Vishay General Semiconductor

# Single-Phase Bridge Rectifier



PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub> 4 A								
V <sub>RRM</sub>	50 V to 1000 V							
I <sub>FSM</sub>	200 A							
I <sub>R</sub>	5 μΑ							
V <sub>F</sub>	1.1 V							
T <sub>J</sub> max.	150 °C							

### FEATURES

- UL recognition file number E54214
- · Ideal for printed circuit boards
- · High surge current capability
- High case dielectric strength of 1500 V<sub>RMS</sub>
  RoHS
  COMPLIANT
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### **TYPICAL APPLICATIONS**

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, SMPS, adapter, audio equipment, and home appliances applications.

### **MECHANICAL DATA**

#### Case: KBL

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Silver plated leads, solderable per J-STD-002 and JESD22-B102 E4 suffix for consumer grade

**Polarity:** As marked on body

**Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max. **Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	KBL005	KBL01	KBL02	KBL04	KBL06	KBL08	KBL10	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward current at $T_A = 50 \ ^{\circ}C$	I <sub>F(AV)</sub>	4.0							А
Peak forward surge current single sine-wave superimposed on rated load	I <sub>FSM</sub>	200						А	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	G - 50 to + 150					°C		

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	KBL005	KBL01	KBL02	KBL04	KBL06	KBL08	KBL10	UNIT
Maximum instantaneous forward drop per diode	4.0 A	V <sub>F</sub>	1.1						V	
Maximum DC reverse current at rated DC blocking voltage per diode	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	5.0 1.0						μA mA	



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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \degree C$ unless otherwise noted)								
PARAMETER	SYMBOL KBL005 KBL01 KBL02 KBL04 KBL06 KBL08 KBL10 UNIT						UNIT	
Typical thermal resistance	R <sub>θJA</sub> R <sub>θJL</sub>	19 <sup>(1)</sup> 2.4 <sup>(2)</sup>					°C/W	

Notes:

- (1) Thermal resistance from junction to ambient with units mounted on 3.0 x 3.0 x 0.11" thick (7.5 x 7.5 x 0.3 cm) aluminum plate
- (2) Thermal resistance from junction to lead with units mounted on P.C.B. at 0.375" (9.5 mm) lead length and 0.5 x 0.5" (12 x 12 mm) copper pads

ORDERING INFORMATION (Example)								
PREFERRED P/N	FERRED P/N UNIT WEIGHT (g) PREFERRED PACKAGE CODE BASE QUANTITY DELIVERY MODE							
KBL06-E4/51	6.0	51	300	Anti-static PVC tray				

#### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

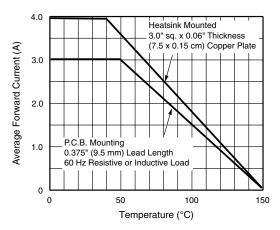


Figure 1. Derating Curve Output Rectified Current

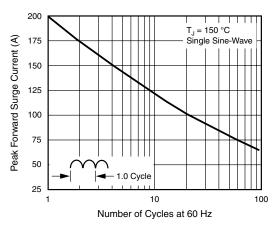


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

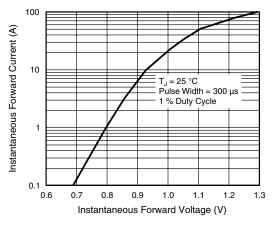


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

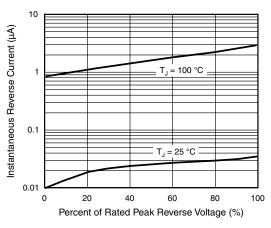


Figure 4. Typical Reverse Leakage Characteristics Per Diode



# KBL005 thru KBL10

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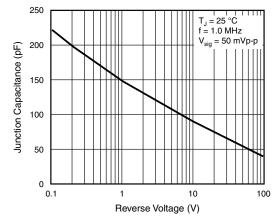
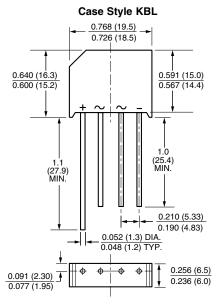


Figure 5. Typical Junction Capacitance Per Diode

#### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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