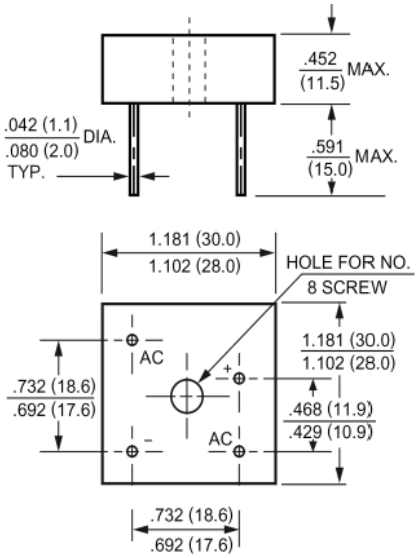
# KBPC50005W THRU KBPC5010W

## 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<br>at Rated DC Blocking Voltage $T_A$ = 125 °C | $I_R$ | 10<br>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 | $T_J$,$T_{Stg}$ | -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.

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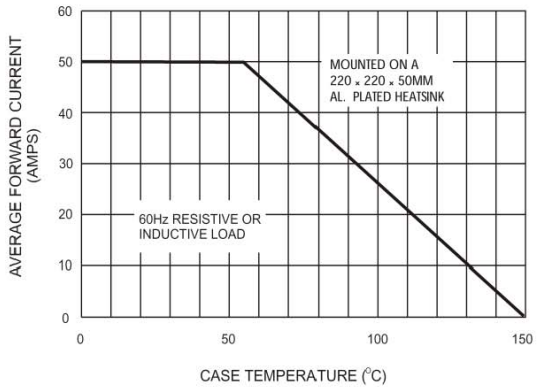


Figure 1. Forward Current Derating Curve

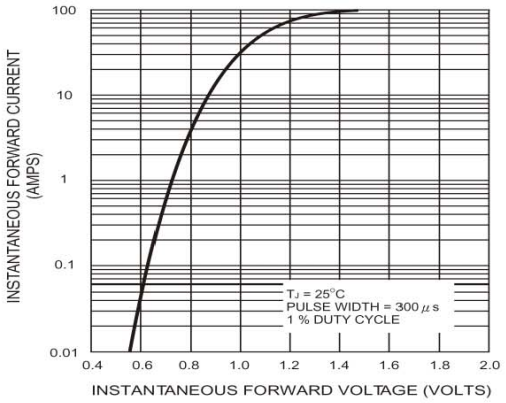


Figure 2. Typical Instantaneous Forward Characteristics Per Brdige Element

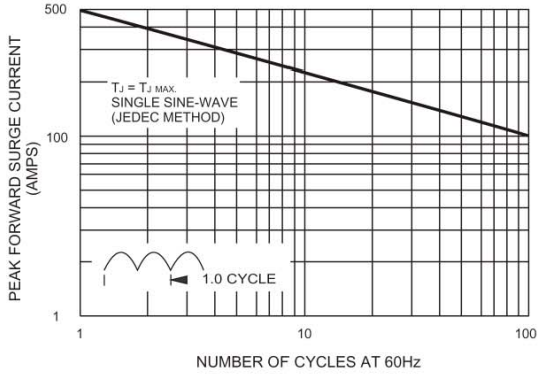


Figure 3. Maximum Non-repetitive Peak Forward Surge Current Per Bridge Element

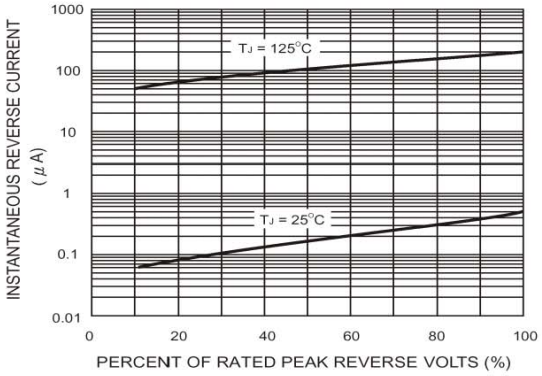


Figure 4. Typical Reverse Leakage Characteristics Per Bridge Element

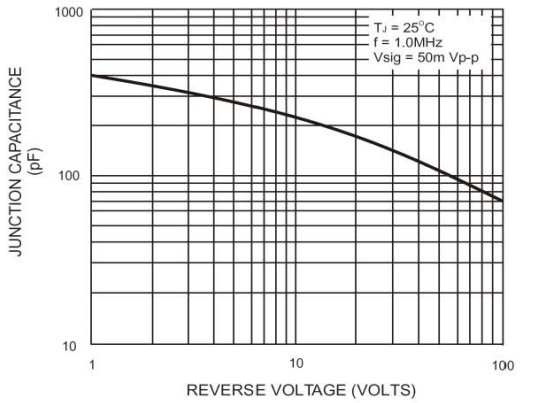


Figure 5. Typical Junction Capacitance Per Bridge Element

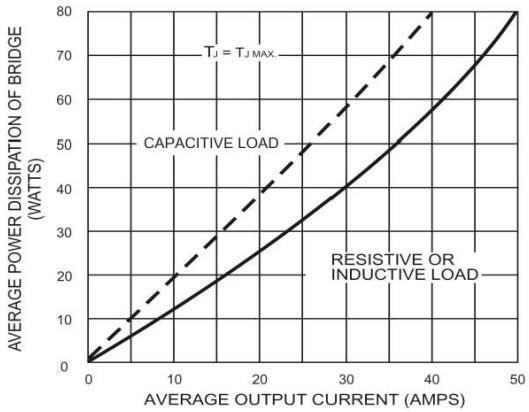


Figure 6. Maximum Power Dissipation