SB120A THRU SB160A

SCHOTTKY BARRIER RECTIFIER
Reverse Voltage – 20 to 60 V
Forward Current – 1 A

Features
- Plastic package has Underwriters Laboratory
  Flammability Classification 94V-0
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage high frequency inverters,
  free wheeling, and polarity protection applications

Mechanical Data
- Case: Molded plastic, DO-41
- 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 \((T_A = 25 \, ^\circ C\) unless otherwise noted\)

<table>
<thead>
<tr>
<th>Parameter / Symbol / Description</th>
<th>Values</th>
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<tbody>
<tr>
<td>SB120A / SB130A / SB140A / SB150A / SB160A</td>
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<tr>
<td>Maximum Repetitive Peak Reverse Voltage (V_{RRM})</td>
<td>20 / 30 / 40 / 50 / 60 V</td>
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<tr>
<td>Maximum RMS Voltage (V_{RMS})</td>
<td>14 / 21 / 28 / 35 / 42 V</td>
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<tr>
<td>Maximum DC Blocking Voltage (V_{DC})</td>
<td>20 / 30 / 40 / 50 / 60 V</td>
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<tr>
<td>Maximum Average Forward Rectified Current (I_{AV}) at 0.375(^*) (9.5 mm) Lead Length</td>
<td>1 A</td>
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<tr>
<td>Peak Forward Surge Current (I_{FSM}) over 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)</td>
<td>35 A</td>
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<tr>
<td>Maximum Forward Voltage at 1 A (I_{FSM})</td>
<td>0.5 V</td>
</tr>
<tr>
<td>Voltage rate of change (rated (V_{in})) (dv/dt)</td>
<td>1000 V/(\mu)s</td>
</tr>
<tr>
<td>Typical Thermal Resistance (R_{THJ}) at 25 (^\circ)C</td>
<td>100 (^\circ)C/W</td>
</tr>
<tr>
<td>Operating Junction Temperature Range (T_J)</td>
<td>-65 to +125 (^\circ)C</td>
</tr>
<tr>
<td>Storage Temperature Range (T_S)</td>
<td>-65 to +150 (^\circ)C</td>
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</tbody>
</table>

1) Thermal resistance junction to lead P.C.B mounted 0.375\(^*\) (9.5 mm) lead length.
2) Pulse test: 300 \(\mu\)s pulse width, 1% duty cycle.
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Ratings and Characteristic Curves

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

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