SB320 THRU SB3100

SCHOTTKY BARRIER RECTIFIERS
Reverse Voltage – 20 to 100 Volts
Forward Current – 3.0 Amperes

Features
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0.
- Metal silicon junction, majority carrier conduction.
- Guard ring for overvoltage protection.
- Low power loss, high efficiency.
- High current capability, Low forward voltage drop.
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- High temperature soldering guaranteed: 250°C/10 seconds at terminals, 0.375”(9.5mm) lead length, 5lbs.(2.3kg) tension.

Mechanical Data
- Case: JEDEC DB-201 AD molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any

Absolute Maximum Ratings and Characteristics
Rating at 25°C ambient temperature unless otherwise specified. Single-phase, half wave, resistive or inductive load.
For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Symbols</th>
<th>SB 320</th>
<th>SB 330</th>
<th>SB 340</th>
<th>SB 350</th>
<th>SB 360</th>
<th>SB 380</th>
<th>SB 3100</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>$V_{BRM}$</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>80</td>
<td>100</td>
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<tr>
<td>Maximum RMS voltage</td>
<td>$V_{RMS}$</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>35</td>
<td>42</td>
<td>57</td>
<td>71</td>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>$V_{DC}$</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Maximum average forward rectified current 0.375”(9.5mm) lead length @ $T_A$ = 75°C</td>
<td>$I_{AV}$</td>
<td>3</td>
<td>A</td>
<td></td>
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<tr>
<td>Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)</td>
<td>$I_{FSM}$</td>
<td>80</td>
<td>A</td>
<td></td>
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<tr>
<td>Maximum instantaneous forward voltage at 3A (Note 1)</td>
<td>$V_F$</td>
<td>0.55</td>
<td>0.7</td>
<td>0.85</td>
<td>V</td>
<td></td>
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<tr>
<td>Maximum instantaneous reverse current at rated DC blocking voltage @ $T_A$ = 100°C</td>
<td>$I_R$</td>
<td>1.5</td>
<td>3.0</td>
<td>mA</td>
<td></td>
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<tr>
<td>Typical junction capacitance (Note 3)</td>
<td>$C_J$</td>
<td>250</td>
<td>160</td>
<td>pF</td>
<td></td>
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<tr>
<td>Typical thermal resistance (Note 2)</td>
<td>$R_{THA}$</td>
<td>40</td>
<td></td>
<td>°C/W</td>
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<tr>
<td>Operating junction temperature range</td>
<td>$T_J$</td>
<td>-65 to +125</td>
<td>-65 to +150</td>
<td>°C</td>
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<tr>
<td>Storage temperature range</td>
<td>$T_S$</td>
<td>-65 to +150</td>
<td>°C</td>
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</table>

Notes:
1) Pulse test:300 μs pulse width, 1% duty cycle.
2) Thermal resistance from junction to lead vertical P.C.B. mounted, 0.5”(12.7mm) lead length with 2.5x2.5”(63.5x63.5mm) copper pads
3) Measured at 1MHz and reverse voltage of 4V.
RATINGS AND CHARACTERISTIC CURVES SB320 THRU SB3100

Fig.1- FORWARD CURRENT DERATING CURVE

Fig.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

Fig.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

Fig.4- TYPICAL REVERSE CHARACTERISTICS

Fig.5- TYPICAL JUNCTION CAPACITANCE

Fig.6- TYPICAL TRANSIENT THERMAL IMPEDANCE