SINGLE-PHASE GLASS PASSIVATED
SILICON BRIDGE RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts  CURRENT 1.0 Ampere

FEATURES
* Good for automation insertion
* Surge overload rating - 40 amperes peak
* Ideal for printed circuit board
* Reliable low cost construction utilizing molded glass passivated device
* Polarity symbols molded on body
* Mounting position: Any
* Weight: 1.0 gram

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%.

MAXIMUM RATINGS (At Ta = 25°C unless otherwise noted)

<table>
<thead>
<tr>
<th>RATINGS</th>
<th>SYMBOL</th>
<th>BDB101</th>
<th>BDB102</th>
<th>BDB103</th>
<th>BDB104</th>
<th>BDB105</th>
<th>BDB106</th>
<th>BDB107</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>
</tr>
<tr>
<td>Maximum RMS Bridge Input 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>
</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>
</tr>
<tr>
<td>Maximum Average Forward Output Current at Ta = 40°C</td>
<td>Io</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)</td>
<td>IFSM</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Current Squared Time</td>
<td>I²T</td>
<td>6.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Thermal Resistance from junction to case</td>
<td>RJ,L</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Thermal Resistance from junction to ambient</td>
<td>RJ,A</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating and Storage Temperature Range</td>
<td>T,J,TSTG</td>
<td>-55 to +150</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

ELECTRICAL CHARACTERISTICS (At Ta = 25°C unless otherwise noted)

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>SYMBOL</th>
<th>BDB101</th>
<th>BDB102</th>
<th>BDB103</th>
<th>BDB104</th>
<th>BDB105</th>
<th>BDB106</th>
<th>BDB107</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Forward Voltage Drop per Bridge Element at 1.0A DC</td>
<td>VF</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Forward Voltage Drop per Bridge</td>
<td>@Ta = 25°C</td>
<td>IR</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC Blocking Voltage per element</td>
<td>@Ta = 25°C</td>
<td>0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC Blocking Voltage per element</td>
<td>@Ta = 125°C</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tbody>
</table>

Note: “Fully ROHS compliant”, “100% Sn plating (Pb-free)”.
RATING AND CHARACTERISTIC CURVES (BDB101 THRU BDB107)

**FIG. 1 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**

- Peak Forward Surge Current, (A)
- Number of Cycles at 60Hz
- 8.3ms Single Half Sine-Wave (JEDEC Method)

**FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE**

- Average Forward Current, (A)
- Ambient Temperature, (°C)
- Single Phase Half Wave 60Hz Inductive or Resistive Load

**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

- Instantaneous Forward Current, (A)
- Instantaneous Forward Voltage, (V)
- Pulse Width = 300us
- 1% Duty Cycle
- TJ = 25°C

**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**

- Instantaneous Reverse Current, (μA)
- Percent of Rated Peak Reverse Voltage, (%)
- TJ = 25°C
Attachment information about BDB10X

1. Internal Circuit

```
+ --- +
|   |   |
|   |   |
|   |   |
|   |   |
  - - -
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2. Marking on the body

```
- +
|   |
|   |
|   |
|   |
  + +
```

Part No. ➔ DB10X ➔ Rectron Logo
Plant-code ➔ Voltage-code
Year-code ➔ Week-code

1-------50V
2-------100V
3-------200V
4-------400V
5-------600V
6-------1000V

3. Items marked on the inner box and carton

3.1 On the box (for –C)

CUSTOMER
TYPE
LOT NO.
QUANTITY
Q.A.
DATE

3.2 On the carton

CUSTOMER
TYPE
QUANTITY
LOT NO.
REMARK
### Packaging of Diode and Bridge Rectifiers

<table>
<thead>
<tr>
<th>PACKAGE</th>
<th>PACKING CODE</th>
<th>EA PER BOX</th>
<th>INNER BOX SIZE (mm)</th>
<th>CARTON SIZE (mm)</th>
<th>EA PER CARTON</th>
<th>WEIGHT (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDB</td>
<td>-C</td>
<td>2,000</td>
<td>450<em>140</em>84</td>
<td>464<em>305</em>283</td>
<td>12,000</td>
<td>14.18</td>
</tr>
</tbody>
</table>
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