

# POWR-GARD® Fuse

## CLASS T – JLLN / JLLS SERIES

300/600 V ac • Fast-Acting • 1–1200 A



### Description

JLLN / JLLS series fuses are less than 1/3 the size of comparable Class R fuses and are typically used for short circuit protection of drives and surge sensitive components. When rated in accordance with the NEC\*, JLLN / JLLS fuses provide fast-acting overload and short circuit protection for non-inductive circuits and equipment.

### Features/Benefits

- Extremely current-limiting
- Compact design
- 200 kA interrupting rating
- JLLN 35–60 amperes available with PCB mounts

### Applications

- Variable speed drive protection
- Power conversion devices (inverters, rectifiers, UPS)
- Power supplies and power distribution units
- Compact mains switches

### Recommended Fuse Holders

LFT30 series  
LFT60 series  
LSCR series for 70–800 amperes

### Web Resources

Download TC curves, CAD drawings and other technical information: [Littelfuse.com/jlln](http://Littelfuse.com/jlln)  
[Littelfuse.com/jlls](http://Littelfuse.com/jlls)

\*NEC is a trademark of its respective owner.

### Specifications

#### JLLN

##### Voltage Ratings

Ac: 300 V  
Dc: 160 V (1–60 A)  
125 V (70–1200 A)

##### Ampere Range

1–1200 A

##### Interrupting Ratings

Ac: 200 kA rms symmetrical  
Dc: 50 kA (1–30 A)  
20 kA (35–1200 A)

##### Approvals

Ac: UL Standard 248-15, Class T  
UL Listed (File: E81895): 1–1200 A  
CSA Certified (File: LR29862): 1–600 A  
Dc: UL Listed (File: E81895): 1–1200 A  
1–30 A: melamine body, bronze caps  
35–1200 A: melamine body, copper caps  
RoHS Compliant  
Mexico

##### Material

##### Environmental Country of Origin

#### JLLS

##### Voltage Ratings

Ac: 600 V  
Dc: 300 V

##### Ampere Range

1–1200 A

##### Interrupting Ratings

Ac: 200 kA rms symmetrical  
Dc: 20 kA

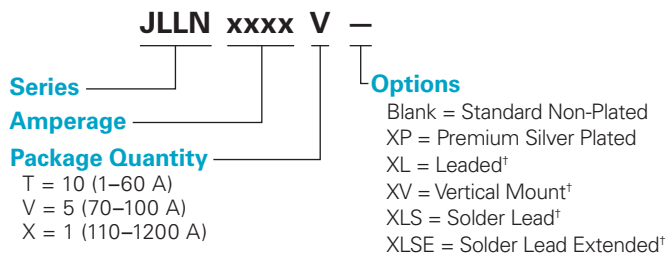
##### Approvals

Ac: UL Standard 248-15, Class T  
UL Listed (File: E81895): 1–1200 A  
CSA Certified (File: LR29862): 1–600 A  
Dc: Littelfuse self-certified  
1–30 A: melamine body, copper caps  
35–60 A: melamine body, bronze caps  
70–1200 A: melamine body, copper caps  
RoHS Compliant  
Mexico

##### Material

##### Environmental Country of Origin

### Part Numbering System



| SERIES | AMP | PACK SIZE | PLATING SUFFIX | MOUNT SUFFIX | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|-----------|----------------|--------------|----------------|-----------------|
| JLLS   | 6   | T         | –              | –            | JLLS006        | JLLS006.T       |
| JLLN   | 35  | T         | –              | XL†          | JLLN035L       | JLLN035.TXL     |
| JLLN   | 40  | T         | –              | XLSE†        | JLLN040LSE     | JLLN040.TXLSE   |
| JLLN   | 100 | V         | XP             | –            | JLLN100P       | JLLN100.VXP     |

†Option is available for JLLN 35–60 amperes only. Premium plating is standard

### Ordering Information

| AMPERE RATINGS |    |     |     |      |      |
|----------------|----|-----|-----|------|------|
| 1              | 25 | 70  | 175 | 450  | 1100 |
| 2              | 30 | 80  | 200 | 500  | 1200 |
| 3              | 35 | 90  | 225 | 600  |      |
| 6              | 40 | 100 | 250 | 700  |      |
| 10             | 45 | 110 | 300 | 800  |      |
| 15             | 50 | 125 | 350 | 900* |      |
| 20             | 60 | 150 | 400 | 1000 |      |

\*JLLS only

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### Dimensions Inches (mm)

| AMPERES  | REFER TO FIG. NO. | SERIES | DIMENSIONS INCHES (mm) |              |              |              |              |              |             |
|----------|-------------------|--------|------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
|          |                   |        | A                      | B            | C            | D            | E            | F            | G           |
| 1–30     | 1                 | JLLN   | .875 (22.2)            | —            | .281 (7.1)   | .406 (10.3)  | —            | —            | —           |
|          |                   | JLLS   | 1.500 (38.1)           | —            | .281 (7.1)   | .562 (14.3)  | —            | —            | —           |
| 35–60    | 1                 | JLLN   | .875 (22.2)            | —            | .281 (7.1)   | .562 (14.3)  | —            | —            | —           |
|          | 2                 | JLLS   | 1.562 (39.7)           | .812 (20.6)  | .406 (10.3)  | .994 (25.2)  | .062 (1.6)   | 1.094 (27.8) | —           |
| 70–100   | 3                 | JLLN   | 2.156 (54.8)           | 1.562 (39.7) | .750 (19.1)  | .812 (20.6)  | .830 (21.1)  | .281 (7.1)   | .125 (3.2)  |
|          |                   | JLLS   | 2.953 (75.0)           | 2.352 (59.7) | .750 (19.1)  | .828 (21.0)  | 1.625 (41.3) | .281 (7.1)   | .125 (3.2)  |
| 110–200  | 3                 | JLLN   | 2.437 (61.9)           | 1.687 (42.9) | .875 (22.2)  | 1.062 (27.0) | .830 (21.1)  | .343 (8.7)   | .187 (4.8)  |
|          |                   | JLLS   | 3.250 (82.6)           | 2.507 (63.7) | .875 (22.2)  | 1.078 (27.4) | 1.656 (42.1) | .343 (8.7)   | .187 (4.8)  |
| 225–400  | 3                 | JLLN   | 2.750 (69.9)           | 1.843 (46.8) | 1.000 (25.4) | 1.312 (33.3) | .828 (21.0)  | .406 (10.3)  | .250 (6.4)  |
|          |                   | JLLS   | 3.625 (92.1)           | 2.718 (69.1) | 1.000 (25.4) | 1.593 (40.5) | 1.712 (43.5) | .406 (10.3)  | .250 (6.4)  |
| 450–600  | 3                 | JLLN   | 3.062 (77.8)           | 2.031 (51.6) | 1.250 (31.8) | 1.593 (40.5) | .875 (22.2)  | .484 (12.3)  | .312 (7.9)  |
|          |                   | JLLS   | 3.984 (101.2)          | 2.953 (75.0) | 1.250 (31.8) | 2.062 (52.4) | 1.765 (44.8) | .484 (12.3)  | .312 (7.9)  |
| 700–800  | 3                 | JLLN   | 3.375 (85.7)           | 2.218 (56.4) | 1.750 (44.5) | 2.062 (52.4) | .875 (22.2)  | .546 (13.9)  | .375 (9.5)  |
|          |                   | JLLS   | 4.328 (109.9)          | 3.171 (80.6) | 1.750 (44.5) | 2.500 (63.5) | 1.860 (47.2) | .546 (13.9)  | .375 (9.5)  |
| 900–1200 | 3                 | JLLN   | 4.000 (101.6)          | 2.531 (64.3) | 2.000 (50.8) | 2.500 (63.5) | 1.033 (26.2) | .609 (15.5)  | .437 (11.1) |
|          |                   | JLLS   | 5.271 (133.9)          | 3.801 (96.5) | 2.000 (50.8) | 2.625 (66.7) | 2.303 (58.5) | .609 (15.5)  | .437 (11.1) |

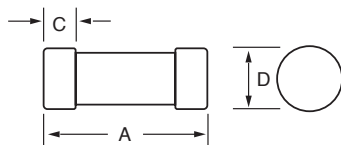


Fig. 1

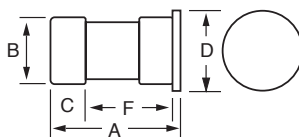


Fig. 2

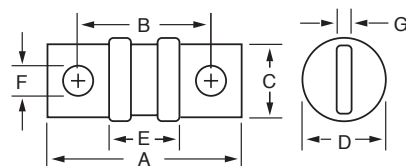


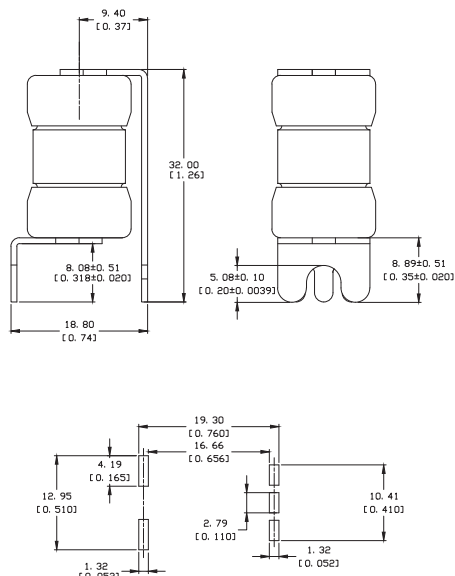
Fig. 3

# POWR-GARD® Fuse

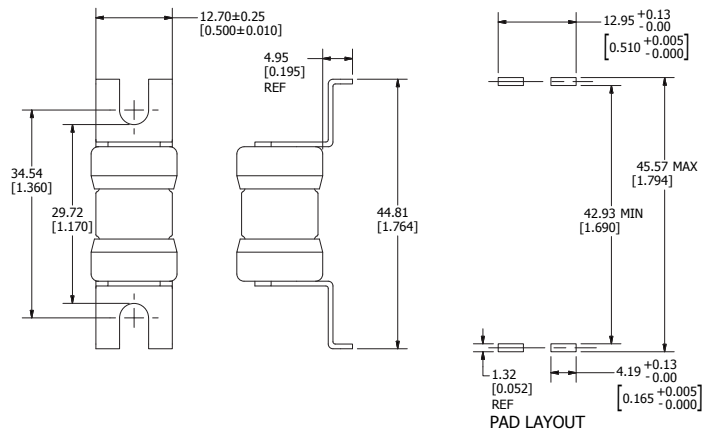
## CLASS T – JLLN / JLLS SERIES

### PCB Mounting Options (JLLN 35–60 A Only)

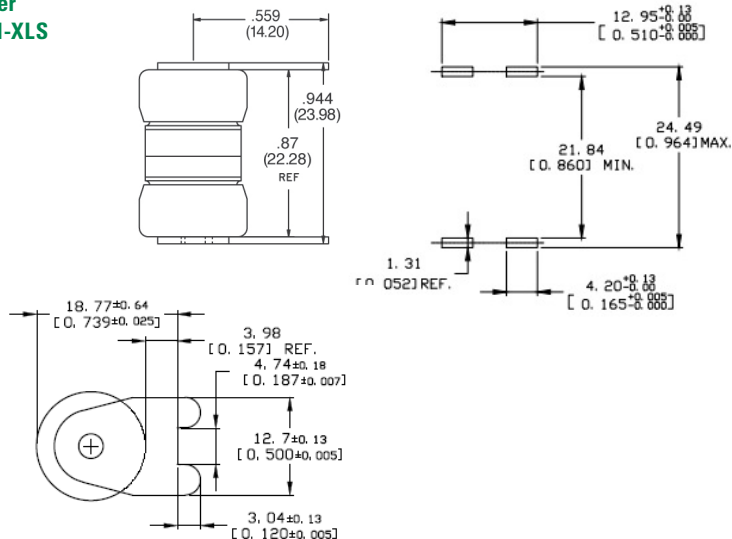
#### Vertical Mount JLLN-XV



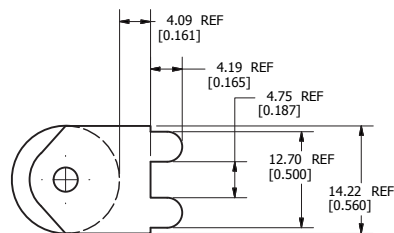
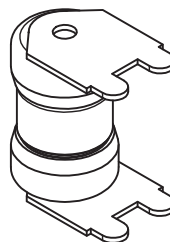
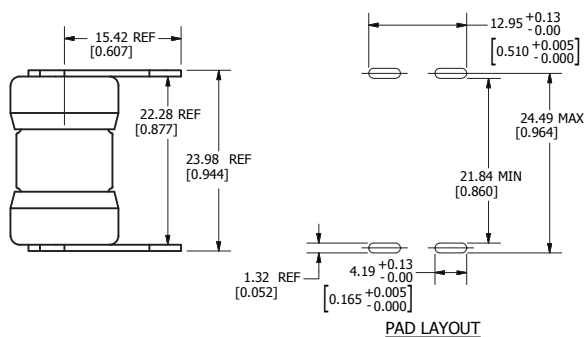
#### Leaded JLLN-XL



#### Solder JLLN-XLS



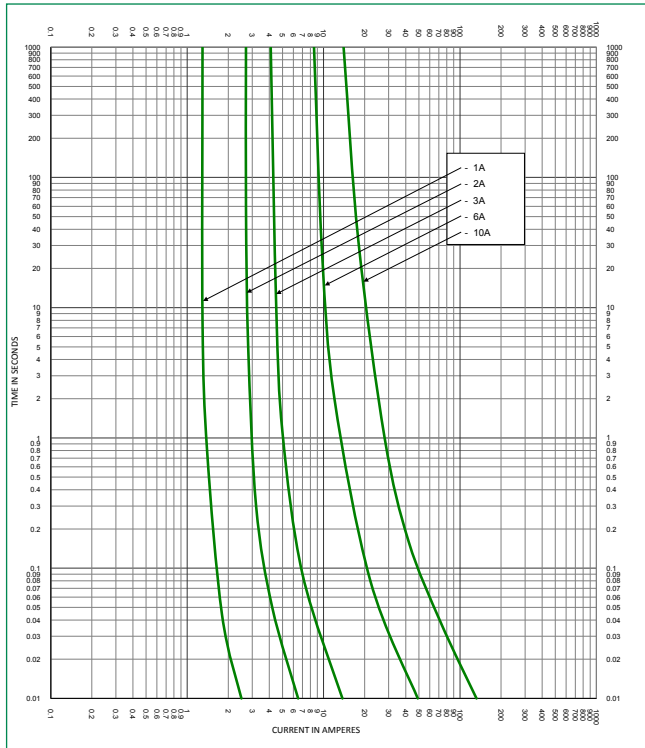
### LSE Terminal Option



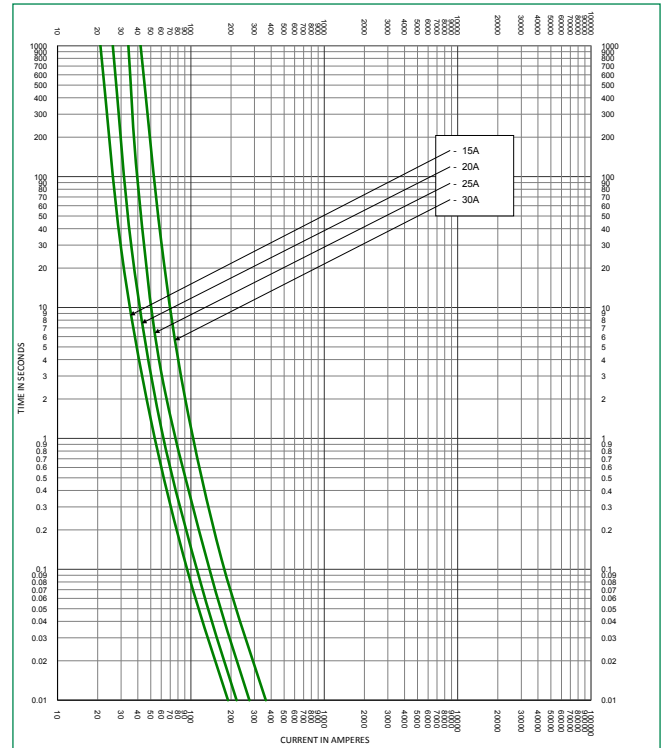
# POWR-GARD® Fuse

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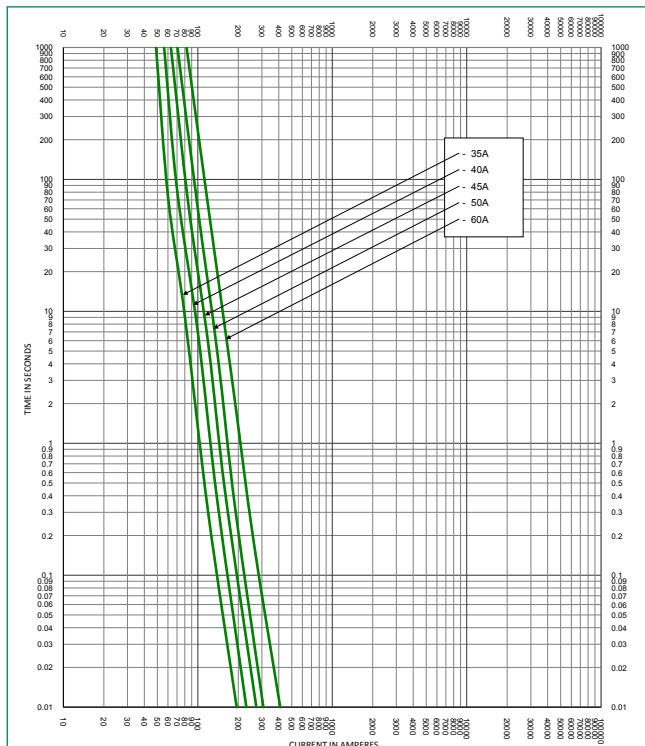
### Time Current Curve JLLN (1–10 A)



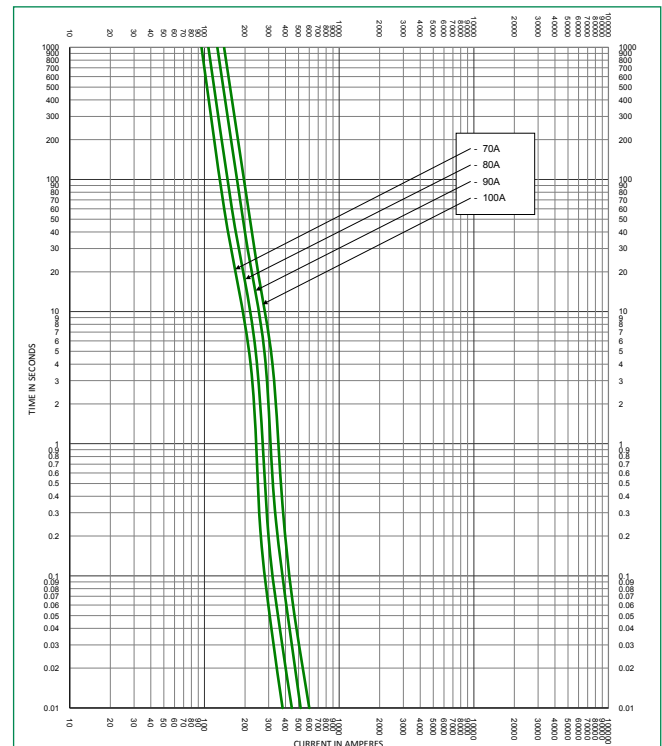
### Time Current Curve JLLN (15–30 A)



### Time Current Curve JLLN (35–60 A)



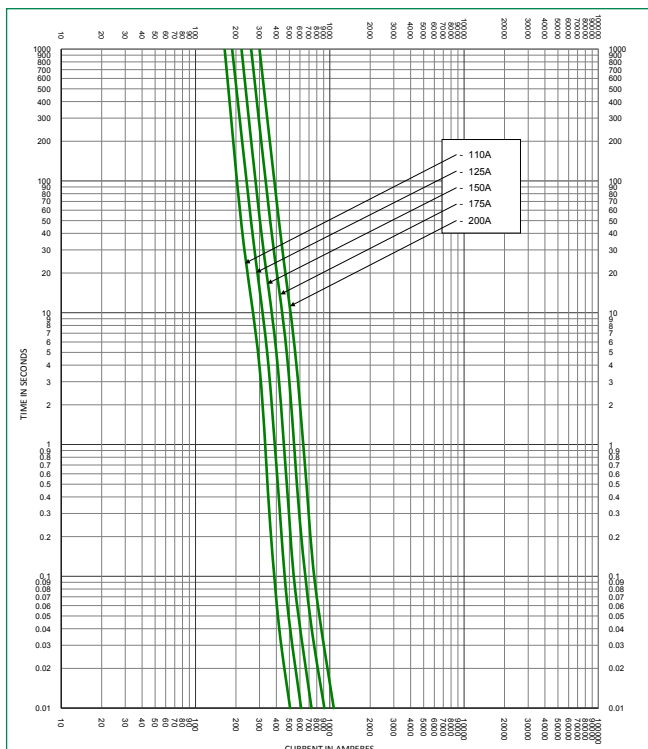
### Time Current Curve JLLN (70–100 A)



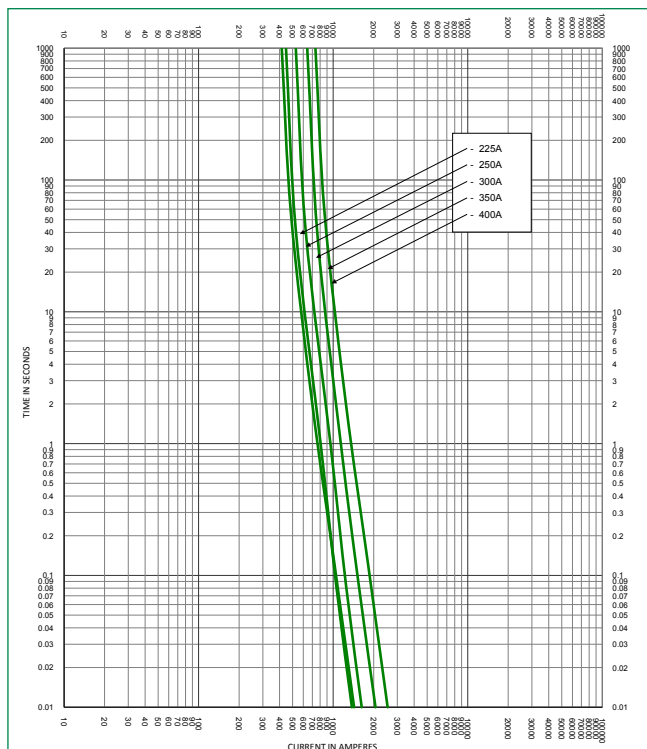
# POWR-GARD® Fuse

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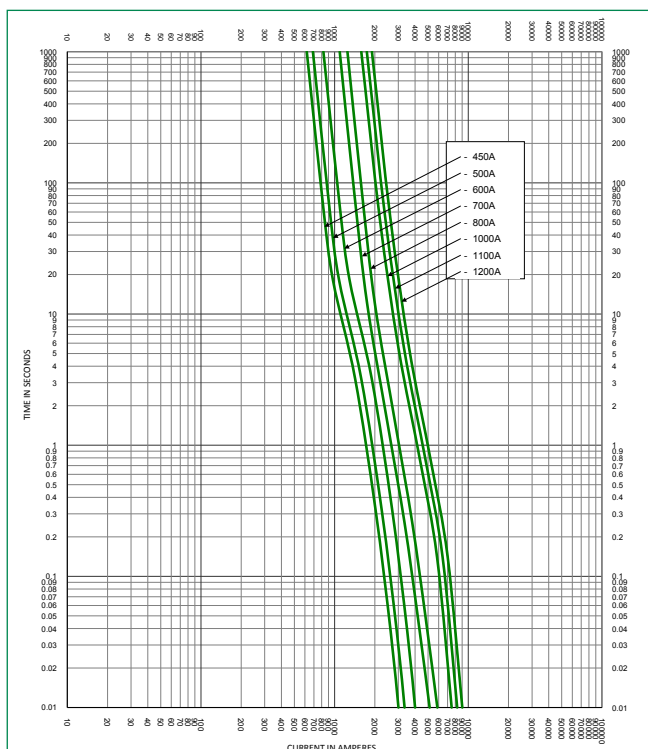
### Time Current Curve JLLN (110–200 A)



### Time Current Curve JLLN (225–400 A)



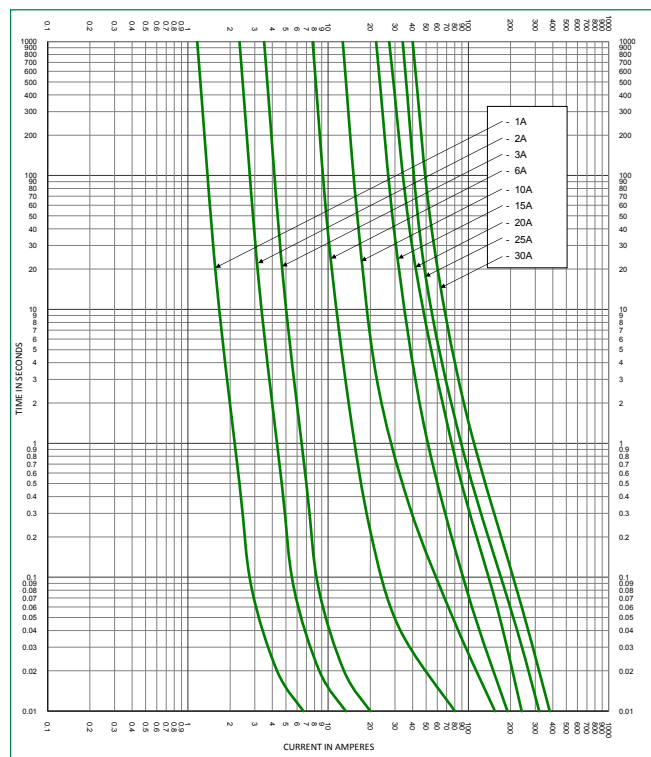
### Time Current Curve JLLN (450–1200 A)



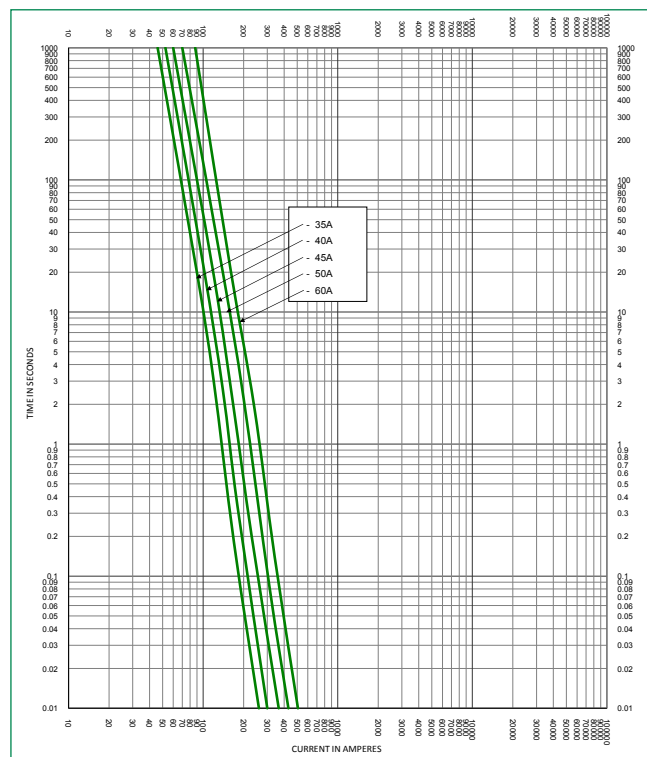
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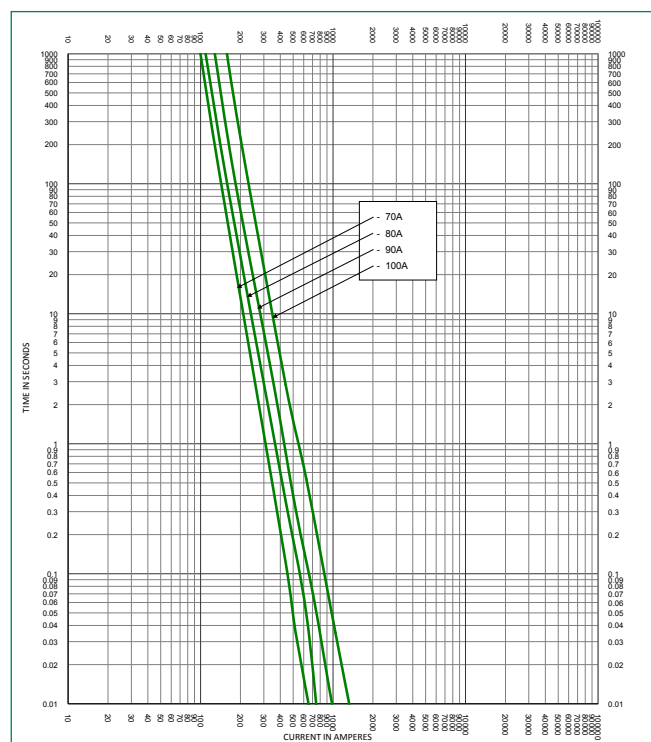
### Time Current Curve JLLS (1–30 A)



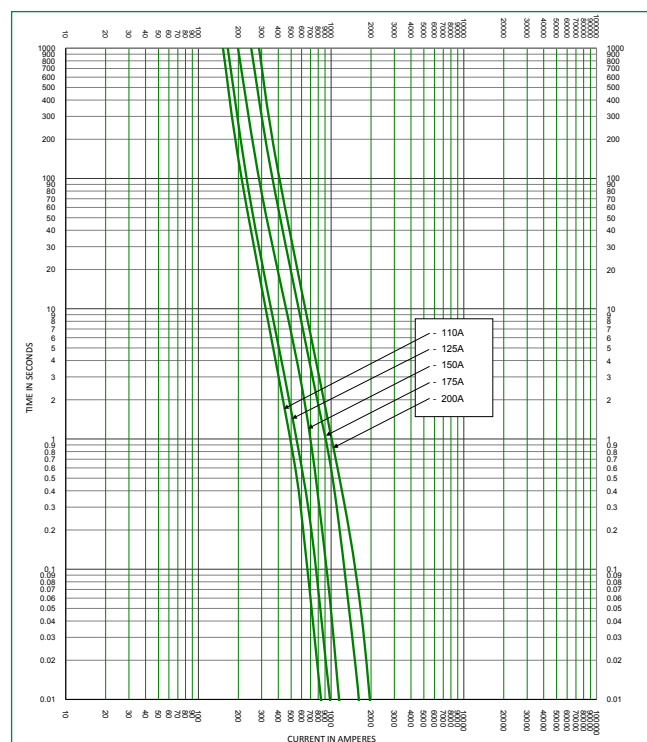
### Time Current Curve JLLS (35–60 A)



### Time Current Curve JLLS (70–100 A)



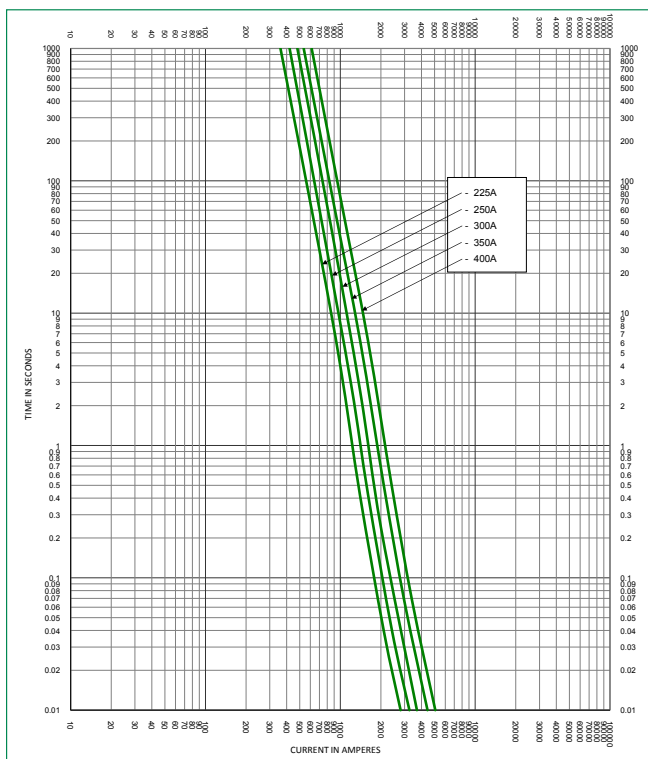
### Time Current Curve JLLS (110–200 A)



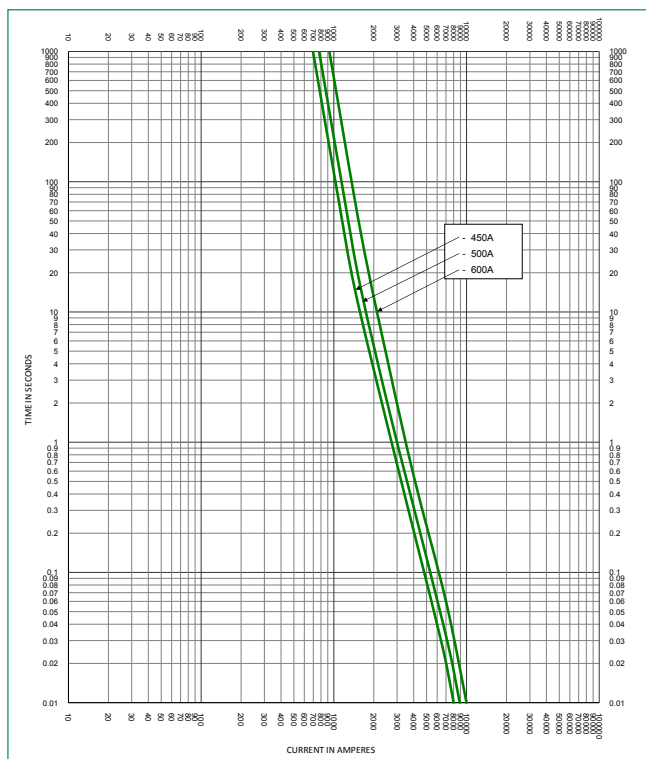
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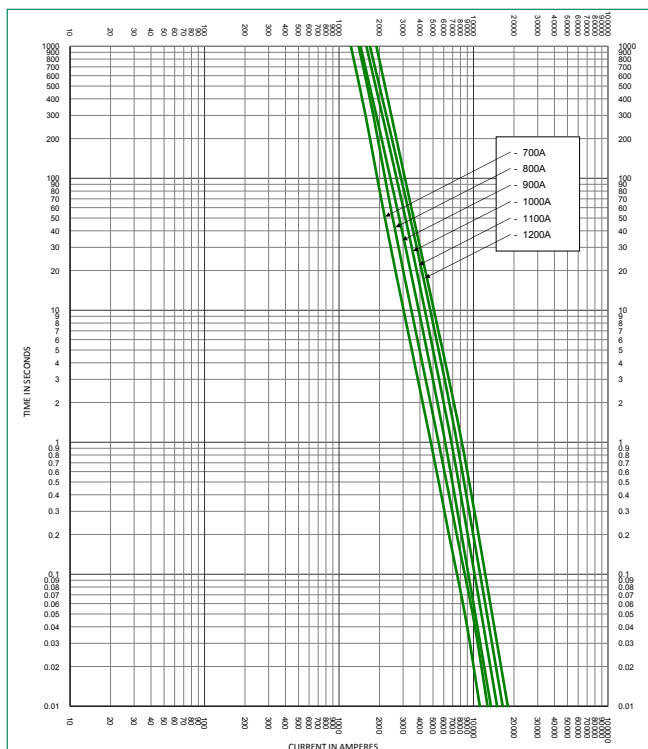
### Time Current Curve JLLS (225–400A)



### Time Current Curve JLLS (450–600A)



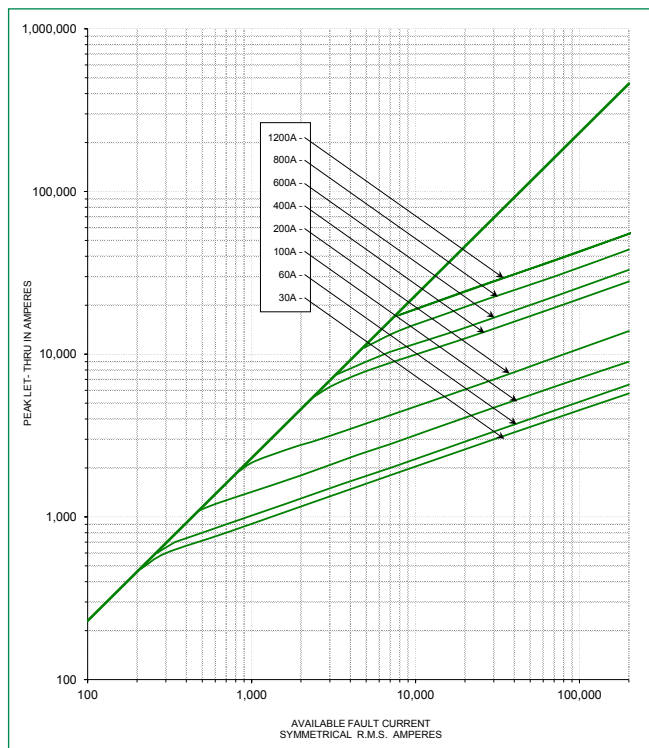
### Time Current Curve JLLS (700–1200A)



# POWR-GARD® Fuse

## CLASS T – JLLN / JLLS SERIES

### Peak Let-Thru Curve and Current-Limiting Effects of JLLN (300 V) Fuses



| SHORT CIRCUIT<br>CURRENT* | APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS |       |       |       |        |        |        |        |
|---------------------------|-----------------------------------------------------------|-------|-------|-------|--------|--------|--------|--------|
|                           | 30 A                                                      | 60 A  | 100 A | 200 A | 400 A  | 600 A  | 800 A  | 1200 A |
| 5,000                     | 700                                                       | 775   | 1,100 | 1,650 | 3,500  | 4,000  | 5,000  | 5,000  |
| 10,000                    | 900                                                       | 1,000 | 1,400 | 2,100 | 4,400  | 5,100  | 6,750  | 8,250  |
| 15,000                    | 1,000                                                     | 1,100 | 1,600 | 2,400 | 5,000  | 5,900  | 7,750  | 10,000 |
| 20,000                    | 1,100                                                     | 1,250 | 1,800 | 2,700 | 5,500  | 6,500  | 8,750  | 11,000 |
| 25,000                    | 1,230                                                     | 1,300 | 1,950 | 2,900 | 6,000  | 7,000  | 9,500  | 12,000 |
| 30,000                    | 1,300                                                     | 1,475 | 2,050 | 3,100 | 6,400  | 7,500  | 10,000 | 12,500 |
| 35,000                    | 1,330                                                     | 1,575 | 2,150 | 3,300 | 6,750  | 7,750  | 10,500 | 13,500 |
| 40,000                    | 1,430                                                     | 1,600 | 2,300 | 3,500 | 7,000  | 8,000  | 11,000 | 14,000 |
| 50,000                    | 1,500                                                     | 1,750 | 2,400 | 3,700 | 7,500  | 8,750  | 12,000 | 15,000 |
| 60,000                    | 1,700                                                     | 1,900 | 2,700 | 4,000 | 8,000  | 9,500  | 12,500 | 16,000 |
| 80,000                    | 1,850                                                     | 2,100 | 2,800 | 4,400 | 9,000  | 10,500 | 14,000 | 17,500 |
| 100,000                   | 2,000                                                     | 2,250 | 3,150 | 4,800 | 9,750  | 11,500 | 15,000 | 18,500 |
| 150,000                   | 2,300                                                     | 2,600 | 3,600 | 5,500 | 11,000 | 13,000 | 17,500 | 22,000 |
| 200,000                   | 2,600                                                     | 2,800 | 3,900 | 6,000 | 12,000 | 14,500 | 19,500 | 24,000 |

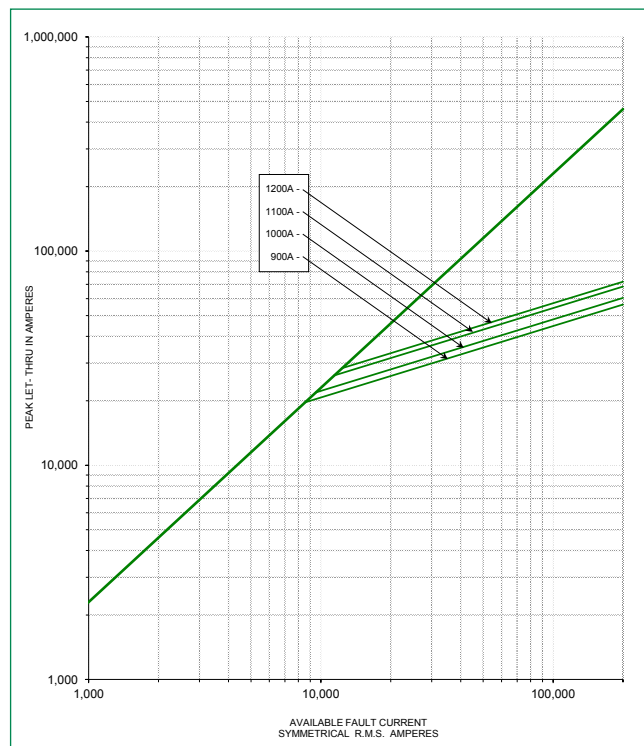
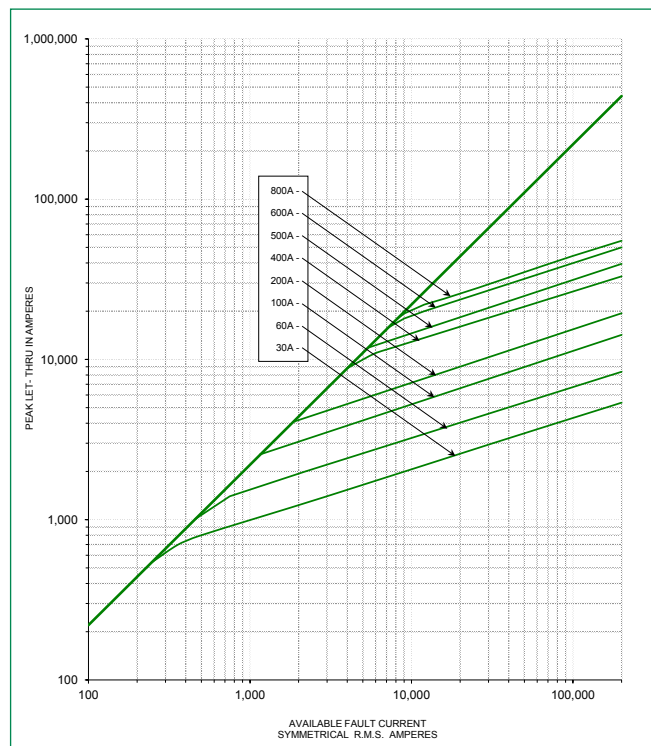
\*Prospective RMS Symmetrical Amperes Short-Circuit Current

Note: Data Derived from Peak Let-Thru Curves

# POWR-GARD® Fuse

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### Peak Let-Thru Curve and Current-Limiting Effects of JLLS (600 V) Fuses



| SHORT CIRCUIT<br>CURRENT* | APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS |       |       |       |        |        |        |        |
|---------------------------|-----------------------------------------------------------|-------|-------|-------|--------|--------|--------|--------|
|                           | 30 A                                                      | 60 A  | 100 A | 200 A | 400 A  | 600 A  | 800 A  | 1200 A |
| 5,000                     | 750                                                       | 1,225 | 1,810 | 2,500 | 4,600  | 5,000  | 5,000  | 5,000  |
| 10,000                    | 945                                                       | 1,525 | 2,300 | 3,150 | 6,000  | 8,500  | 9,400  | 10,000 |
| 15,000                    | 1,050                                                     | 1,700 | 2,610 | 3,600 | 6,600  | 9,750  | 10,500 | 13,000 |
| 20,000                    | 1,150                                                     | 1,900 | 2,900 | 3,950 | 7,250  | 10,500 | 11,000 | 14,750 |
| 25,000                    | 1,300                                                     | 2,050 | 3,100 | 4,250 | 8,000  | 11,500 | 12,500 | 15,500 |
| 30,000                    | 1,375                                                     | 2,150 | 3,300 | 4,500 | 8,250  | 12,000 | 13,750 | 16,500 |
| 35,000                    | 1,400                                                     | 2,250 | 3,500 | 4,750 | 8,500  | 13,000 | 14,000 | 17,000 |
| 40,000                    | 1,425                                                     | 2,400 | 3,650 | 4,950 | 8,700  | 14,000 | 14,750 | 18,000 |
| 50,000                    | 1,600                                                     | 2,450 | 3,900 | 5,350 | 9,500  | 14,500 | 16,000 | 20,000 |
| 60,000                    | 1,650                                                     | 2,625 | 4,150 | 5,650 | 10,000 | 15,500 | 17,300 | 21,000 |
| 80,000                    | 1,825                                                     | 2,800 | 4,570 | 6,250 | 11,000 | 17,000 | 18,750 | 23,000 |
| 100,000                   | 2,000                                                     | 3,100 | 4,950 | 6,700 | 12,000 | 18,000 | 20,000 | 25,000 |
| 150,000                   | 2,250                                                     | 3,400 | 5,650 | 7,700 | 13,000 | 21,000 | 23,000 | 28,500 |
| 200,000                   | 2,450                                                     | 3,800 | 6,200 | 8,450 | 15,000 | 23,000 | 25,000 | 31,000 |

\*Prospective RMS Symmetrical Amperes Short-Circuit Current

Note: Data Derived from Peak Let-Thru Curves

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