

## 4.0 A Single-Phase Silicon Bridge Rectifier

Rectifier Reverse Voltage 50 to 1000V



### Features

- Ideal for printed circuit board mounting
- This series is UL listed under the Recognized Component Index, file number E142814
- The plastic material used carries Underwriters Laboratory flammability recognition 94V-0
- Built-in printed circuit board stand-offs
- High case dielectric strength
- High temperature soldering guaranteed 265°C/10 seconds at 5 lbs (2.3kg) tension

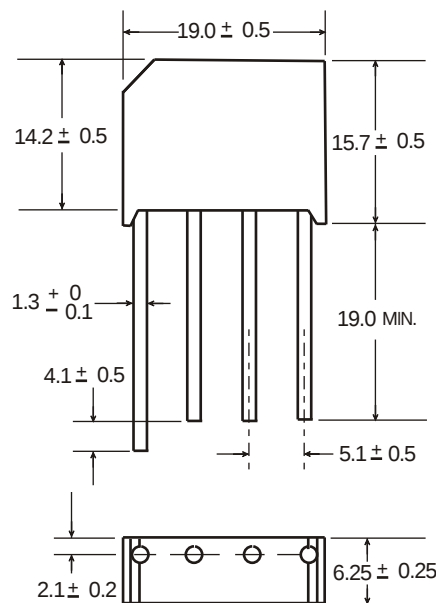
### Mechanical Data

Case: Reliable low cost construction utilizing molded plastic technique

Terminals: Plated leads solderable per MIL-STD-202, Method 208

Mounting Position: Any

Weight: 0.2 ounce, 5.6 grams (approx)



Dimensions in millimeters(1mm =0.0394")

### Maximum Ratings & Thermal Characteristics

Rating at 25°C ambient temperature unless otherwise specified, Resistive or Inductive load, 60 Hz.  
For Capacitive load derate current by 20%.

| Parameter                                                                             | Symbol           | KBL 4005     | KBL 401 | KBL 402 | KBL 404 | KBL 406 | KBL 408 | KBL 410 | unit               |
|---------------------------------------------------------------------------------------|------------------|--------------|---------|---------|---------|---------|---------|---------|--------------------|
| Maximum repetitive peak reverse voltage                                               | VRRM             | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | V                  |
| Maximum RMS bridge input voltage                                                      | VRMS             | 35           | 70      | 140     | 280     | 420     | 560     | 700     | V                  |
| Maximum DC blocking voltage                                                           | VDC              | 50           | 100     | 200     | 400     | 600     | 800     | 1000    | V                  |
| Maximum average forward rectified output current at TA=50°C                           | IF(AV)           | 4.0          |         |         |         |         |         |         | A                  |
| Peak forward surge current single sine-wave superimposed on rated load (JEDEC Method) | IFSM             | 200          |         |         |         |         |         |         | A                  |
| Rating for fusing ( t<8.3ms)                                                          | I <sup>2</sup> t | 166          |         |         |         |         |         |         | A <sup>2</sup> sec |
| Typical thermal resistance per element(1)                                             | ReJA             | 10.0         |         |         |         |         |         |         | °C / W             |
| Operating junction and storage temperature range                                      | TJ, TSTG         | -55 to + 150 |         |         |         |         |         |         | °C                 |

### Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified. Resistive or Inductive load, 60Hz.  
For Capacitive load derate by 20 %.

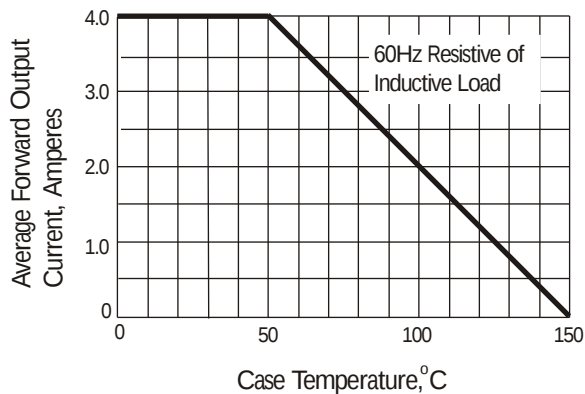
| Parameter                                                                                 | Symbol | KBL 4005   | KBL 401 | KBL 402 | KBL 404 | KBL 406 | KBL 408 | KBL 410 | Unit |
|-------------------------------------------------------------------------------------------|--------|------------|---------|---------|---------|---------|---------|---------|------|
| Maximum instantaneous forward voltage drop per leg at 4.0A                                | VF     | 1.1        |         |         |         |         |         |         | V    |
| Maximum DC reverse current at rated TA =25°C<br>DC blocking voltage per element TA =125°C | IR     | 10<br>1000 |         |         |         |         |         |         | μA   |

**Notes:** (1)Thermal resistance from Junction to Ambient on P.C.board mounting.

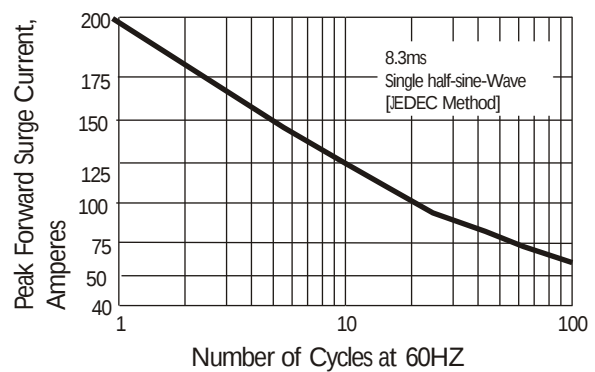
## Rating and Characteristic Curves ( $T_A = 25^{\circ}\text{C}$ Unless otherwise noted )

### KBL4005 thru KBL410

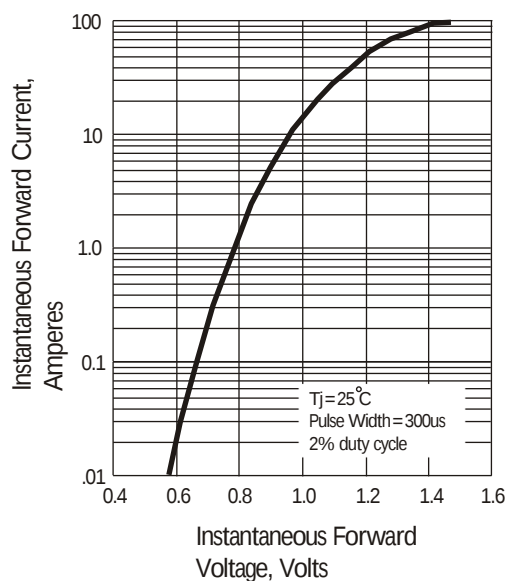
**Fig. 1 Derating Curve for Output Rectified Current**



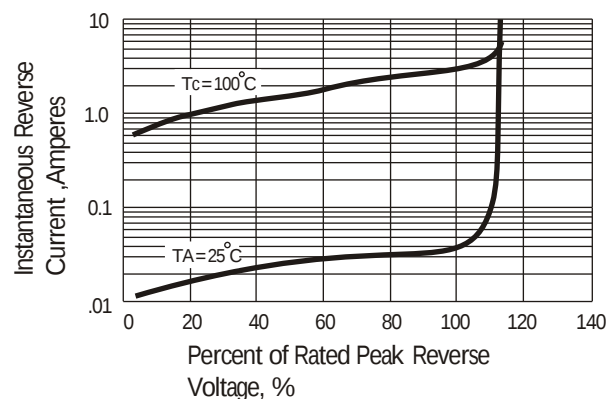
**Fig. 2 Maximum Non-repetitive Peak Forward Surge Current**



**Fig. 3 Typical Instantaneous Forward Characteristics**



**Fig. 4 Typical Reverse Characteristics at  $T_J = 25^{\circ}\text{C}$**



**Fig. 5 Typical Junction Capacitance**

