

# KBPC10005~KBPC1010

## SINGLE-PHASE SILICON BRIDGE RECTIFIERS

REVERSE VOLTAGE: 50 V to 1000 V

FORWARD CURRENT: 10 A

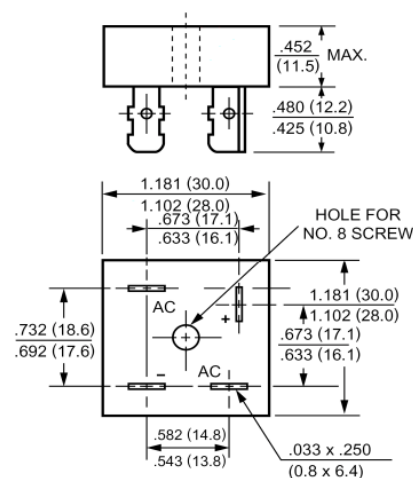
### Features

- Reliable low cost construction
- Ideal for printed circuit board
- Low forward voltage drop
- Low reverse leakage current
- High surge current capability

### Mechanical Data

- Case: KBPC

KBPC



Dimensions in inches and (millimeters)

### Absolute Maximum Ratings and Characteristics

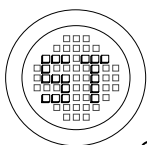
Rating at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter  | Symbol          | KBPC<br>10005 | KBPC<br>1001 | KBPC<br>1002 | KBPC<br>1004 | KBPC<br>1006 | KBPC<br>1008 | KBPC<br>1010 | 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 $T_C = 50\text{ }^{\circ}\text{C}$  | $I_{(AV)}$      | 10            |              |              |              |              |              |              | A                    |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC)                                    | $I_{FSM}$       | 200           |              |              |              |              |              |              | A                    |
| Maximum Forward Voltage at 5 A DC and 25 °C  | $V_F$           | 1.2           |              |              |              |              |              |              | V                    |
| Maximum Reverse Current at $T_A = 25\text{ }^{\circ}\text{C}$ at Rated DC Blocking Voltage $T_A = 100\text{ }^{\circ}\text{C}$ | $I_R$           | 10<br>500     |              |              |              |              |              |              | $\mu\text{A}$        |
| Typical Junction Capacitance <sup>1)</sup>   | $C_J$           | 200           |              |              |              |              |              |              | pF                   |
| Typical Thermal Resistance <sup>2)</sup>   | $R_{\theta JA}$ | 25            |              |              |              |              |              |              | $^{\circ}\text{C/W}$ |
| Typical Thermal Resistance <sup>3)</sup>   | $R_{\theta JC}$ | 5             |              |              |              |              |              |              | $^{\circ}\text{C/W}$ |
| Operating and Storage Temperature Range  | $T_J, T_S$      | - 55 to + 125 |              |              |              |              |              |              | $^{\circ}\text{C}$   |

<sup>1)</sup> Measured at 1 MHz and applied reverse voltage of 4 VDC.

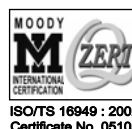
<sup>2)</sup> Unit mounted on 8.6 X 8.6 X 0.24" thick (22 X 22 X 0.6 cm) Al, Plate.

<sup>3)</sup> Unit mounted on P.C.B. at 0.375" (9.5 mm) lead length with 0.5 x 0.5" (12 x 12 mm) copper pads.



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Semtech International Holdings Limited, a company  
listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103

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Certificate No. 0506098

Dated : 16/07/2006 H

## RATINGS AND CHARACTERISTIC CURVES

FIG.1- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER BRIDGE ELEMENT

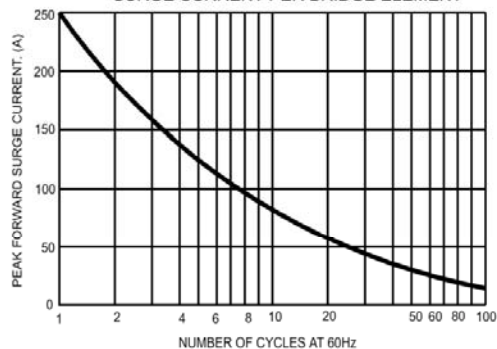


FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

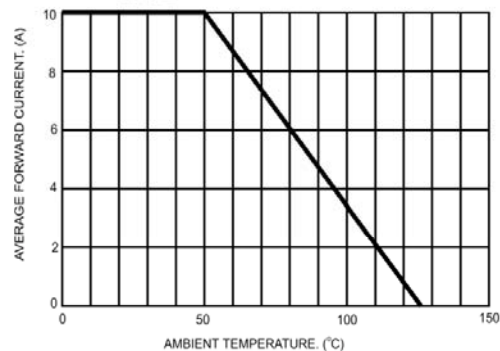


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER BRIDGE ELEMENT

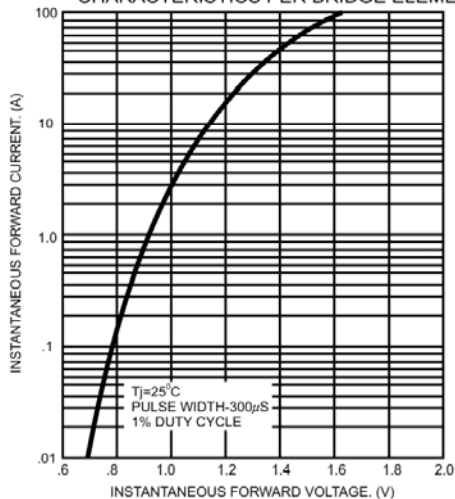
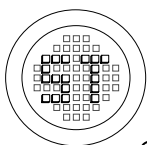
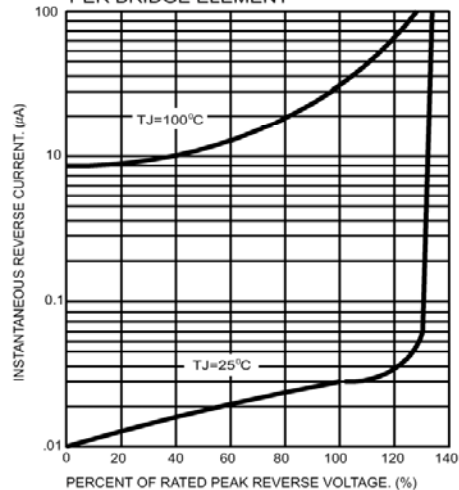
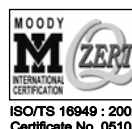


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER BRIDGE ELEMENT



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