




**SPECIFICATION SHEET**

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

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

|                         |  |
|-------------------------|--|
| <b>CUSTOMER APPROVE</b> |  |
|                         |  |
| 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

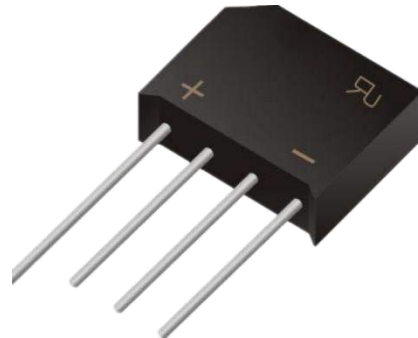
### MORE ITEMS AVAILABLE

|                |                       |                |                |                |
|----------------|-----------------------|----------------|----------------|----------------|
| KBL600500L6005 | KBL6010000L610        | KBL6020000L620 | KBL6040000L640 | KBL6060000L660 |
| KBL6080000L680 | <b>KBL6100000L60A</b> |                |                |                |
|                |                       |                |                |                |

**THRU HOLE BRIDGE RECTIFIER KBL SERIES**

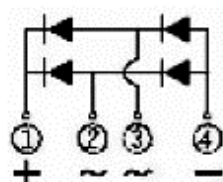
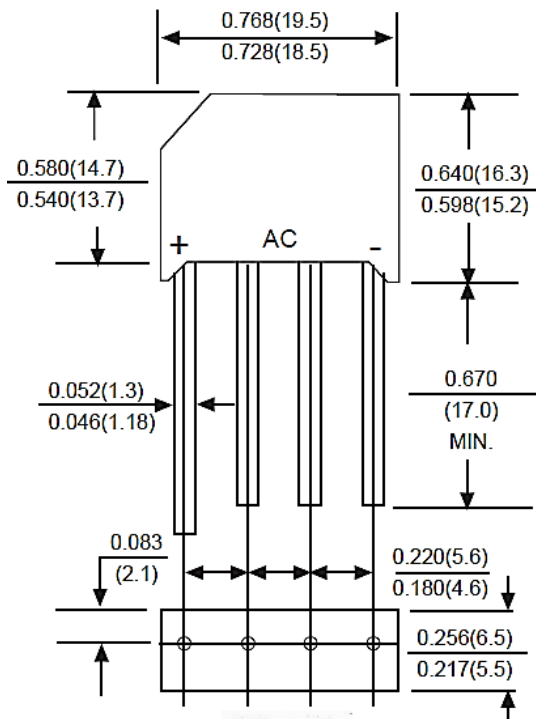
**DIMENSION (Unit: Inch/mm)**

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<br>6.21 grams |

**MAX. RATING & CHARACTERISTICS**

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

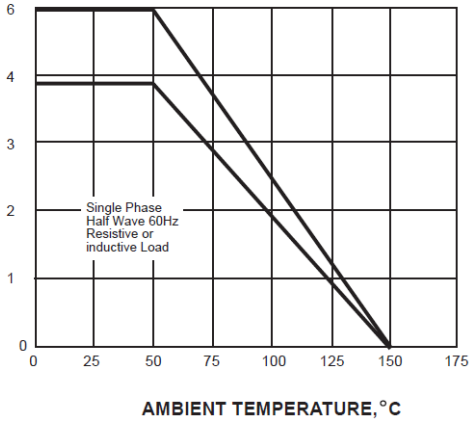
| Number | Experiment Items                   | Experiment Method And Conditions   | Reference Documents             |
|--------|------------------------------------|--|---------------------------------|
| 1      | Solder Resistance Test             | Test 260°C± 5°C for 10 ± 2 sec.<br>Immerse body into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

**THRU HOLE BRIDGE RECTIFIER KBL SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

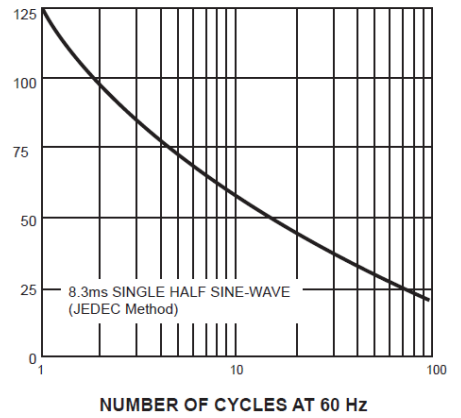
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



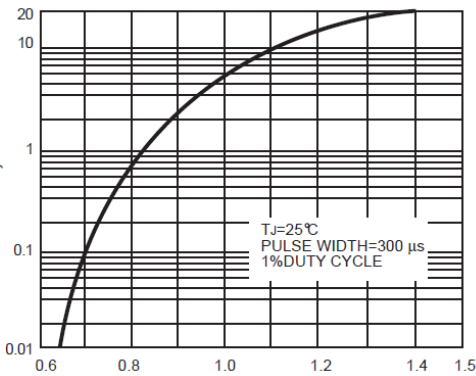
PEAK FORWARD SURGE CURRENT, AMPERES

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



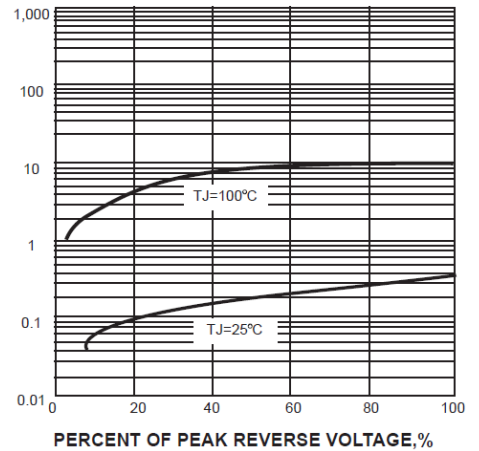
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



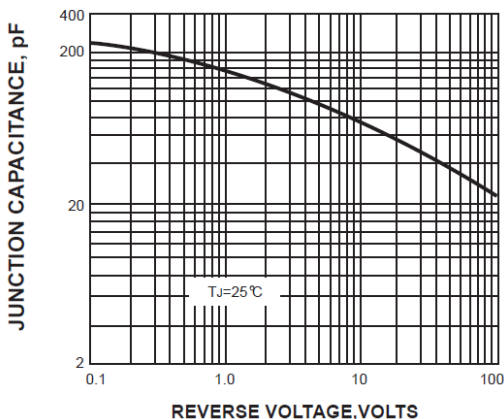
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



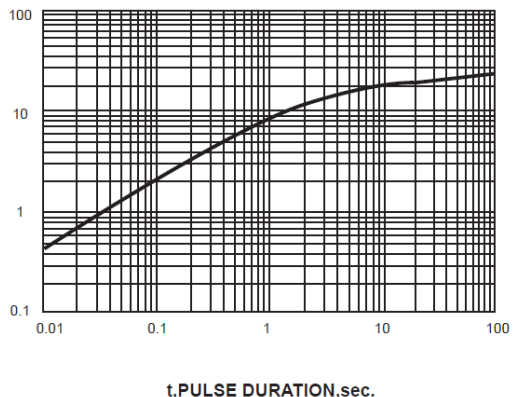
INSTANTANEOUS FORWARD VOLTAGE, VOLTS

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



**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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