

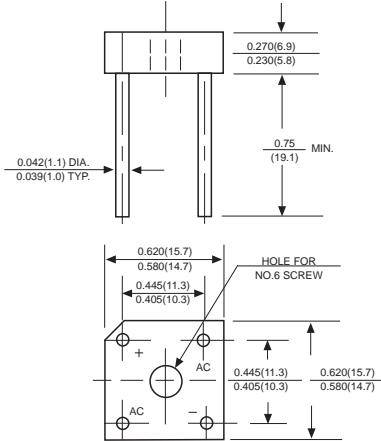


# KBPC6005 THRU KBPC610

## SILICON BRIDGE RECTIFIERS

Reverse Voltage - 50 to 1000 Volts Forward Current - 6.0 Amperes

### BR-6



Dimensions in inches and (millimeters)

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Ideal for printed circuit boards
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 260°C/10 seconds, 5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** Molded plastic body

**Terminals:** Plated leads solderable per MIL-STD-750, Method 2026

**Polarity:** Polarity symbols marked on case

**Mounting:** Thru hole for #6 serew, 5in.-lbs. torque max.

**Weight:** 0.13 ounce, 3.66 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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%.

MDD Catalog Number	SYMBOLS	KBPC 6005	KBPC 601	KBPC 602	KBPC 604	KBPC 606	KBPC 608	KBPC 610	UNITS	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	VOLTS	
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	VOLTS	
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	VOLTS	
Maximum average forward output rectified current at $T_A=50^\circ\text{C}$ (Note 1) and $T_A=25^\circ\text{C}$ (Note 2)	$I_{(AV)}$	6.0						3.0		Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	125								Amps
Rating for Fusing( $t < 8.3\text{ms}$ )	$I^2t$	64								A <sup>2</sup> s
Maximum instantaneous forward voltage drop per bridge element at 3.0A	$V_F$	1.0								Volts
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ and $T_A=100^\circ\text{C}$	$I_R$	10						1.0		$\mu\text{A}$ mA
Typical Junction Capacitance (Note 1)	$C_J$	60								pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	8.0								$^\circ\text{C}/\text{W}$
Operating junction temperature range	$T_J$	-55 to +125								$^\circ\text{C}$
storage temperature range	$T_{STG}$	-55 to +150								$^\circ\text{C}$

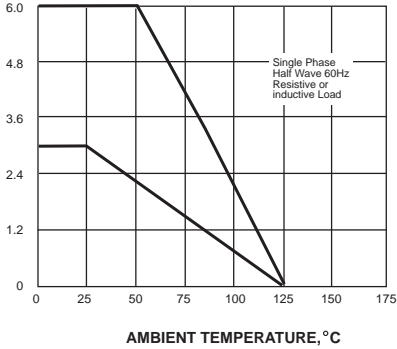
#### NOTES:

- Unit mounted on 6.0" x 5.5" x 0.11" thick (15x14x0.3cm) Al. plate.
- Unit mounted on P.C. board with 0.47" x 0.47" (12x12mm) copper pads, 0.375" (9.5mm) lead length.

# RATINGS AND CHARACTERISTIC CURVES KBPC6005 THRU KBPC610

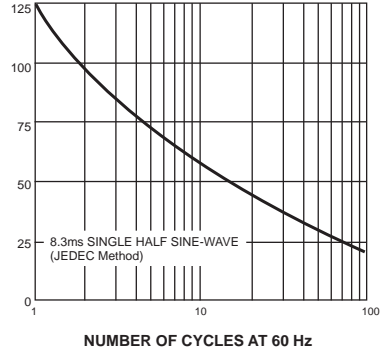
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



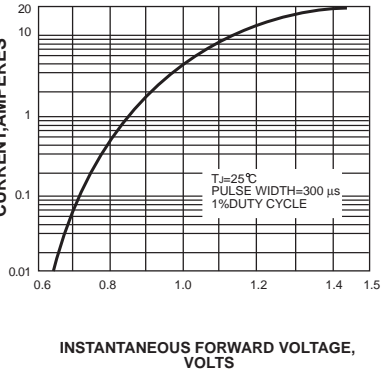
PEAK FORWARD SURGE CURRENT,  
AMPERES

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



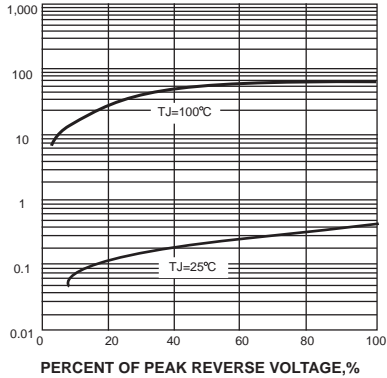
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



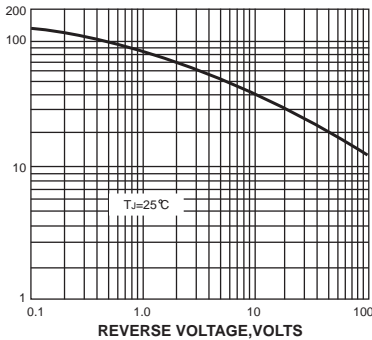
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
 $^{\circ}\text{C}/\text{W}$

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

