




SPECIFICATION SHEET

| | |
|--------------------------------|--|
| SPECIFICATION SHEET NO. | N0626- KBL6100000L60A |
| DATE | June. 26, 2021 |
| REVISION | A1 |
| DESCRIPTION | <p>Thru Hole Silicon Bridge Rectifier, KBL Series, KBL610 Type, 4 Pins, Reverse Voltage 1000V Max. Forward Current 6 A Max. Operating Temp. Range -55°C ~+150°C, Package in Bulk, 500pcs/Box RoHS/RoHS III compliant</p> |
| CUSTOMER | |
| CUSTOMER PART NUMBER | |
| CROSS REF. PART NUMBER | |
| ORIGINAL PART NUMBER | MDD KBL610 |
| PART CODE | KBL6100000L60A |

| | | | |
|-------------------------|---|--|---|
| VENDOR APPROVE | | | |
| Issued/Checked/Approved |  |  |  |
| DATE: June 26, 2021 | | | |

| | |
|-------------------------|--|
| CUSTOMER APPROVE | |
| | |
| DATE: | |

THRU HOLE BRIDGE RECTIFIER KBL SERIES

MAIN FEATURE

- The plastic package has Underwrite Laboratory Flammability Classification 94V-0
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed: 260/10 sec. 0.375" lead length, 5 lbs tension



APPLICATION

- For printed circuit board

RFQ

Request For Quotation

PART CODE GUIDE

| KBL | 6100000 | L | 60A |
|-----|---------|---|-----|
| 1 | 2 | 3 | 4 |

- 1) **KBL**: Thru Hole Silicon Bridge Rectifier, KBL Series, 4 Pins
- 2) **6100000**: Type code for original part number KBL610
- 3) **L**: Package code, In Bulk, 500pcs/Box.
- 4) **610**: Specification code for Reverse Voltage 1000V Max. Forward Current 6A Max

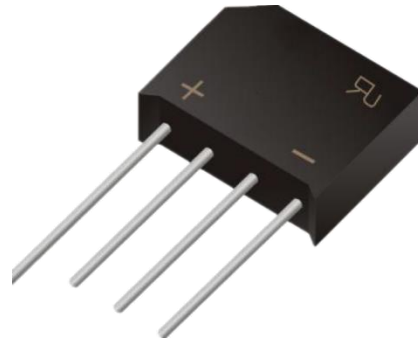
MORE ITEMS AVAILABLE

| | | | | |
|----------------|----------------|----------------|----------------|----------------|
| KBL600500L6005 | KBL6010000L610 | KBL6020000L620 | KBL6040000L640 | KBL6060000L660 |
| KBL6080000L680 | KBL6100000L60A | | | |
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THRU HOLE BRIDGE RECTIFIER KBL SERIES

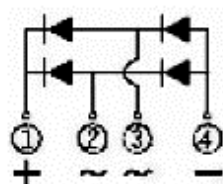
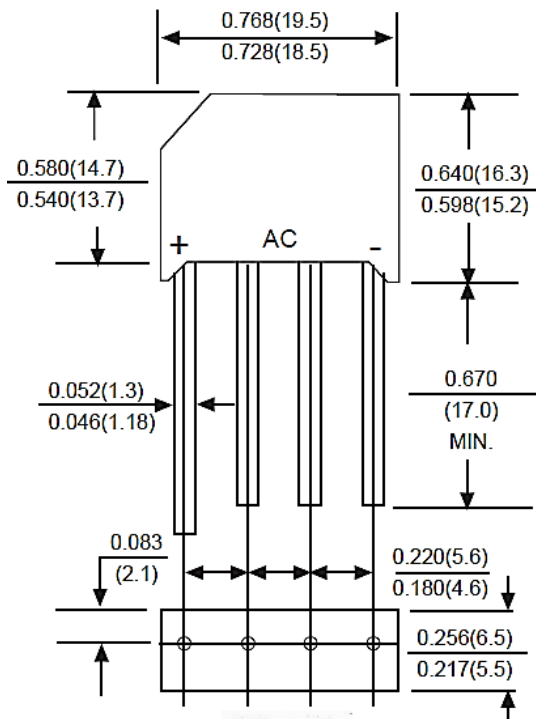
DIMENSION (Unit: Inch/mm)

Image for reference



Marking: KBL610

KBL



THRU HOLE BRIDGE RECTIFIER KBL SERIES
MECHANICAL DATA

| Case | Terminals | Polarity | Mounting Position | Weight per piece |
|-------------------------------|--|---------------------------------|-------------------|--------------------------|
| JEDEC KBL molded plastic body | Solder plated, Solderable per MIL-STD-750, Method 2026 | Polarity symbol marking on body | Any | 0.22 Ounce 6.21 grams |

MAX. RATING & CHARACTERISTICS

| Parameter | SYMBOLS | VALUE | | | UNITS |
|--|------------------|-------|---------|------|------------------|
| | | Min. | Typical | Max. | |
| Repetitive peak reverse voltage | V _{RRM} | | | 1000 | Volts |
| RMS voltage | V _{RMS} | | | 700 | Volts |
| DC blocking voltage | V _{DC} | | | 1000 | Volts |
| Average forward output rectified current at T _c = 50°C (see Note 3) | I _{AV} | | | 6.0 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | | 125 | | A |
| Rating for Fusing (t<8.3ms) | I ² t | | - | | A ² S |
| Forward voltage drop per bridge element at 6.0 A | V _F | | | 1.1 | Volts |
| DC reverse current at rated DC blocking voltage | I _R | | | 10 | μA |
| | | | | 1.0 | mA |
| Junction capacitance (Note2) | C _J | | 105 | | pF |
| Thermal resistance (Note 3) | R _{QJA} | | 20 | | °C/W |
| Operating junction temperature range | T _J | -55 | | +150 | |
| Storage temperature range | T _{STG} | -55 | | +150 | °C |

Note

1. Ratings at 25 C ambient temperature unless otherwise specified. Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V
3. Unit mounted on 3.0"*3.0"*0.11" thick(75*75*30mm) at plate
4. PCB mounted with 0.2"*0.2"(12*12mm) copper pads, 0.375" (9.5mm) lead length

THRU HOLE BRIDGE RECTIFIER KBL SERIES
RELIABILITY

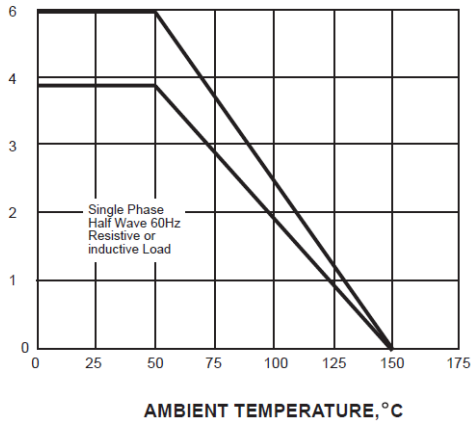
| Number | Experiment Items | Experiment Method And Conditions | Reference Documents |
|--------|------------------------------------|--|---------------------------------|
| 1 | Solder Resistance Test | Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32" | MIL-STD-750D METHOD-2031.2 |
| 2 | Solderability Test | 230°C ±5°C for 5 sec. | MIL-STD-750D METHOD-2026.1 0 |
| 3 | Pull Test | 1 kg in axial lead direction for 10 sec. | MIL-STD-750D METHOD-2036.4 |
| 4 | Bend Test | 0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times | MIL-STD-750D METHOD-2036.4 |
| 5 | High Temperature Reverse Bias Test | TA=100°C for 1000 Hours at VR=80% Rated VR | MIL-STD-750D METHOD-1038.4 |
| 6 | Forward Operation Life Test | TA=25°C Rated Average Rectified Current | MIL-STD-750D METHOD-1027.3 |
| 7 | Intermittent Operation Life Test | On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles. | MIL-STD-750D METHOD-1036.3 |
| 8 | Pressure Cooker Test | 15 PSIG, TA=121°C, 4 hours | MIL-S-19500 APPENOIXC |
| 9 | Temperature Cycling Test | -55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles. | MIL-STD-750D METHOD-1051.7 |
| 10 | Thermal Shock Test | 0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles | MIL-STD-750D METHOD-1056.7 |
| 11 | Forward Surge Test | 8.3ms Single Sale Sine-wave One Surge. | MIL-STD-750D METHOD-4066.4 |
| 12 | Humidity Test | TA=65°C, RH=98% for 1000 hours. | MIL-STD-750D METHOD-1021.3 |
| 13 | High Temperature Storage life Test | 150°C for 1000 Hours | MIL-STD-750D METHOD-1031.5 |

THRU HOLE BRIDGE RECTIFIER KBL SERIES

RATINGS AND CHARACTERISTIC CURVES (For Reference Only)

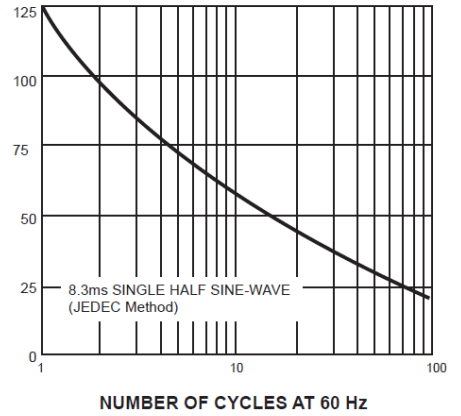
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



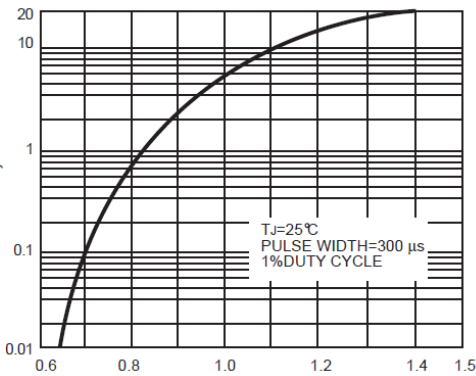
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



INSTANTANEOUS FORWARD CURRENT, AMPERES

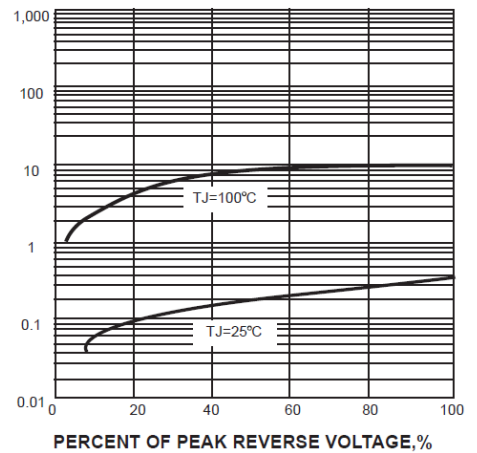
FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

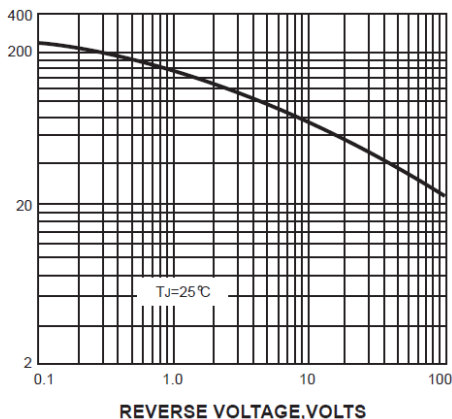
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

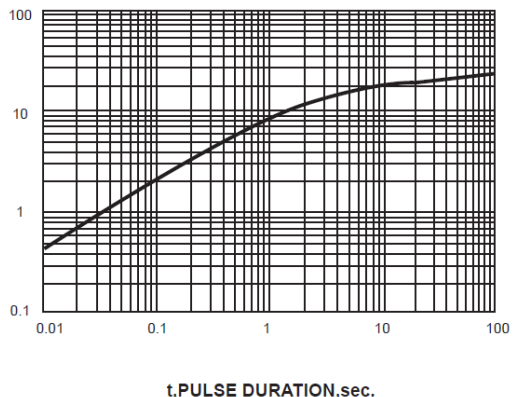
FIG. 5-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE, VOLTS

TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t, PULSE DURATION, sec.

THRU HOLE BRIDGE RECTIFIER KBL SERIES

PACKAGE

| Part Type | Qty. Per Box (pcs) | G.W per box (kg) | Inner Box L*W*H (mm) | Carton size L*W*H (mm) | Qty. Per Carton (pcs) | G. W (kg) |
|-----------|--------------------|------------------|----------------------|------------------------|-----------------------|-----------|
| KBL | 500 | 2.30 | 203*203*44 | 430*220*200 | 3,000 | 14.30 |
| | | | | | | |
| | | | | | | |

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