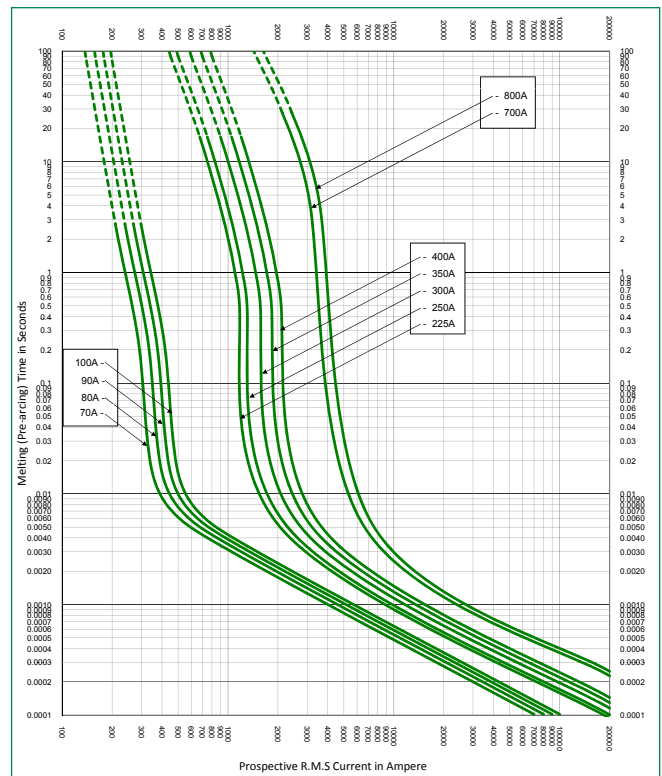
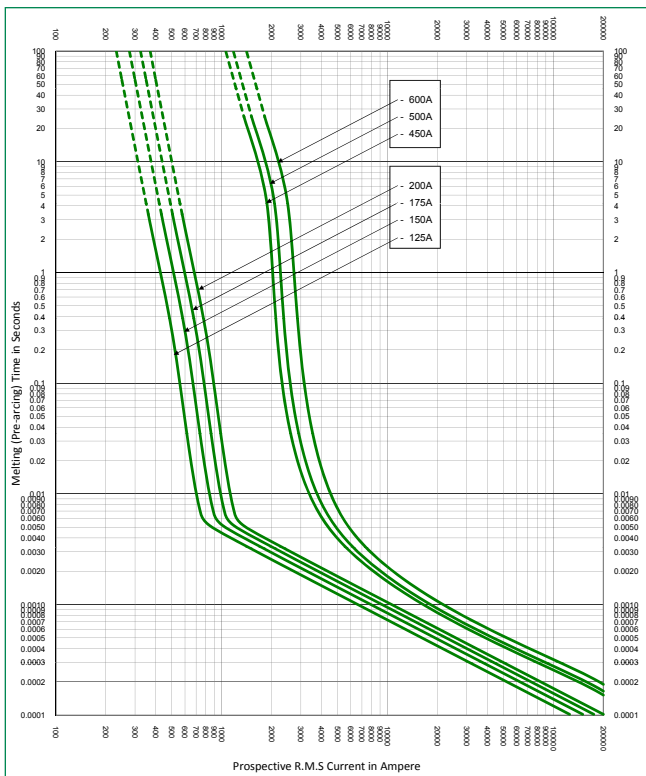
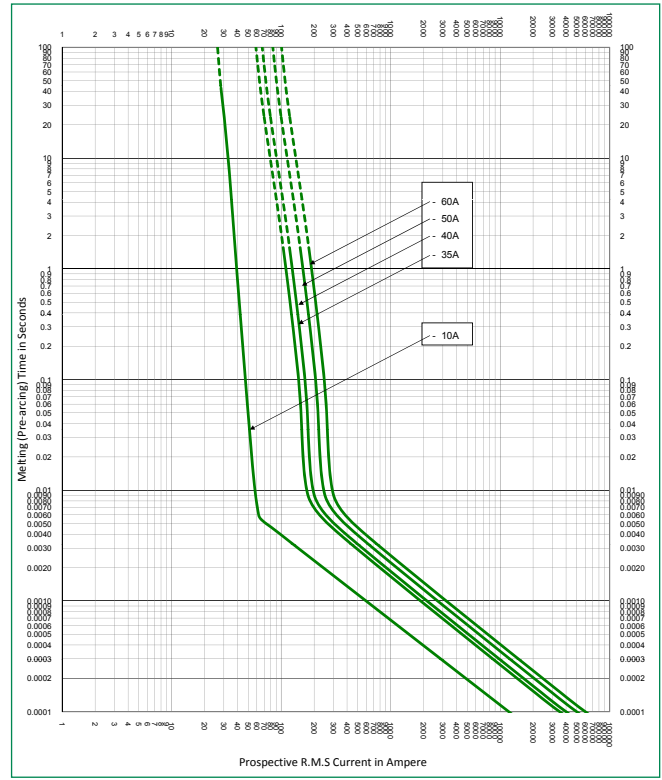
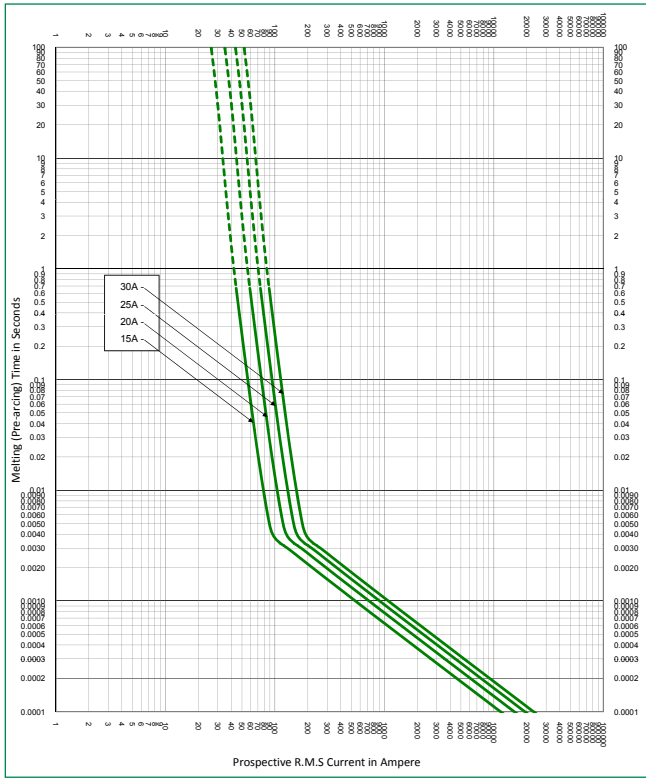
### Temperature De-rating Curve (temperature of air immediately surrounding fuse)



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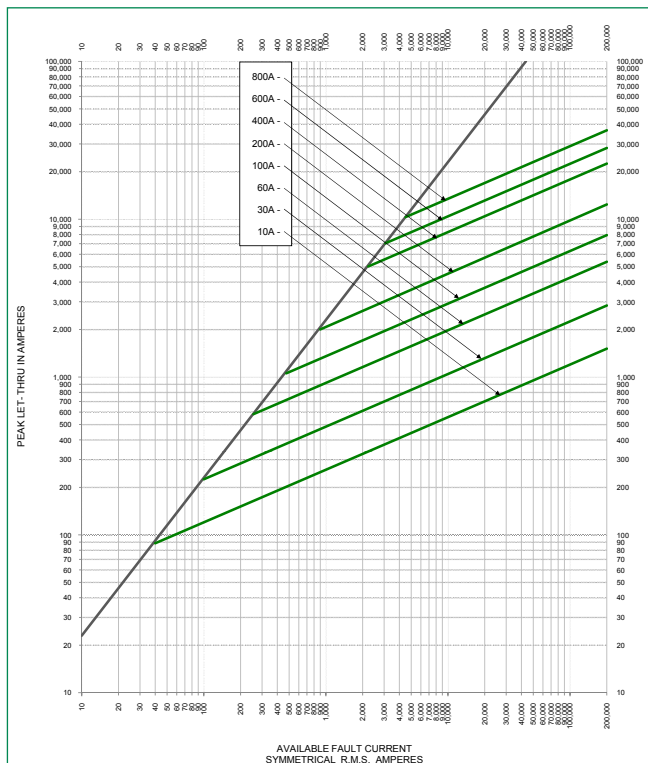
### Time Current Curves



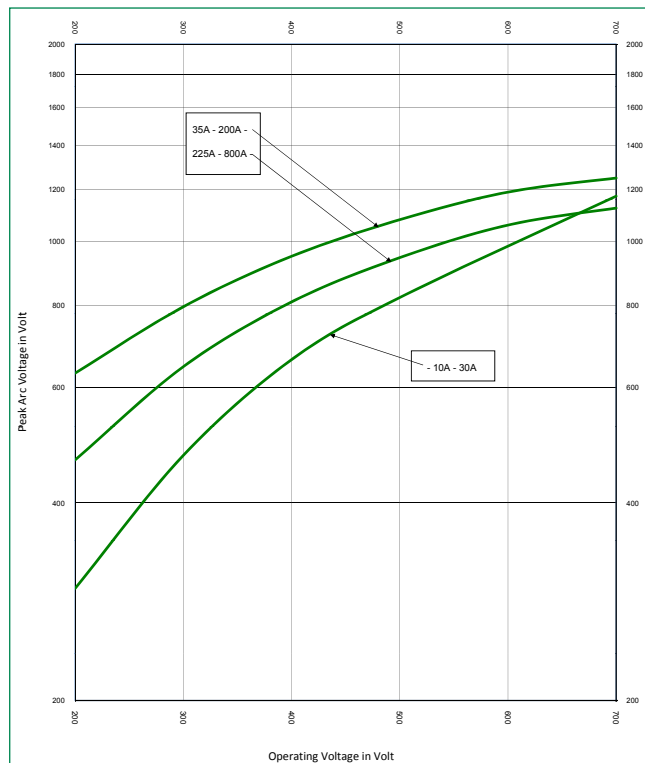
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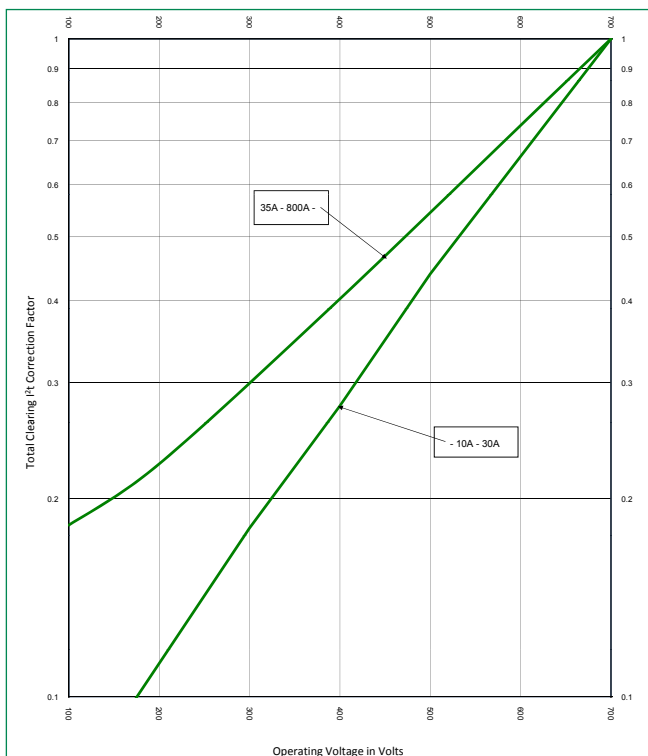
### Peak Let-Thru Curve



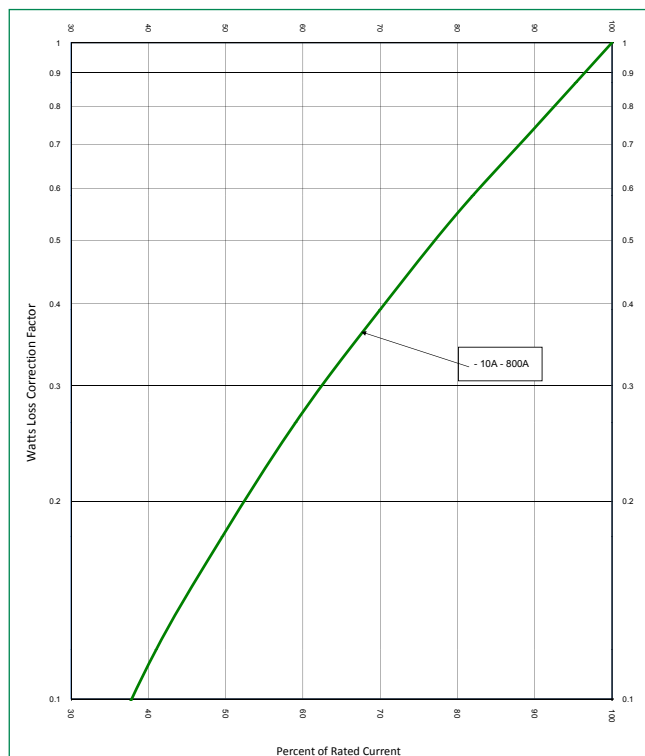
### Peak Arc Voltage Curve



### Total Clearing I²t Correction Factor Curve



### Watts Loss Correction Factor Curve



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