

# KBP3005-S5.5 THRU KBP310-S5.5

## GLASS PASSIVATED BRIDGE RECTIFIERS

Reverse Voltage - 50 to 1000 V

Forward Current - 3.0 A

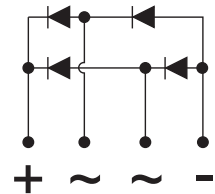
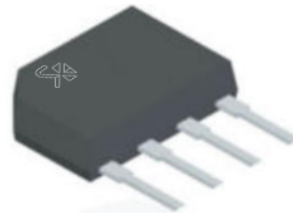
## KBP-S5.5

### FEATURES

- Rating to 1000V PRV
- Ideal for printed circuit board
- Reliable low cost construction utilizing molded plastic technique
- The plastic material has UL flammability classification 94V#0

### MECHANICAL DATA

- Polarity : As marked on body
- Weight : 0.05 ounces, 1.52 grams
- Mounting position : Any

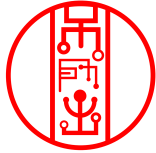


### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

| CHARACTERISTICS                                                                                            | SYMBOL                                                | KBP<br>3005<br>-S5.5 | KBP<br>301<br>-S5.5 | KBP<br>302<br>-S5.5 | KBP<br>304<br>-S5.5 | KBP<br>306<br>-S5.5 | KBP<br>308<br>-S5.5 | KBP<br>310<br>-S5.5 | 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 @TC=105°C<br>(With heatsink)<br>(Without heatsink)               | $I_{(AV)}$                                            | 3.0<br>1.9           |                     |                     |                     |                     |                     |                     | A                |
| Peak Forward Surge Current<br>8.3ms single half sine-wave                                                  | $I_{FSM}$                                             | 55                   |                     |                     |                     |                     |                     |                     | A                |
| Peak Forward Surge Current<br>1.0ms single half sine-wave                                                  | $I_{FSM}$                                             | 110                  |                     |                     |                     |                     |                     |                     | A                |
| Maximum Forward Voltage at 3.0A DC                                                                         | $V_F$                                                 | 1.1                  |                     |                     |                     |                     |                     |                     | V                |
| Maximum DC Reverse Current at $T_a = 25^\circ\text{C}$<br>rated Blocking Voltage $T_a = 125^\circ\text{C}$ | $I_R$                                                 | 5<br>500             |                     |                     |                     |                     |                     |                     | uA               |
| $I^2t$ Rating for fusing (3ms $\leq t \leq$ 8.3ms)                                                         | $I^2t$                                                | 17.5                 |                     |                     |                     |                     |                     |                     | A <sup>2</sup> S |
| Typical Junction Capacitance per element<br>(Note 1)                                                       | $C_j$                                                 | 60                   |                     |                     |                     |                     |                     |                     | pF               |
| Typical thermal resistance<br>(Unit mounted on 30mmx30mmx1mm<br>Copper plate heat sink.)                   | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 30<br>10<br>12       |                     |                     |                     |                     |                     |                     | °C/W             |
| Typical thermal resistance (without heat sink)                                                             | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 40<br>12<br>18       |                     |                     |                     |                     |                     |                     | °C/W             |
| Operating Junction Temperature Range                                                                       | $T_j$                                                 | -55 ~ +150           |                     |                     |                     |                     |                     |                     | °C               |
| Storage Temperature Range                                                                                  | $T_{stg}$                                             | -55 ~ +150           |                     |                     |                     |                     |                     |                     | °C               |

Note: (1) Measured at 1.0MHz and applied reverse voltage of 4.0V DC.



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Fig.1 Forward Current Derating Curve

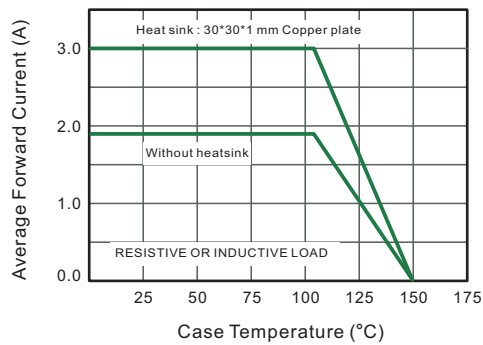


Fig.2 Typical Instantaneous Reverse Characteristics

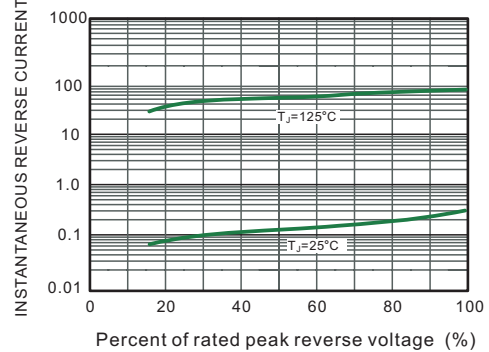


Fig.3 Typical Forward Characteristic

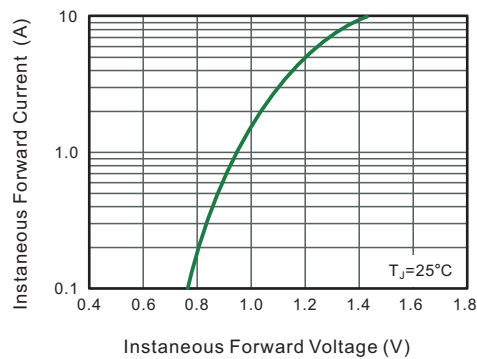


Fig.4 Typical Junction Capacitance

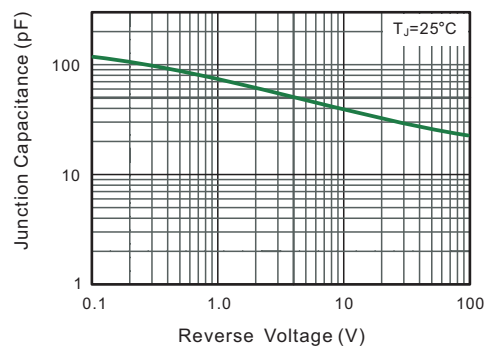


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

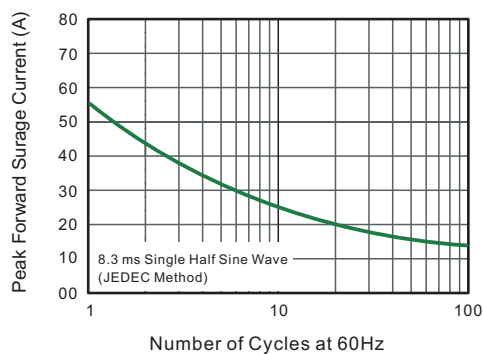
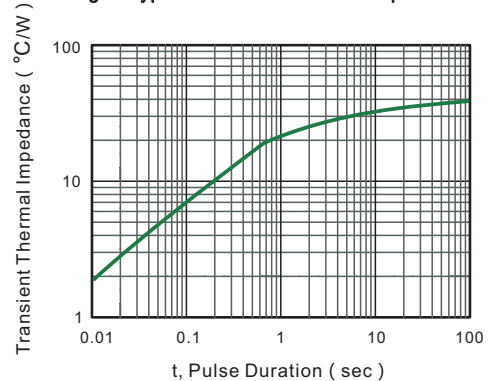
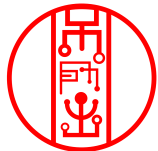


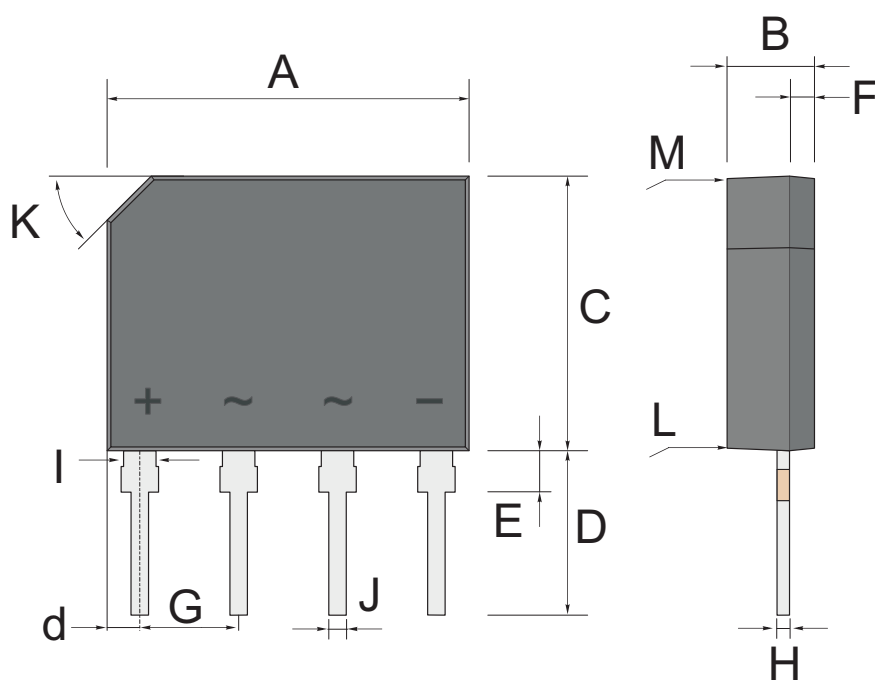
Fig.6- Typical Transient Thermal Impedance





# KBP3005-S5.5 THRU KBP310-S5.5

## KBP-S5.5 Package Outline Dimensions



Unit : mm

| KBP-S5.5                     |              |       |
|------------------------------|--------------|-------|
| DIM.                         | MIN.         | MAX.  |
| A                            | 14.25        | 14.75 |
| B                            | 3.35         | 3.65  |
| C                            | 10.20        | 10.60 |
| D                            | 5.0          | 6.0   |
| d                            | 1.40         | 1.70  |
| E                            | 1.80         | 2.20  |
| F                            | 0.80         | 1.10  |
| G                            | 3.56         | 4.06  |
| H                            | 0.35         | 0.55  |
| I                            | 1.22         | 1.42  |
| J                            | 0.76         | 0.86  |
| K                            | 2.7X45°(typ) |       |
| L                            | #            | 3°    |
| M                            | #            | 2°    |
| All dimensions in millimeter |              |       |