

KLKD SERIES 10x38 FUSES

600 Vac/dc • 1/10-30 A • Fast Acting



Description

The KLKD fuse series is fast-acting with a high DC voltage rating. This family of Midget style fuses (10 x 38 mm) is used in solar combiner boxes and in circuits with DC fault currents up to 50,000 amperes. KLKD fuses are available in standard and board-mount configurations.

In addition, the KLKD series has been designed to meet both the UL and IEC photovoltaic fuse standards.

Littelfuse offers a wide range of ampere ratings to match specific requirements in a variety of applications.

Features/Benefits

- Designed to UL and IEC photovoltaic specifications
- 1/10 - 30 A ratings available
- 50,000 A Interrupting Rating
- Available in ferrule or PCB mount options
- 1-5 A meets UL1741 GFDI requirements

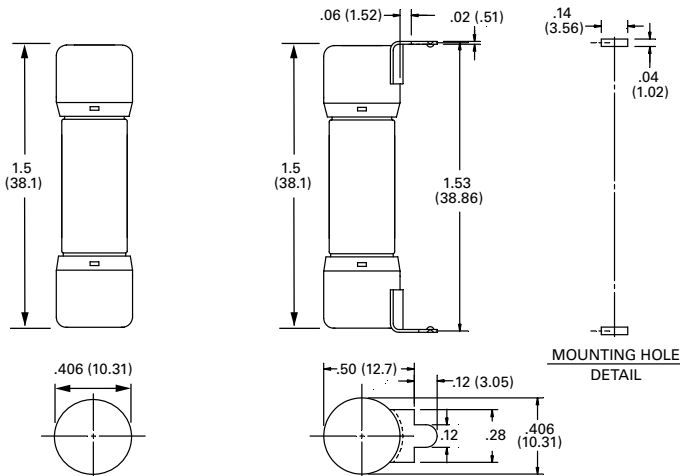
Applications

- Combiner boxes and Inverters
- Power supplies
- Desktop meters

Dimensions Inches (mm)

Ferrule Version

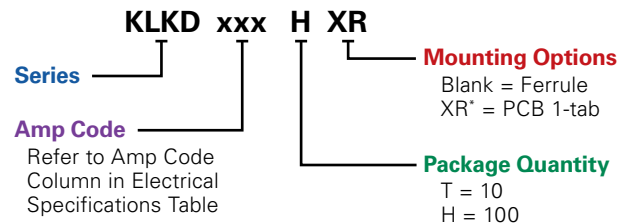
PCB 1-Tab



Specifications

| | |
|-------------------------------|---|
| Voltage Rating: | 600 Vac/Vdc |
| Ampere Rating: | 1/10, 1/8, 2/10, 1/4, 3/10, 1/2, 3/4, 1, 1 1/2, 2, 2 1/2, 3, 3 1/2, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30 |
| Interrupting Ratings: | AC: 100 kA 200 kA Littelfuse self-certified |
| Material: | Body: Melamine / Caps: Copper Alloy |
| Operating Temperature: | See Rerating Curve |
| Approvals: | UL 2579 Listed (File: E339112) IEC 60269-6 (2-25 A) VDE Certified (No. 40033094) UL 248-14 Listed (File: E10480) CSA Certified Ferrule only (File: LR29862) RoHS Compliant |
| Environmental: | RoHS Compliant |
| Country of Origin: | Mexico |

Part Numbering System



| SERIES | AMP | PACKAGE QUANTITY | MOUNTING METHOD | CATALOG NUMBER | ORDERING NUMBER |
|--------|-----|------------------|-----------------|----------------|-----------------|
| KLKD | 1/8 | 10 | FERRULE | KLKD.125 | KLKD.125T |
| KLKD | 5 | 100 | FERRULE | KLKD005 | KLKD005.H |
| KLKD | 15 | 100 | PCB 1-TAB | KLKD015R | KLKD015.HXR |

*Only available in 100 packs (H) and select ratings.

Recommended Fuse Holders

Littelfuse LFPSM and LPSM Dead-Front Series
Littelfuse L60030M Open-Face Series

Web Resources

Download CAD drawings and other technical information:
littelfuse.com/klkd

KLKD SERIES 10x38 FUSES

Ordering Information

Ferrule Version

| AMP RATING | AMP CODE | CATALOG NUMBER | ORDERING NUMBER | VOLTAGE | | INTERRUPTING RATING (kA) | | UPC | WEIGHT LB (G) | AGENCY APPROVALS | | |
|------------|----------|----------------|-----------------|---------|-----|--------------------------|-------------|-------------|---------------|------------------|-----|--|
| | | | | DC & AC | AC | DC | UL | | | VDE | CSA | |
| 1/10 | .100 | KLKD 1/10 | KLKD.100T | 600 | 100 | 50 | 07945810189 | .013 (5.90) | • | | • | |
| 1/8 | .125 | KLKD 1/8 | KLKD.125T | 600 | 100 | 50 | 07945810190 | .013 (5.90) | • | | • | |
| 2/10 | .20 | KLKD 2/10 | KLKD.200T | 600 | 100 | 50 | 07945810191 | .013 (5.90) | • | | • | |
| 1/4 | .250 | KLKD 1/4 | KLKD.250T | 600 | 100 | 50 | 07945810192 | .013 (5.90) | • | | • | |
| 3/10 | .300 | KLKD 3/10 | KLKD.300T | 600 | 100 | 50 | 07945810193 | .013 (5.90) | • | | • | |
| 1/2 | .500 | KLKD 1/2 | KLKD.500T | 600 | 100 | 50 | 07945810194 | .013 (5.90) | • | | • | |
| 3/4 | .750 | KLKD 3/4 | KLKD.750T | 600 | 100 | 50 | 07945810195 | .013 (5.90) | • | | • | |
| 1 | 001 | KLKD 1 | KLKD001.T | 600 | 100 | 50 | 07945810196 | .013 (5.90) | • | | • | |
| 1 1/2 | 01.5 | KLKD 1 1/2 | KLKD01.5T | 600 | 100 | 50 | 07945810197 | .013 (5.90) | • | | • | |
| 2 | 002 | KLKD 2 | KLKD002.T | 600 | 100 | 50 | 07945810198 | .017 (7.71) | • | • | • | |
| 2 1/2 | 02.5 | KLKD 2 1/2 | KLKD02.5T | 600 | 100 | 50 | 07945810199 | .017 (7.71) | • | • | • | |
| 3 | 003 | KLKD 3 | KLKD003.T | 600 | 100 | 50 | 07945810200 | .017 (7.71) | • | • | • | |
| 3 1/2 | 03.5 | KLKD 3 1/2 | KLKD03.5T | 600 | 100 | 50 | 07945810214 | .017 (7.71) | • | • | • | |
| 4 | 004 | KLKD 4 | KLKD004.T | 600 | 100 | 50 | 07945810201 | .017 (7.71) | • | • | • | |
| 5 | 005 | KLKD 5 | KLKD005.T | 600 | 100 | 50 | 07945810202 | .017 (7.71) | • | • | • | |
| 6 | 006 | KLKD 6 | KLKD006.T | 600 | 100 | 50 | 07945810203 | .017 (7.71) | • | • | • | |
| 7 | 007 | KLKD 7 | KLKD007.T | 600 | 100 | 50 | 07945810204 | .017 (7.71) | • | • | • | |
| 8 | 008 | KLKD 8 | KLKD008.T | 600 | 100 | 50 | 07945810205 | .017 (7.71) | • | • | • | |
| 9 | 009 | KLKD 9 | KLKD009.T | 600 | 100 | 50 | 07945810215 | .017 (7.71) | • | • | • | |
| 10 | 010 | KLKD 10 | KLKD010.T | 600 | 100 | 50 | 07945810206 | .017 (7.71) | • | • | • | |
| 12 | 012 | KLKD 12 | KLKD012.T | 600 | 100 | 50 | 07945810207 | .017 (7.71) | • | • | • | |
| 15 | 015 | KLKD 15 | KLKD015.T | 600 | 100 | 50 | 07945810208 | .017 (7.71) | • | • | • | |
| 20 | 020 | KLKD 20 | KLKD020.T | 600 | 100 | 50 | 07945810209 | .017 (7.71) | • | • | • | |
| 25 | 025 | KLKD 25 | KLKD025.T | 600 | 100 | 50 | 07945810210 | .017 (7.71) | • | • | • | |
| 30 | 030 | KLKD 30 | KLKD030.T | 600 | 100 | 50 | 07945810211 | .017 (7.71) | • | | • | |

PCB 1-Tab Version

| AMP RATING | AMP CODE | CATALOG NUMBER | ORDERING NUMBER | VOLTAGE RATING | | INTERRUPTING RATING (kA) | | UPC | APPROVALS | |
|------------|----------|----------------|-----------------|----------------|-----|--------------------------|-------------|-----|-----------|---|
| | | | | DC & AC | AC | DC | UL | | CE | |
| 1/10 | .100 | KLKD 1/10-R | KLKD.100HXR | 600 | 100 | 50 | 07945814857 | | • | • |
| 1/2 | .500 | KLKD 1/2-R | KLKD.500HXR | 600 | 100 | 50 | 07945814858 | | • | • |
| 1 | 001 | KLKD 1-R | KLKD001.HXR | 600 | 100 | 50 | 07945812133 | | • | • |
| 2 | 002 | KLKD 2-R | KLKD002.HXR | 600 | 100 | 50 | 07945894349 | | • | • |
| 3 | 003 | KLKD 3-R | KLKD003.HXR | 600 | 100 | 50 | 07945818991 | | • | • |
| 4 | 004 | KLKD 4-R | KLKD004.HXR | 600 | 100 | 50 | 07945811495 | | • | • |
| 5 | 005 | KLKD 5-R | KLKD005.HXR | 600 | 100 | 50 | 07945814859 | | • | • |
| 6 | 006 | KLKD 6-R | KLKD006.HXR | 600 | 100 | 50 | 07945894350 | | • | • |
| 8 | 008 | KLKD 8-R | KLKD008.HXR | 600 | 100 | 50 | 07945894351 | | • | • |
| 10 | 010 | KLKD 10-R | KLKD010.HXR | 600 | 100 | 50 | 07945814860 | | • | • |
| 12 | 012 | KLKD 12-R | KLKD012.HXR | 600 | 100 | 50 | 07945894352 | | • | • |
| 15 | 015 | KLKD 15-R | KLKD015.HXR | 600 | 100 | 50 | 07945894353 | | • | • |
| 20 | 020 | KLKD 20-R | KLKD020.HXR | 600 | 100 | 50 | 07945894354 | | • | • |
| 25 | 025 | KLKD 25-R | KLKD025.HXR | 600 | 100 | 50 | 07945894355 | | • | • |
| 30 | 030 | KLKD 30-R | KLKD030.HXR | 600 | 100 | 50 | 07945894356 | | • | • |

KLKD SERIES 10x38 FUSES

Electrical Specifications

| AMP RATING | CATALOG NUMBER | NOM COLD RESISTANCE (ohm) | AVERAGE MELT TIME | AVERAGE MELTING I ² t | WATTS LOSS AT 100% RATED CURRENT (W) | WATTS LOSS AT 80% RATED CURRENT (W) | AVERAGE CLEARING TIME | TOTAL CLEARING I ² t (A ² s) 20 kA | TOTAL CLEARING I ² t (A ² s) 100 kA |
|------------|----------------|---------------------------|-------------------|----------------------------------|--------------------------------------|-------------------------------------|-----------------------|--|---|
| 1/10 | KLKD 1/10 | 85.5 | – | – | 0.780 | 0.505 | 0.000047 | 0.019 | – |
| 1/8 | KLKD 1/8 | 65 | – | – | 0.975 | 0.659 | 0.000050 | 0.010 | – |
| 2/10 | KLKD 2/10 | 30.9 | – | – | 1.213 | 0.773 | 0.000073 | 0.032 | – |
| 1/4 | KLKD 1/4 | 22 | – | – | 1.364 | 0.870 | – | – | – |
| 3/10 | KLKD 3/10 | 16.2 | – | – | 1.519 | 0.960 | 0.000101 | 0.067 | – |
| 1/2 | KLKD 1/2 | 8.16 | – | – | 1.961 | 1.237 | 0.000141 | 0.197 | – |
| 3/4 | KLKD 3/4 | 0.402 | 0.000063 | 0.234 | 0.361 | 0.199 | 0.000170 | 0.753 | – |
| 1 | KLKD 1 | 0.252 | 0.000094 | 0.678 | 0.388 | 0.273 | 0.000247 | 1.827 | 0.008 |
| 1 1/2 | KLKD 1 1/2 | 0.134 | 0.000153 | 2.890 | 0.409 | 0.229 | 0.000828 | 13.956 | 280 |
| 2 | KLKD 2 | 0.124 | 0.000145 | 2.379 | 0.823 | 0.606 | 0.000291 | 3.919 | 0.012 |
| 2 1/2 | KLKD 2 1/2 | 0.0989 | 0.000186 | 5.142 | 0.912 | 0.618 | 0.000387 | 8.877 | – |
| 3 | KLKD 3 | 0.0773 | 0.000211 | 7.821 | 0.957 | 0.654 | 0.000449 | 14.835 | – |
| 3 1/2 | KLKD 3 1/2 | 0.0613 | 0.000249 | 12.417 | 1.12 | 0.826 | 0.000471 | 21.048 | – |
| 4 | KLKD 4 | 0.0511 | 0.000284 | 18.945 | 1.367 | 0.891 | 0.000507 | 30.76 | 0.019 |
| 5 | KLKD 5 | 0.0363 | 0.000347 | 34.163 | 1.4 | 0.938 | 0.000607 | 56.514 | 0.024 |
| 6 | KLKD 6 | 0.0261 | 0.000423 | 62.951 | 1.516 | 0.998 | 0.000735 | 96.824 | 0.035 |
| 7 | KLKD 7 | 0.0205 | 0.000505 | 105.143 | 1.577 | 1.066 | 0.000898 | 168.578 | 0.087 |
| 8 | KLKD 8 | 0.0194 | 0.000541 | 130.266 | 1.824 | 1.205 | 0.000945 | 210.595 | 0.656 |
| 9 | KLKD 9 | 0.0166 | 0.000587 | 164.221 | 2.208 | 1.428 | 0.000992 | 266.633 | – |
| 10 | KLKD 10 | 0.0128 | 0.000701 | 278.390 | 1.893 | 1.3 | 0.001200 | 454.628 | 211.667 |
| 12 | KLKD 12 | 0.0103 | 0.000822 | 445.010 | 2.296 | 1.584 | 0.001455 | 744.775 | 440 |
| 15 | KLKD 15 | 0.00782 | 0.000544 | 137.333 | 2.045 | 1.57 | 0.001721 | 351.24 | – |
| 20 | KLKD 20 | 0.0045 | 0.000826 | 462.056 | 2.133 | 1.593 | 0.006144 | 1151.185 | 2120 |
| 25 | KLKD 25 | 0.003532 | 0.001007 | 834.529 | 2.55 | 1.933 | 0.002085 | 1744.033 | 2085 |
| 30 | KLKD 30 | 0.002776 | 0.001207 | 1409 | 3.701 | 1.983 | 0.002266 | 2757 | 3220 |

Note: Test Circuit 600 Vac / 20 kA

KLKD SERIES 10x38 FUSES

Current-Limiting Effects

| SHORT CIRCUIT CURRENT* | APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS | | | |
|------------------------|---|------|------|------|
| | 1 1/2 A | 12 A | 25 A | 30 A |
| 5,000 | 240 | 292 | 654 | 722 |
| 10,000 | 303 | 367 | 823 | 910 |
| 15,000 | 347 | 420 | 943 | 1042 |
| 20,000 | 381 | 463 | 1037 | 1147 |
| 25,000 | 411 | 498 | 1117 | 1235 |
| 30,000 | 437 | 530 | 1188 | 1313 |
| 35,000 | 460 | 558 | 1250 | 1382 |
| 40,000 | 481 | 583 | 1307 | 1445 |
| 50,000 | 518 | 628 | 1408 | 1556 |
| 60,000 | 550 | 667 | 1496 | 1654 |
| 80,000 | 605 | 735 | 1647 | 1820 |
| 100,000 | 652 | 791 | 1774 | 1961 |

*Prospective RMS Symmetrical Amperes Short-Circuit Current

Electrical Specification – Agency Requirements

| AMPERAGE RATING | OPENING TIME (MINUTES) | | | | |
|-----------------|---------------------------|----------------------------|---------------------------|----------------------------|---------------------------|
| | 100% of Amp Rating per UL | 113% of Amp Rating per IEC | 135% of Amp Rating per UL | 145% of Amp Rating per IEC | 200% of Amp Rating per UL |
| 1/10-30 | Temperature Stabilization | 60 Min | 60 Max | 60 Max | 4 Max |

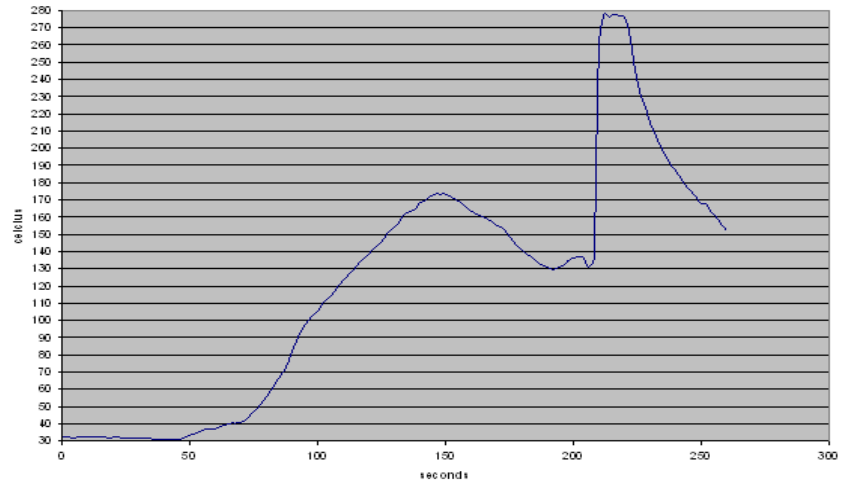
Temperature Derating Curve (Temperature of Air Immediately Surrounding Fuse)



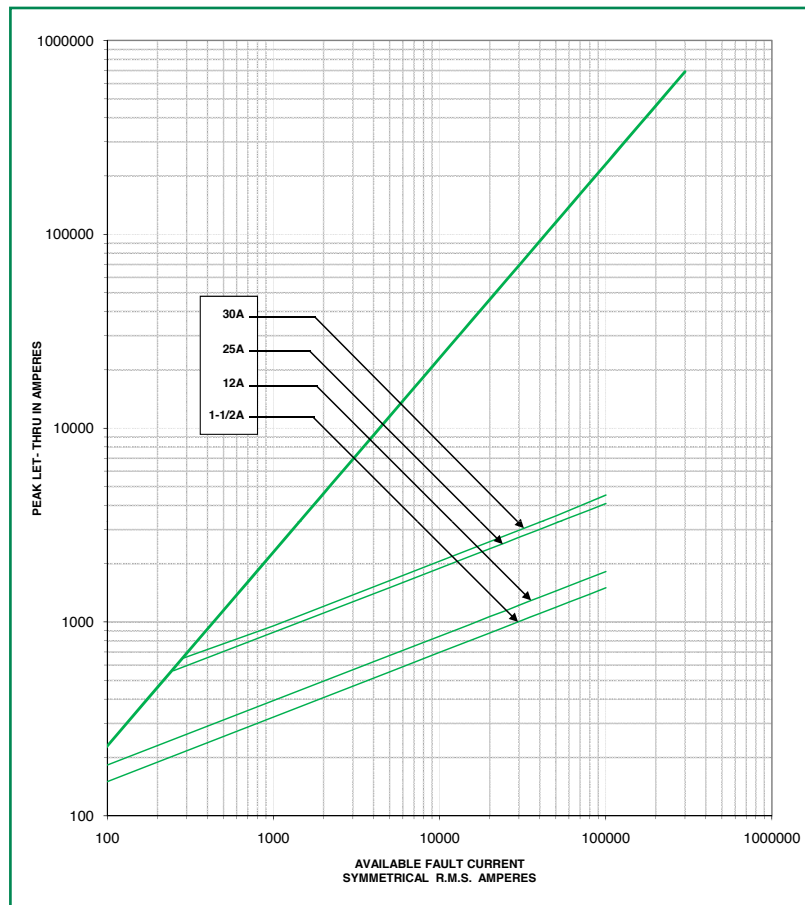
KLKD SERIES 10x38 FUSES

Recommended Process and Soldering Parameters

| WAVE PARAMETER | LEAD FREE RECOMMENDATION |
|------------------------|-----------------------------------|
| Preheat: | (Typical Industry Recommendation) |
| Temperature Minimum: | 130° C |
| Temperature Maximum: | — |
| Pre-heat time | 75 Seconds Maximum |
| Solder Pot Temperature | 280° C Maximum |
| Solder Dwell Time | 270° C for 8 Seconds Maximum |
| Complete Cycle Time | 250 Seconds Maximum |



Peak Let Thru Curve



KLKD SERIES 10x38 FUSES

Time Current Curve (1/8 - 2 1/2 A)



Time Current Curve (3 - 12 A)



Time Current Curve (15 - 25 A)



Time Current Curve (30 A)



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- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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