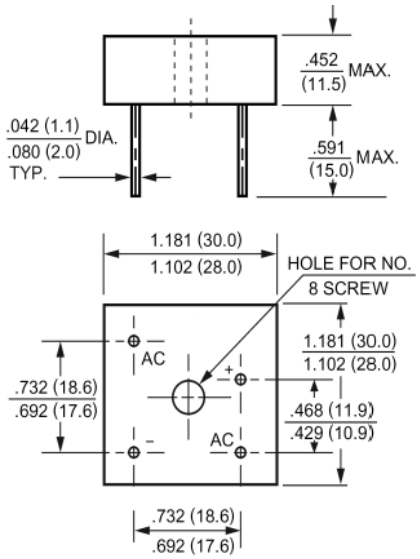
KBPC50005W THRU KBPC5010W

HIGH CURRENT SINGLE-PHASE SILICON BRIDGE RECTIFIERS

REVERSE VOLTAGE: 50 to 1000 VOLTS
FORWARD CURRENT: 50 AMPERES

KBPCW



Dimensions in inches and (mm)

Features

- Electrically isolated metal case for maximum heat dissipation
- Surge overload ratings to 500 A
- Low power loss, high efficiency
- Low reverse leakage current
- Case to terminal isolation voltage 2500 V
- UL recognized file # E-216968

Mechanical data

- Metal or molded plastic with heatsink integrally mounted in the bridge encapsulation
- Mounting Position: Any

Absolute Maximum Ratings and Characteristics

Rating at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	KBPC 50005W	KBPC 5001W	KBPC 5002W	KBPC 5004W	KBPC 5006W	KBPC 5008W	KBPC 5010W	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at T_C = 55 °C	$I_{(AV)}$	50							A
Peak Forward Surge Current, 8.3 ms Single Half-Sine -Wave superimposed on rated load (JEDEC Method)	I_{FSM}	400							A
Maximum Forward Voltage at 25 A DC and 25 °C	V_F	1.2							V
Maximum Reverse Current at T_A = 25 °C at Rated DC Blocking Voltage T_A = 125 °C	I_R	10 1000							μA
Typical Junction Capacitance [1]	C_J	300							pF
Typical Thermal Resistance [2]	$R_{\theta JC}$	2.6							°C/W
Operating and Storage Temperature Range	T_J,T_S	-55 to +150							°C

[1] Measured at 1 MHz and applied reverse voltage of 4 VDC.
[2] Thermal resistance from junction to case per leg.

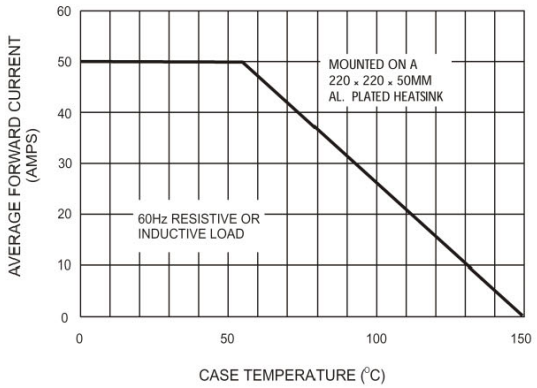


Figure 1. Forward Current Derating Curve

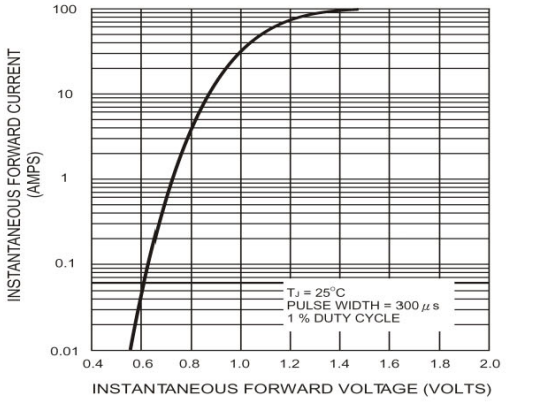


Figure 2. Typical Instantaneous Forward Characteristics Per Brdige Element

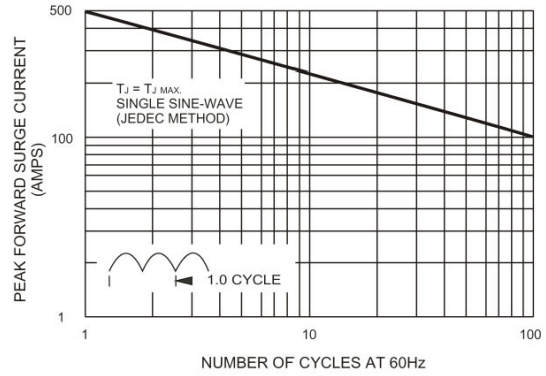


Figure 3. Maximum Non-repetitive Peak Forward Surge Current Per Bridge Element

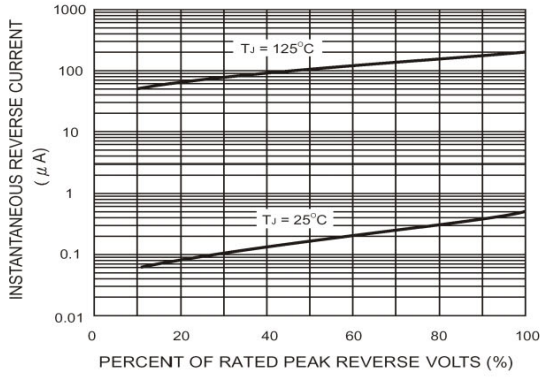


Figure 4. Typical Reverse Leakage Characteristics Per Bridge Element

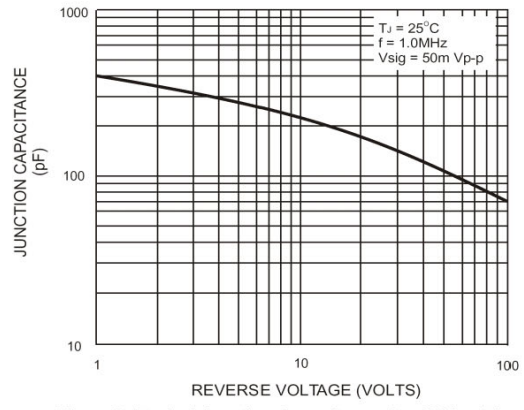


Figure 5. Typical Junction Capacitance Per Bridge Element

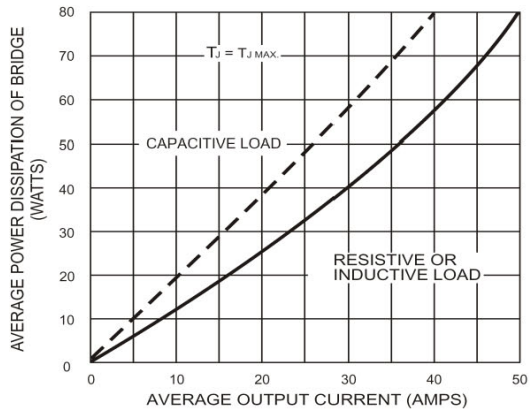


Figure 6. Maximum Power Dissipation