

# 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

##### Material

1–30 A: melamine body, bronze caps  
35–1200 A: melamine body, copper caps

##### Environmental

RoHS Compliant

##### Country of Origin

Mexico

#### 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

##### Material

1–30 A: melamine body, copper caps  
35–60 A: melamine body, bronze caps  
70–1200 A: melamine body, copper caps

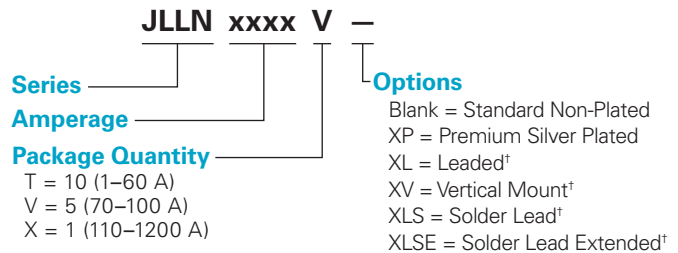
##### Environmental

RoHS Compliant

##### Country of Origin

Mexico

### 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

**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) |

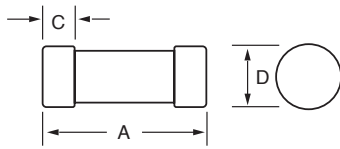


Fig. 1

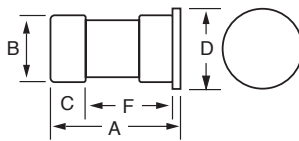


Fig. 2

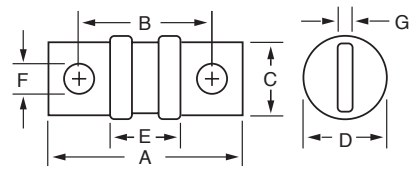
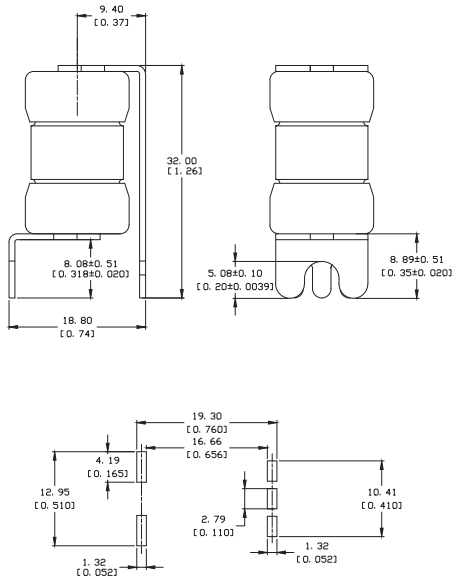


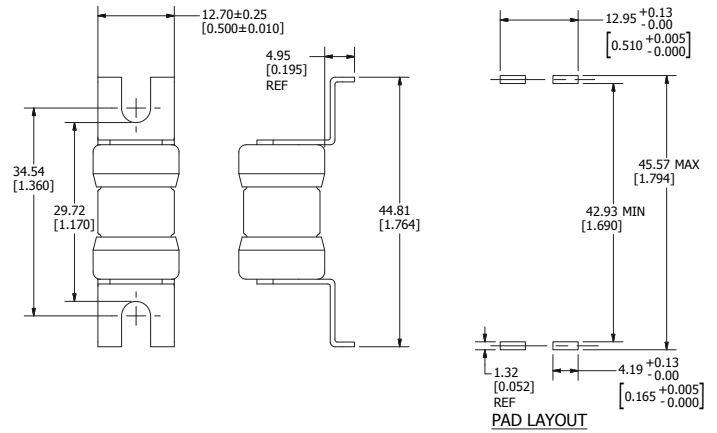
Fig. 3

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

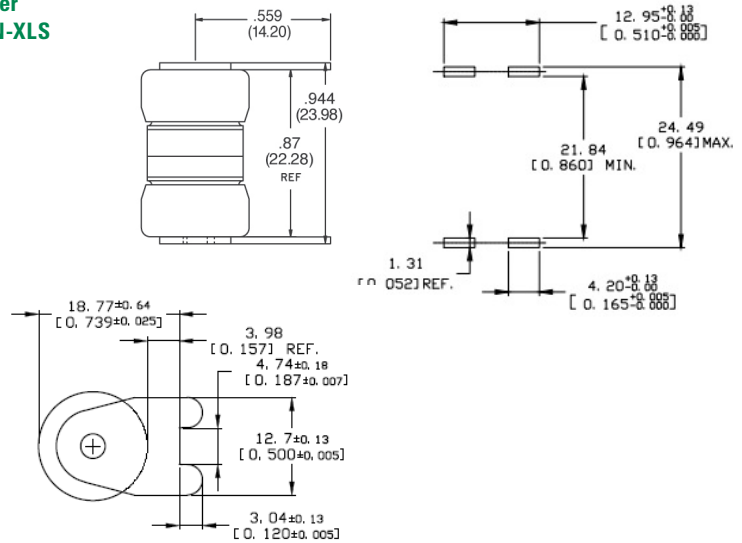
**Vertical Mount  
 JLLN-XV**



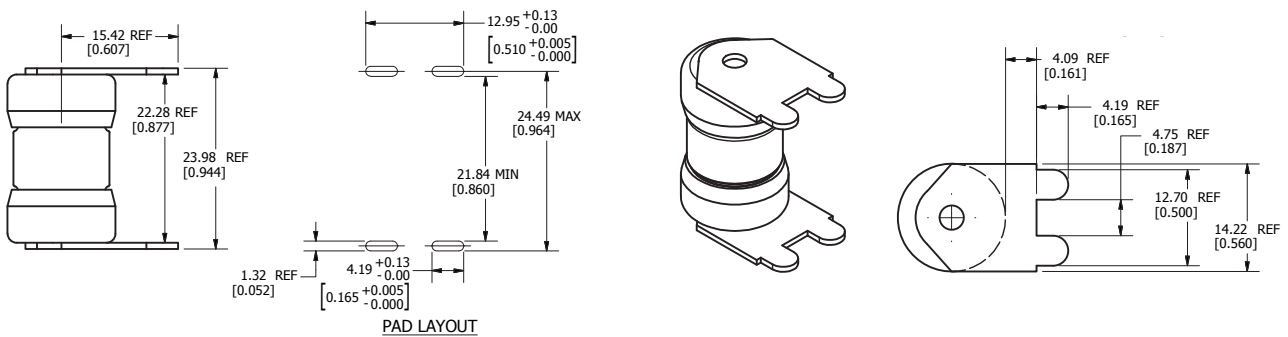
**Leaded  
 JLLN-XL**



**Solder  
 JLLN-XLS**



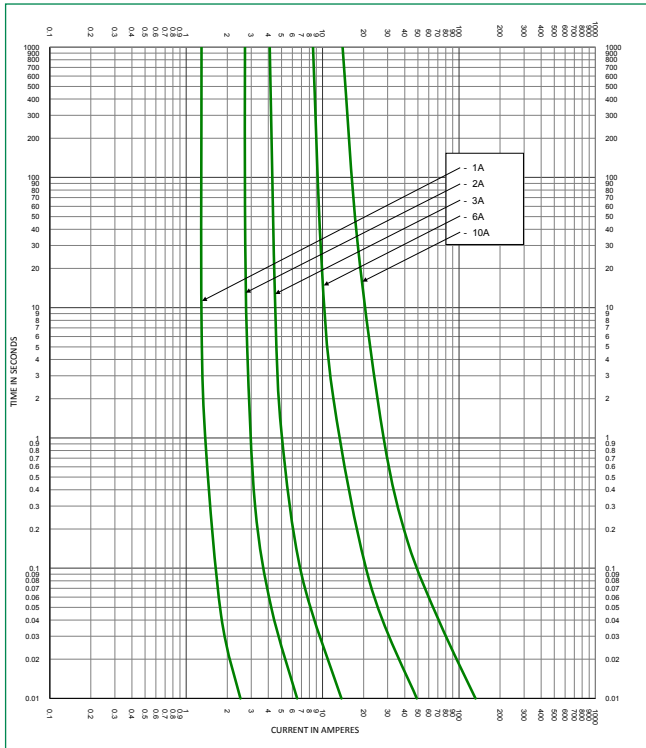
**LSE Terminal Option**



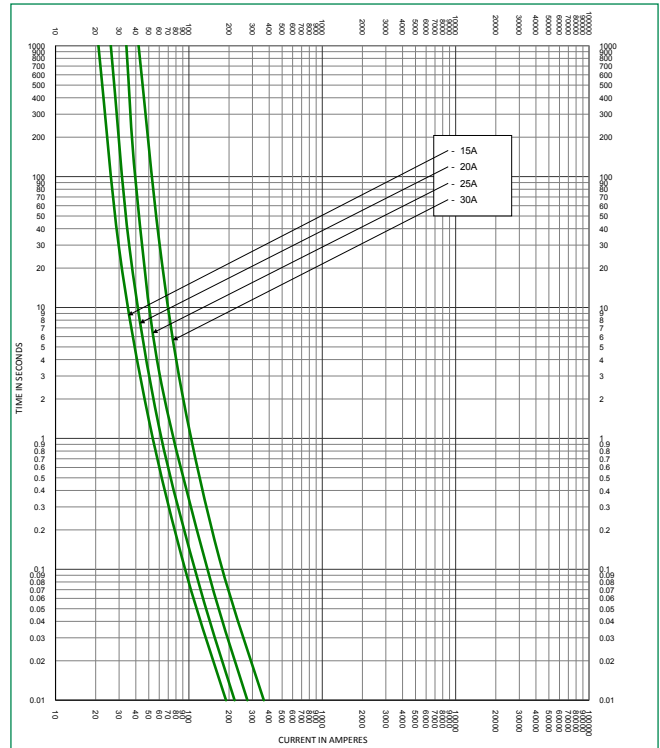
# POWR-GARD® Fuse

## CLASS T – JLLN / JLLS SERIES

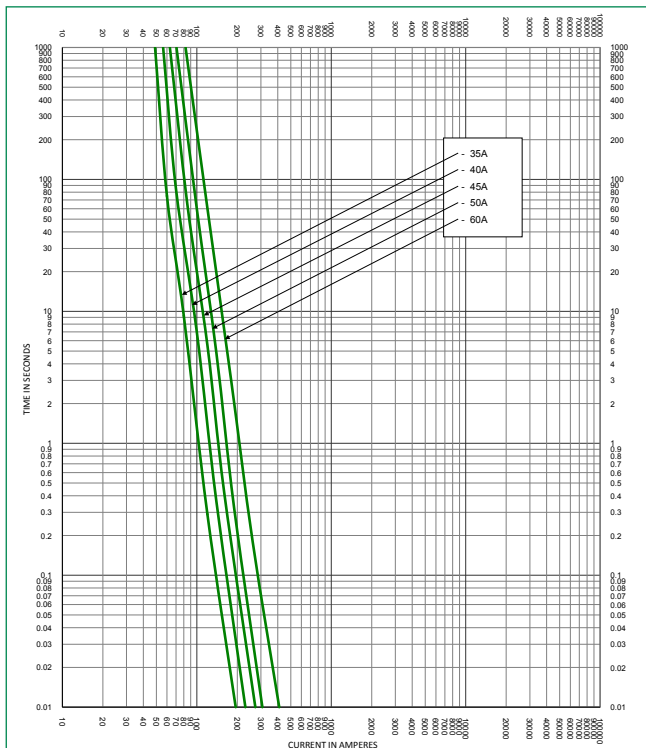
### Time Current Curve JLLN (1–10 A)



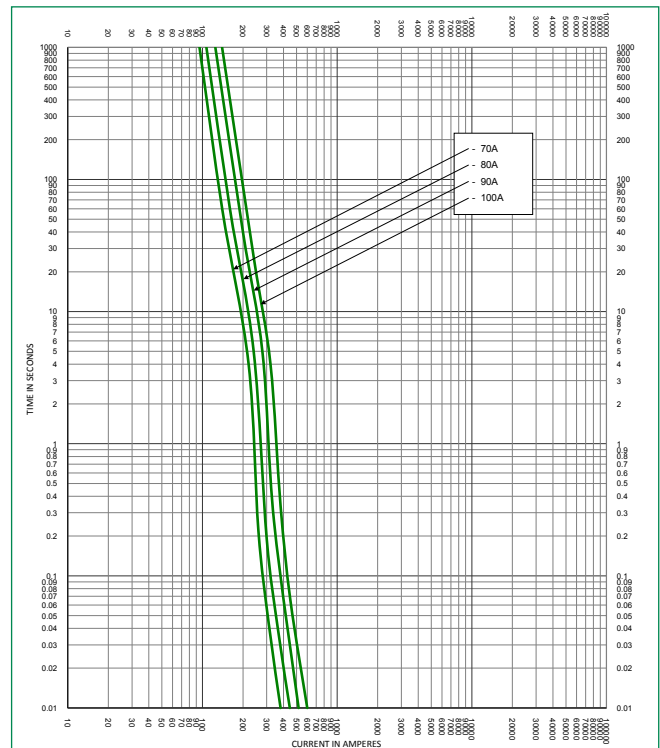
### Time Current Curve JLLN (15–30 A)



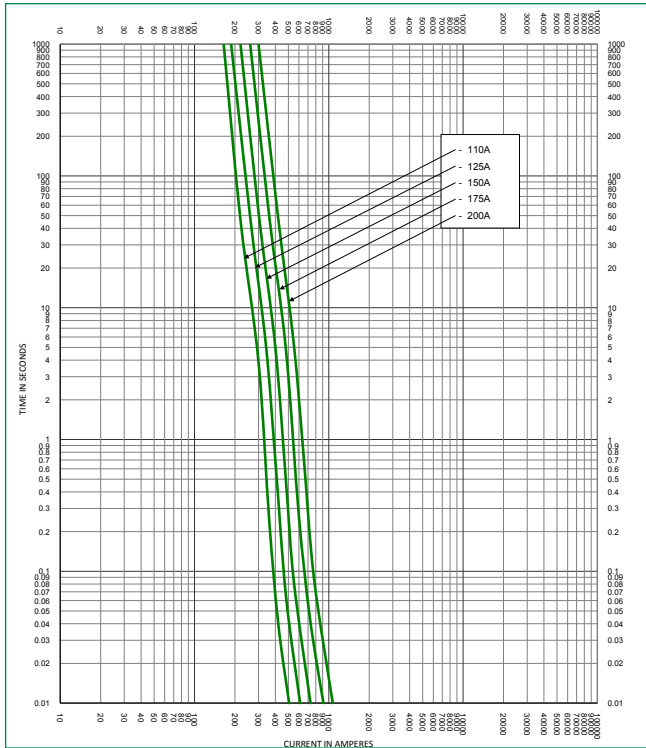
### Time Current Curve JLLN (35–60 A)



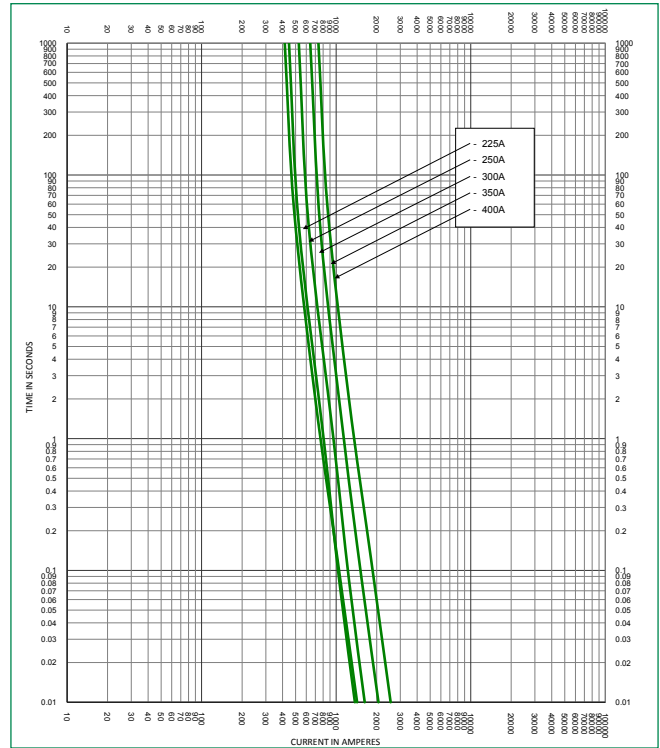
### Time Current Curve JLLN (70–100 A)



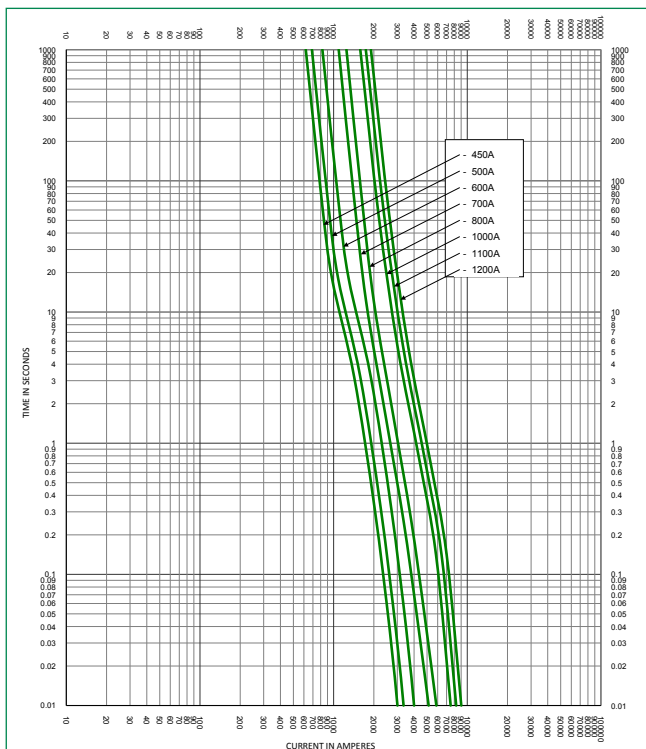
**Time Current Curve JLLN (110–200 A)**



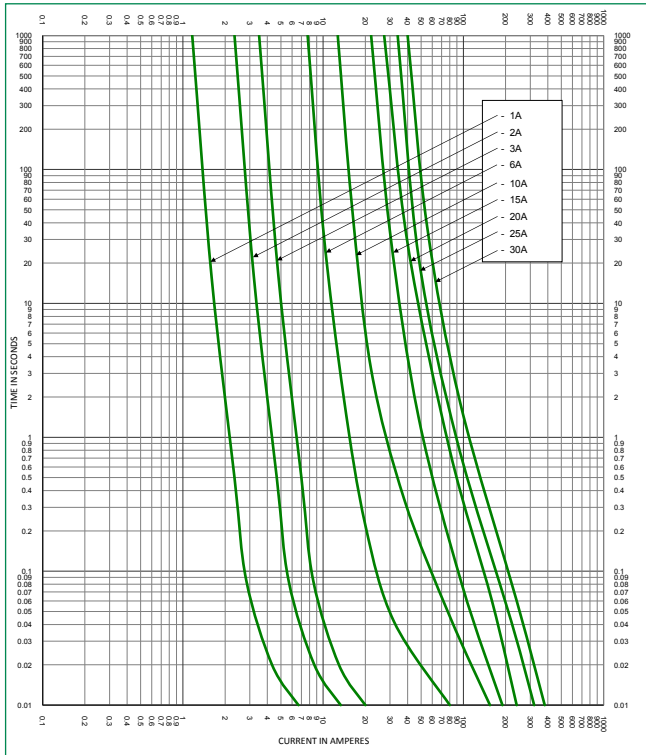
**Time Current Curve JLLN (225–400 A)**



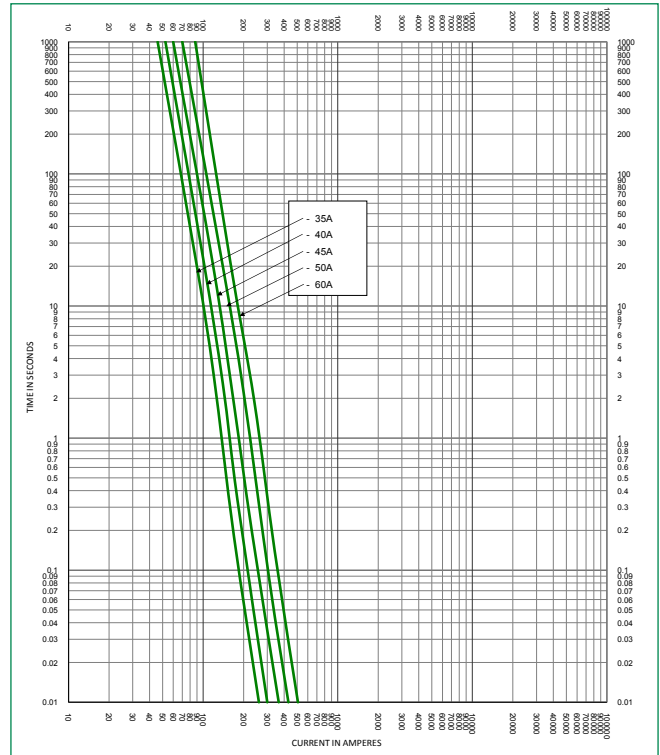
**Time Current Curve JLLN (450–1200 A)**



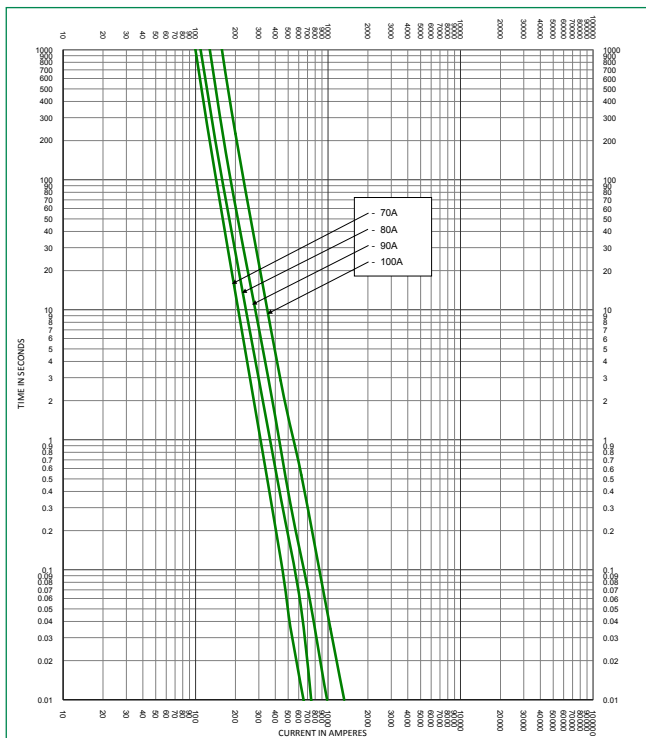
**Time Current Curve JLLS (1–30 A)**



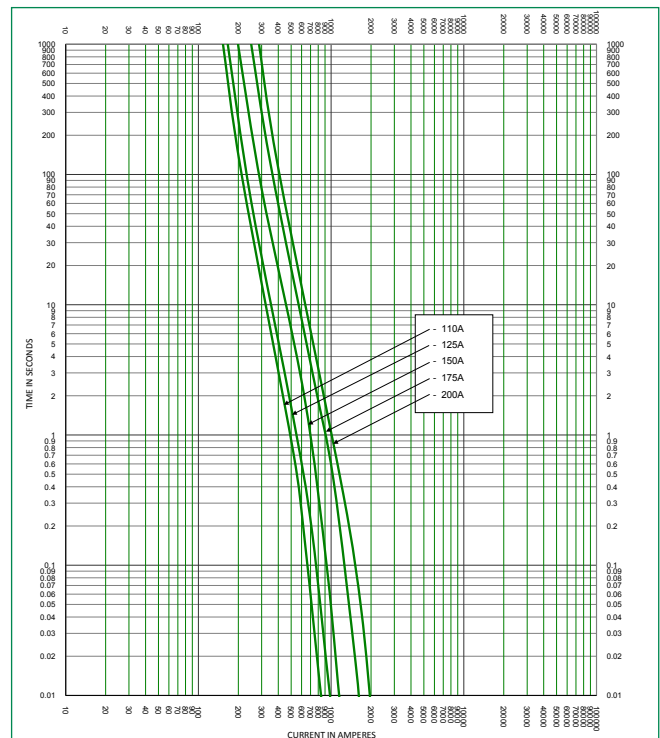
**Time Current Curve JLLS (35–60 A)**



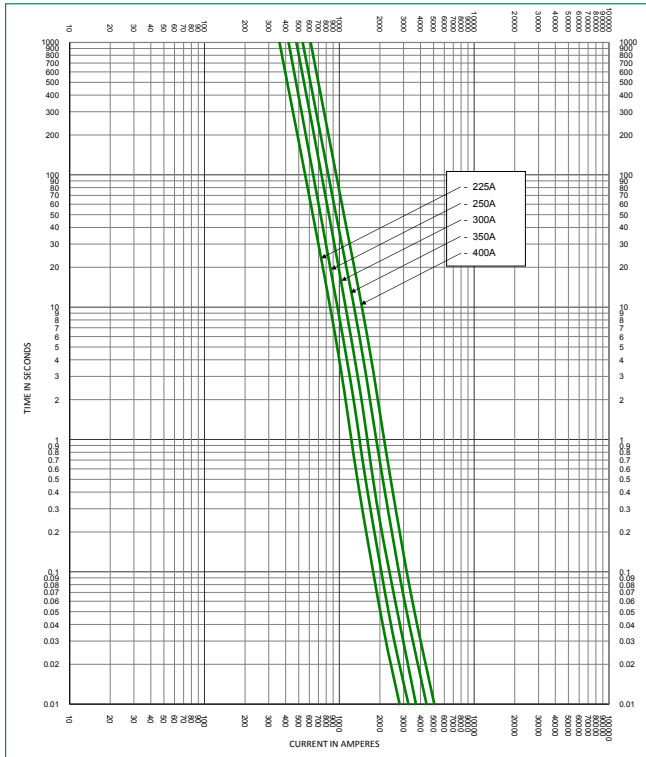
**Time Current Curve JLLS (70–100 A)**



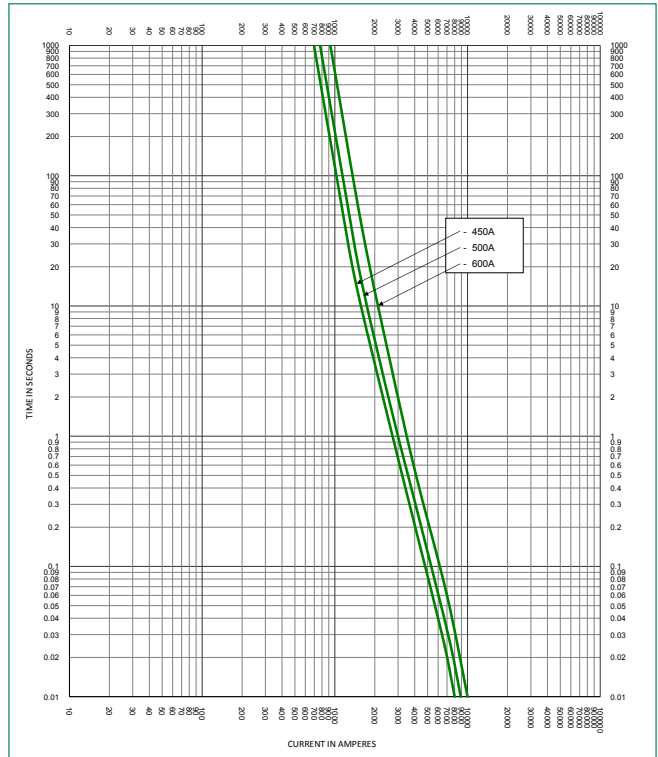
**Time Current Curve JLLS (110–200 A)**



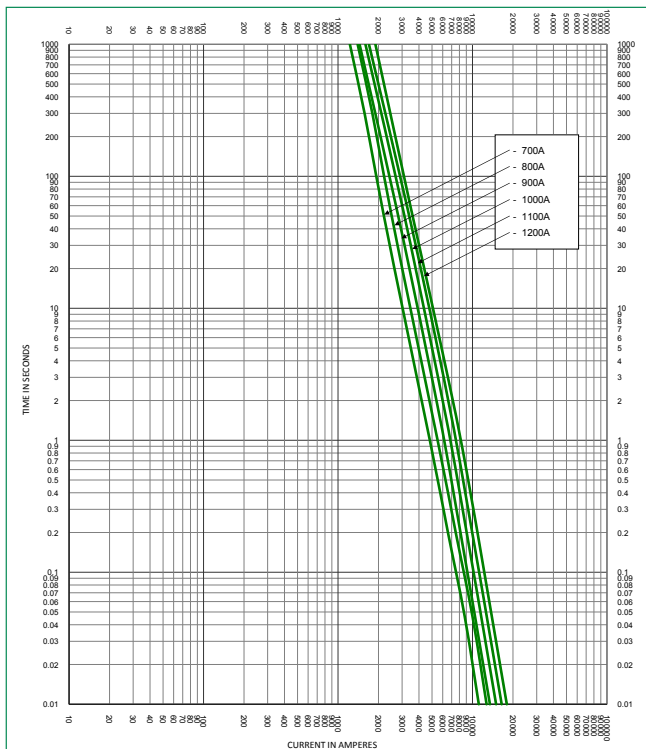
**Time Current Curve JLLS (225–400A)**



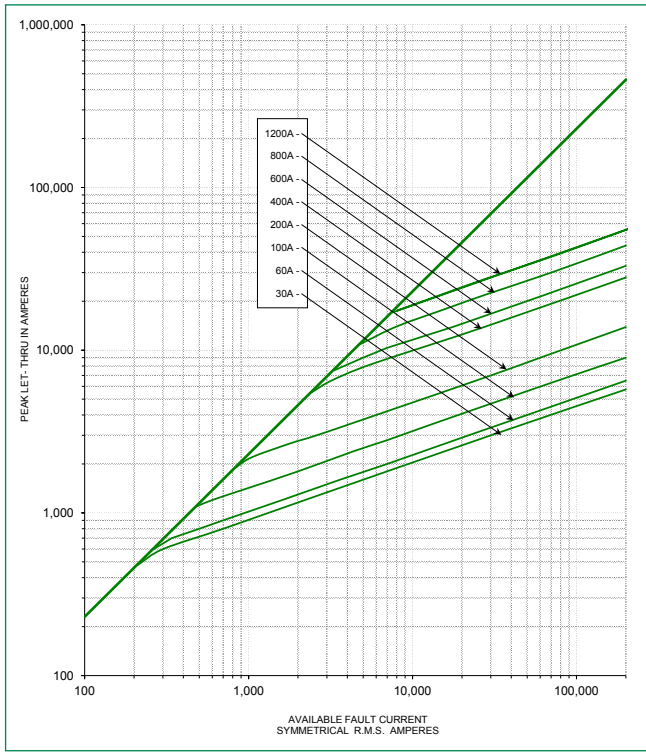
**Time Current Curve JLLS (450–600A)**



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



**Peak Let-Through Curve and Current-Limiting Effects of JLLN (300 V) Fuses**

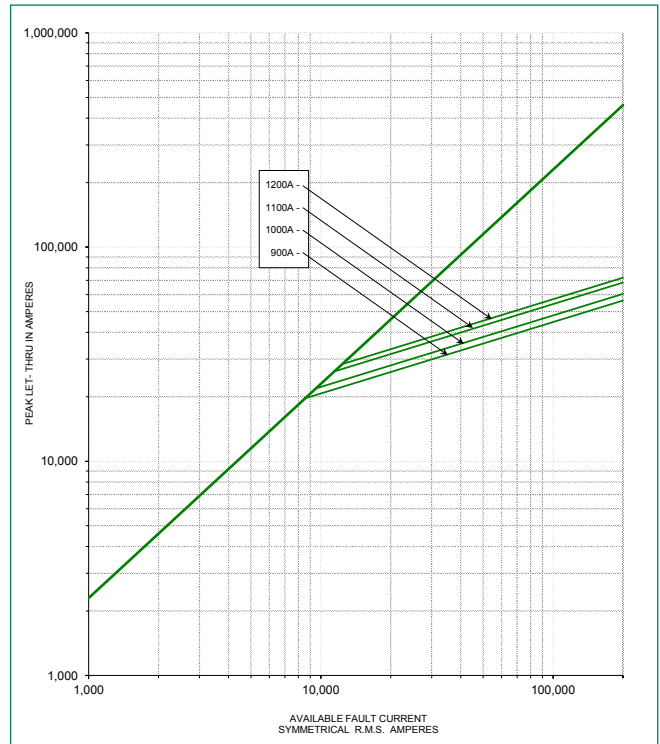
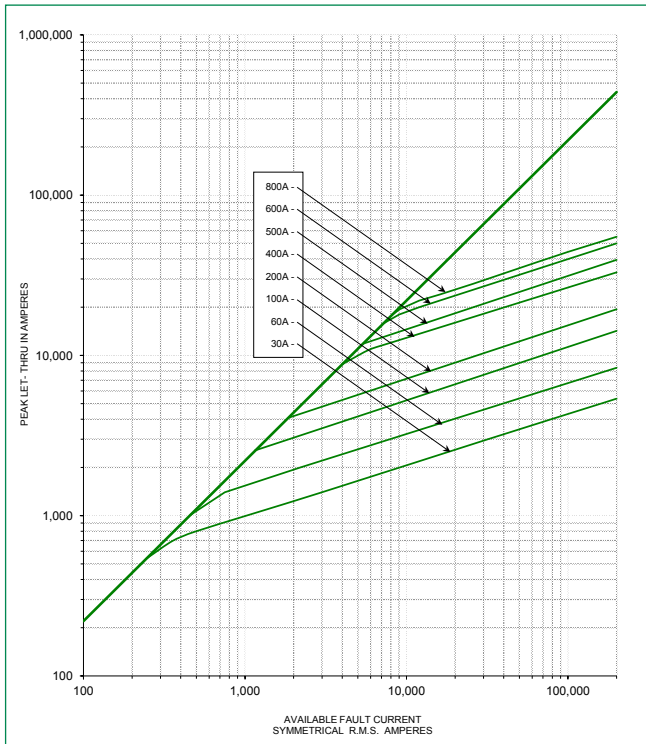


| SHORT CIRCUIT CURRENT* | APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS |       |       |       |        |        |        |        |
|------------------------|---|-------|-------|-------|--------|--------|--------|--------|
|                        | 30 A  | 60 A  | 100 A | 200 A | 400 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-Through Curves



**Peak Let-Through Curve and Current-Limiting Effects of JLLS (600 V) Fuses**



| SHORT CIRCUIT 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-Through Curves

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/product-disclaimer](http://www.littelfuse.com/product-disclaimer).