

## Single Phase Silicon Bridge Rectifier

$V_{RRM} = 50\text{ V} - 400\text{ V}$

$I_O = 25\text{ A}$

### Features

- High efficiency
- Silicon junction
- Metal case
- Types from 50 V to 400 V  $V_{RRM}$
- Not ESD Sensitive

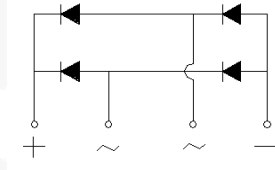
### Mechanical Data

Case: Mounted in the bridge encapsulation

Mounting: Hole for #10 screw

Polarity: Marked on case

KBPC-T/W Package



**Maximum ratings at  $T_c = 25\text{ }^\circ\text{C}$ , unless otherwise specified (KBPCXXXXT uses KBPC-T package while KBPCXXXXW uses KBPC-W package)**

| Parameter                       | Symbol    | Conditions | KBPC25005T/W | KBPC2501T/W | KBPC2502T/W | KBPC2504T/W | Unit             |
|---------------------------------|-----------|------------|--------------|-------------|-------------|-------------|------------------|
| Repetitive peak reverse voltage | $V_{RRM}$ |            | 50           | 100         | 200         | 400         | V                |
| RMS reverse voltage             | $V_{RMS}$ |            | 35           | 70          | 140         | 280         | V                |
| DC blocking voltage             | $V_{DC}$  |            | 50           | 100         | 200         | 400         | V                |
| Operating temperature           | $T_j$     |            | -55 to 150   | -55 to 150  | -55 to 150  | -55 to 150  | $^\circ\text{C}$ |
| Storage temperature             | $T_{stg}$ |            | -55 to 150   | -55 to 150  | -55 to 150  | -55 to 150  | $^\circ\text{C}$ |

### Electrical characteristics at $T_c = 25\text{ }^\circ\text{C}$ , unless otherwise specified

Single phase, half sine wave, 60 Hz, resistive or inductive load

For capacitive load derate current by 20%

| Parameter   | Symbol    | Conditions                        | KBPC25005T/W | KBPC2501T/W | KBPC2502T/W | KBPC2504T/W | Unit          |
|---|-----------|-----------------------------------|--------------|-------------|-------------|-------------|---------------|
| Maximum average forward rectified current                       | $I_O$     | $T_c = 55\text{ }^\circ\text{C}$  | 25           | 25          | 25          | 25          | A             |
| Peak forward surge current                                      | $I_{FSM}$ | 8.3 ms half sine-wave             | 350          | 350         | 350         | 350         | A             |
| Maximum instantaneous forward voltage per leg                   | $V_F$     | $I_F = 12.5\text{ A}$             | 1.1          | 1.1         | 1.1         | 1.1         | V             |
| Maximum DC reverse current at rated DC blocking voltage per leg | $I_R$     | $T_c = 25\text{ }^\circ\text{C}$  | 5            | 5           | 5           | 5           | $\mu\text{A}$ |
|   |           | $T_c = 100\text{ }^\circ\text{C}$ | 500          | 500         | 500         | 500         |               |
| Typical junction capacitance <sup>1</sup>                       | $C_j$     |                                   | 300          | 300         | 300         | 300         | pF            |

### Thermal characteristics

|   |                 |  |     |     |     |     |                    |
|---|-----------------|--|-----|-----|-----|-----|--------------------|
| Typical thermal resistance <sup>2</sup> | $R_{\theta JC}$ |  | 1.9 | 1.9 | 1.9 | 1.9 | $^\circ\text{C/W}$ |
|---|-----------------|--|-----|-----|-----|-----|--------------------|

<sup>1</sup> - Measured at 1 MHz and applied reverse voltage of 4.0 V D.C.

<sup>2</sup> - Device mounted on 300 mm x 300 mm x 1.6 mm Cu plate heatsink

FIG.1 - TYPICAL FORWARD CURRENT DERATING CURVE

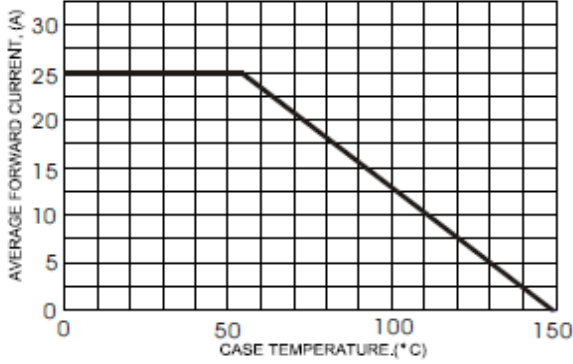


FIG.2 - TYPICAL FORWARD CHARACTERISTICS

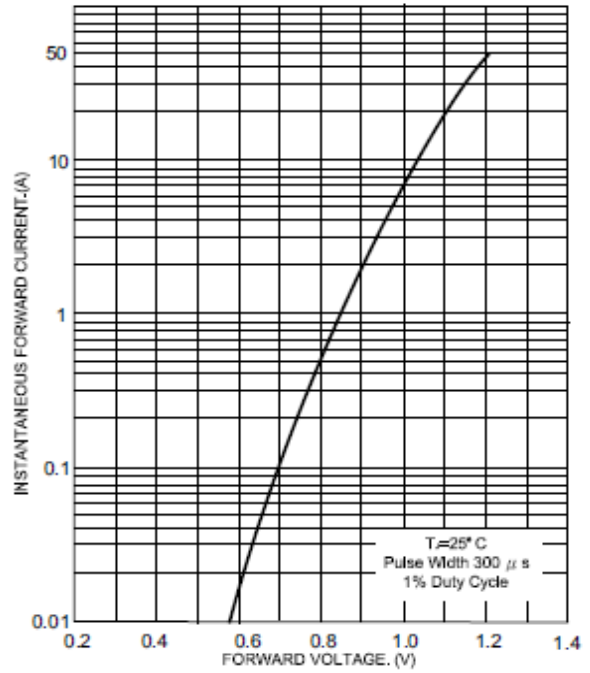


FIG.3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

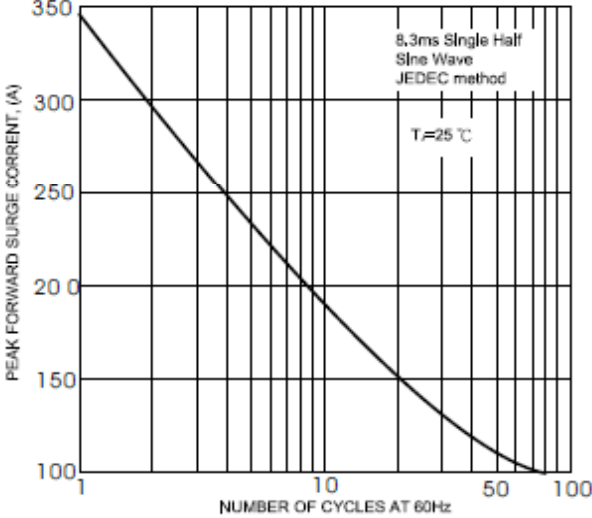


FIG.5 - TYPICAL REVERSE CHARACTERISTICS

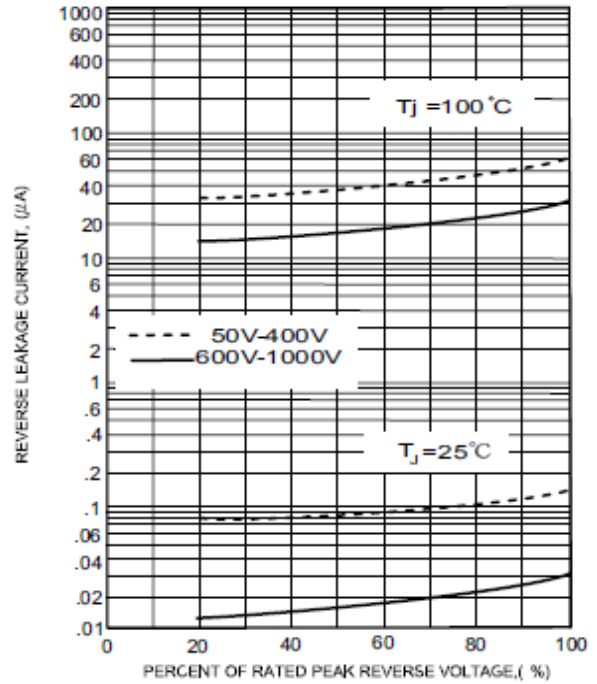
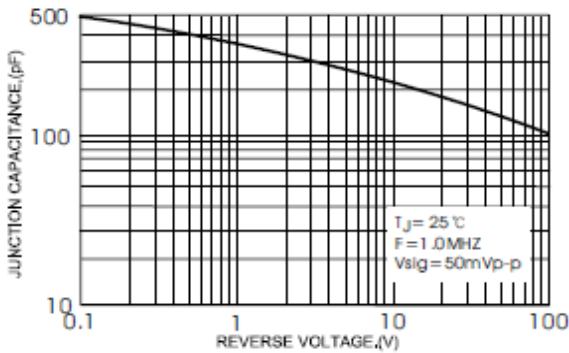
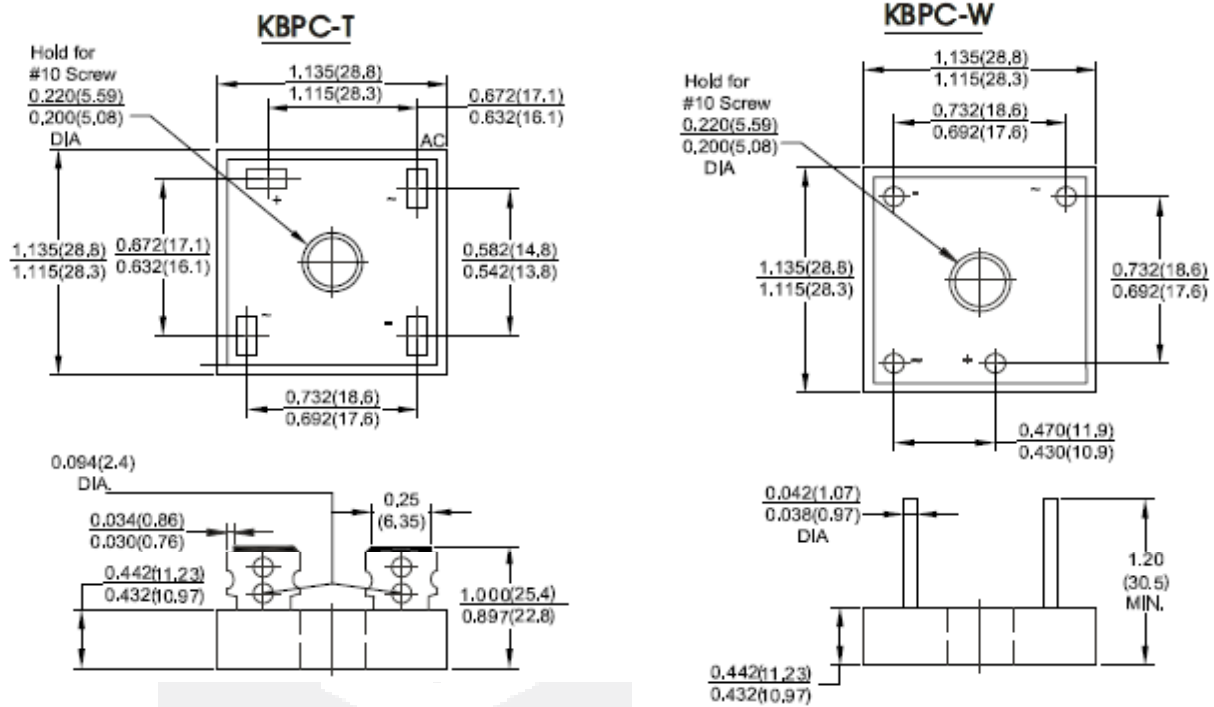


FIG.4 - TYPICAL JUNCTION CAPACITANCE

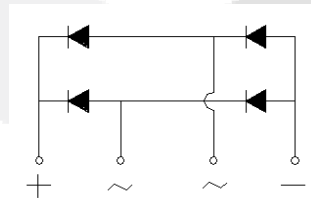


## Package dimensions and terminal configuration

Product is marked with part number and terminal configuration.



Dimensions in inches and (millimeters)



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