BAT86

SCHOTTKY BARRIER DIODE

Ultra high-speed switching, voltage clamping protection circuits and blocking applications

Features
• Low forward voltage
• Hermetically-sealed leaded glass package

Absolute Maximum Ratings (T_\text{a} = 25 \degree \text{C})

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Reverse Voltage</td>
<td>(V_R)</td>
<td>50</td>
<td>V</td>
</tr>
<tr>
<td>Continuous Forward Current</td>
<td>(I_F)</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>Average Forward Current ((V_{RWM} = 25 \text{ V}, T_{\text{amb}} = 50 \degree \text{C}))</td>
<td>(I_{F(AV)})</td>
<td>200</td>
<td>mA</td>
</tr>
<tr>
<td>Repetitive Peak Forward Current (at (t_p \leq 1 \text{ s}, \delta \leq 0.5))</td>
<td>(I_{FRM})</td>
<td>500</td>
<td>mA</td>
</tr>
<tr>
<td>Non-repetitive Peak Forward Current (at (t_p \leq 10 \text{ ms}))</td>
<td>(I_{FSM})</td>
<td>5</td>
<td>A</td>
</tr>
<tr>
<td>Operating Ambient Temperature Range</td>
<td>(T_{\text{amb}})</td>
<td>-65 to +125</td>
<td>(\degree \text{C})</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>(T_{J})</td>
<td>125</td>
<td>(\degree \text{C})</td>
</tr>
<tr>
<td>Storage Temperature Range</td>
<td>(T_{\text{Stg}})</td>
<td>-65 to +150</td>
<td>(\degree \text{C})</td>
</tr>
<tr>
<td>Thermal Resistance from Junction to Ambient</td>
<td>(R_{\text{thja}})</td>
<td>320</td>
<td>K/W</td>
</tr>
</tbody>
</table>

Characteristics at \(T_\text{a} = 25 \degree \text{C}\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward Voltage</td>
<td>(V_F)</td>
<td>300</td>
<td>mV</td>
</tr>
<tr>
<td>at (I_F = 0.1 \text{ mA})</td>
<td>(V_F)</td>
<td>300</td>
<td>mV</td>
</tr>
<tr>
<td>at (I_F = 1 \text{ mA})</td>
<td>(V_F)</td>
<td>380</td>
<td>mV</td>
</tr>
<tr>
<td>at (I_F = 10 \text{ mA})</td>
<td>(V_F)</td>
<td>450</td>
<td>mV</td>
</tr>
<tr>
<td>at (I_F = 30 \text{ mA})</td>
<td>(V_F)</td>
<td>600</td>
<td>mV</td>
</tr>
<tr>
<td>at (I_F = 100 \text{ mA})</td>
<td>(V_F)</td>
<td>900</td>
<td>mV</td>
</tr>
<tr>
<td>Reverse Current</td>
<td>(I_R)</td>
<td>5</td>
<td>(\mu\text{A})</td>
</tr>
<tr>
<td>at (V_R = 40 \text{ V})</td>
<td>(I_R)</td>
<td>5</td>
<td>(\mu\text{A})</td>
</tr>
<tr>
<td>Diode Capacitance</td>
<td>(C_d)</td>
<td>8</td>
<td>pF</td>
</tr>
<tr>
<td>at (V_R = 1 \text{ V}, f = 1 \text{ MHz})</td>
<td>(C_d)</td>
<td>8</td>
<td>pF</td>
</tr>
<tr>
<td>Reverse Recovery Time</td>
<td>(t_{rr})</td>
<td>4</td>
<td>ns</td>
</tr>
<tr>
<td>at (I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, R_L = 100 \Omega)</td>
<td>(t_{rr})</td>
<td>4</td>
<td>ns</td>
</tr>
</tbody>
</table>
Fig. 1 Derating curve.

Fig. 2 Forward current as a function of forward voltage; typical values.

Fig. 3 Reverse current as a function of reverse voltage; typical values.

Fig. 4 Diode capacitance as a function of reverse voltage; typical values.