1N4001 - 1N4007
General Purpose Rectifiers

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

Absolute Maximum Ratings * \( T_A = 25^\circ \text{C} \) 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>Peak Repetitive Reverse Voltage</td>
<td>50 100 200 400 600 800 1000</td>
<td>V</td>
</tr>
<tr>
<td>( I_{F(AV)} )</td>
<td>Average Rectified Forward Current</td>
<td>1.0</td>
<td>A</td>
</tr>
<tr>
<td>( I_{FSM} )</td>
<td>Non-Repetitive Peak Forward Surge Current 8.3ms Single Half-Sine-Wave</td>
<td>30</td>
<td>A</td>
</tr>
<tr>
<td>( I^2t )</td>
<td>Rating for Fusing (t&lt;8.3ms)</td>
<td>3.7</td>
<td>A²sec</td>
</tr>
<tr>
<td>( T_{STG} )</td>
<td>Storage Temperature Range</td>
<td>-55 to +175</td>
<td>°C</td>
</tr>
<tr>
<td>( T_J )</td>
<td>Operating Junction Temperature</td>
<td>-55 to +175</td>
<td>°C</td>
</tr>
</tbody>
</table>

* These ratings are limiting values above which the serviceability of any semiconductor device may by 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>3.0</td>
<td>W</td>
</tr>
<tr>
<td>( R_{NSA} )</td>
<td>Thermal Resistance, Junction to Ambient</td>
<td>50</td>
<td>°C/W</td>
</tr>
</tbody>
</table>

Electrical Characteristics \( T_A = 25^\circ \text{C} \) unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>( V_F )</td>
<td>Forward Voltage @ 1.0A</td>
<td>1.1</td>
<td>V</td>
</tr>
<tr>
<td>( I_{rr} )</td>
<td>Maximum Full Load Reverse Current, Full Cycle ( T_A = 75^\circ \text{C} )</td>
<td>30</td>
<td>µA</td>
</tr>
<tr>
<td>( I_R )</td>
<td>Reverse Current @ Rated ( V_R ) ( T_A = 25^\circ \text{C} ) ( T_A = 100^\circ \text{C} )</td>
<td>5.0 50</td>
<td>µA µA</td>
</tr>
<tr>
<td>( C_T )</td>
<td>Total Capacitance ( V_R = 4.0V, f = 1.0\text{MHz} )</td>
<td>15</td>
<td>pF</td>
</tr>
</tbody>
</table>
Typical Performance Characteristics

Figure 1. Forward Current Derating Curve

Figure 2. Forward Characteristics

Figure 3. Non-Repetitive Surge Current

Figure 4. Reverse Characteristics
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<th>Definition</th>
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