1N4933 - 1N4937

Features
- Low forward voltage drop.
- High surge current capability.
- High reliability.
- High current capability.

Fast Rectifiers

Absolute Maximum Ratings* $T_a = 25^\circ C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_{RRM}$</td>
<td>Maximum Repetitive Reverse Voltage</td>
<td>50 100 200 400 600</td>
<td>V</td>
</tr>
<tr>
<td>$I_{F(AV)}$</td>
<td>Average Rectified Forward Current, $V = 0.5$ A, $I_R = 1.0$ A, $I_{RR} = 0.25$ A</td>
<td>1.0</td>
<td>A</td>
</tr>
<tr>
<td>$I_{FSM}$</td>
<td>Non-repetitive Peak Forward Surge Current $8.3$ ms Single Half-Sine-Wave</td>
<td>30</td>
<td>A</td>
</tr>
<tr>
<td>$T_{STG}$</td>
<td>Storage Temperature Range</td>
<td>-50 to +150</td>
<td>°C</td>
</tr>
<tr>
<td>$T_J$</td>
<td>Operating Junction Temperature</td>
<td>-50 to +150</td>
<td>°C</td>
</tr>
</tbody>
</table>

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>2.5</td>
<td>W</td>
</tr>
<tr>
<td>$R_{JJA}$</td>
<td>Thermal Resistance, Junction to Ambient</td>
<td>50</td>
<td>°C/W</td>
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</table>

Electrical Characteristics $T_a = 25^\circ C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Device</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_F$</td>
<td>Forward Voltage @ 1.0 A</td>
<td>4933 4934 4935 4936 4937</td>
<td>V</td>
</tr>
<tr>
<td>$t_r$</td>
<td>Reverse Recovery Time $I_F = 0.5$ A, $I_R = 1.0$ A, $I_{RR} = 0.25$ A</td>
<td>150</td>
<td>ns</td>
</tr>
<tr>
<td>$I_R$</td>
<td>Reverse Current @ rated $V_R$ $T_a = 25^\circ C$</td>
<td>5.0</td>
<td>µA</td>
</tr>
<tr>
<td></td>
<td>$T_a = 125^\circ C$</td>
<td>100</td>
<td>µA</td>
</tr>
<tr>
<td>$C_T$</td>
<td>Total Capacitance $V_R = 4.0$ V, $f = 1.0$ MHz</td>
<td>12</td>
<td>pF</td>
</tr>
</tbody>
</table>

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Typical Characteristics

Figure 1. Forward Current Derating Curve

Figure 2. Forward Voltage Characteristics

Figure 3. Non-Repetitive Surge Current

Figure 4. Reverse Current vs Reverse Voltage

Figure 5. Total Capacitance

Reverse Recovery Time Characteristic and Test Circuit Diagram

NOTES:
1. Rise time = 7.0 ns max; Input impedance = 1.0 megohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.
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