**KBPC5000 - KBPC5010**

**PRV : 50 - 1000 Volts**
**Io : 50 Amperes**

**FEATURES :**
* High case dielectric strength
* High surge current capability
* High reliability
* High efficiency
* Low reverse current
* Low forward voltage drop
* Pb / RoHS Free

**MECHANICAL DATA :**
* Case : Metal Case
* Epoxy : UL94V-0 rate flame retardant
* Terminals : plated .25" (6.35 mm). Faston
* Polarity : Polarity symbols marked on case
* Mounting position : Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer efficiency.
* Weight : 17.1 grams

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**
Ratings 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%.

<table>
<thead>
<tr>
<th>RATING</th>
<th>SYMBOL</th>
<th>KBPC 5000</th>
<th>KBPC 5001</th>
<th>KBPC 5002</th>
<th>KBPC 5004</th>
<th>KBPC 5006</th>
<th>KBPC 5008</th>
<th>KBPC 5010</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Recurrent Peak Reverse Voltage</td>
<td>VRRM</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum RMS Voltage</td>
<td>VRMS</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC Blocking Voltage</td>
<td>VDC</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Average Forward Current Tc = 55°C</td>
<td>IF(AV)</td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak Forward Surge Current Single half sine wave Superimposed on rated load (JEDEC Method)</td>
<td>IFSM</td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Current Squared Time at t &lt; 8.3 ms.</td>
<td>i²t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>660</td>
<td></td>
<td></td>
<td>A²S</td>
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<tr>
<td>Maximum Forward Voltage per Diode at If=25 A</td>
<td>Vf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1</td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC Reverse Current Ta = 25 °C</td>
<td>IR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td>μA</td>
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<tr>
<td>at Rated DC Blocking Voltage Ta = 100 °C</td>
<td>IR(H)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td></td>
<td></td>
<td>μA</td>
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<tr>
<td>Typical Thermal Resistance (Note 1)</td>
<td>RθJC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.0</td>
<td></td>
<td></td>
<td>°C/W</td>
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<tr>
<td>Operating Junction Temperature Range</td>
<td>TJ</td>
<td>- 40 to + 150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
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<tr>
<td>Storage Temperature Range</td>
<td>TSTG</td>
<td>- 40 to + 150</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**Note :**
(1) Thermal resistance from Junction to Case with units mounted on a 9"x5"x4.6" (22.9x12.7x11.7 cm) Al-Finned Heatsink.

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RATING AND CHARACTERISTIC CURVES (KBPC5000 - KBPC5010)

**FIG. 1 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT**

- **CASE TEMPERATURE, (°C)** vs **AVERAGE FORWARD OUTPUT CURRENT, AMPERES**
- **HEAT-SINK MOUNTING, Tc**
  - 9” x 5” x 4.6” THK. (22.9 x 12.7 x 11.7cm)
  - Al.-Finned

**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

- **NUMBER OF CYCLES AT 60Hz** vs **PEAK FORWARD SURGE CURRENT, AMPERES**
- **TJ = 50 °C**
- **8.3 ms SINGLE HALF SINE WAVE JEDEC METHOD**

**FIG. 3 - TYPICAL FORWARD CHARACTERISTICS PER DIODE**

- **FORWARD VOLTAGE, VOLTS** vs **FORWARD CURRENT, AMPERES**
- **PULSE WIDTH = 300 µs**
- **1% DUTY CYCLE**
- **TJ = 25 °C**

**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS PER DIODE**

- **PERCENT OF RATED REVERSE VOLTAGE, (%)** vs **REVERSE CURRENT, MICROAMPERES**
- **TJ = 100 °C**
- **TJ = 25 °C**