1N4001 - 1N4007
General-Purpose Rectifiers

Features
- Low Forward Voltage Drop
- High Surge Current Capability

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Top Mark</th>
<th>Package</th>
<th>Packing Method</th>
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<tbody>
<tr>
<td>1N4001</td>
<td>1N4001</td>
<td>DO-204AL (DO-41)</td>
<td>Tape and Reel</td>
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<td>1N4007</td>
<td>DO-204AL (DO-41)</td>
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Absolute Maximum Ratings
Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ C$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter Description</th>
<th>Value</th>
<th>Unit</th>
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</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 .375 ° Lead Length at $T_A = 75^\circ C$</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>$I^2t$</td>
<td>Rating for Fusing (t &lt; 8.3 ms)</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>
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</table>
### Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

<table>
<thead>
<tr>
<th>Symbol</th>
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<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>$P_D$</td>
<td>Power Dissipation</td>
<td>3.0</td>
<td>W</td>
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<tr>
<td>$R_{\theta JA}$</td>
<td>Thermal Resistance, Junction-to-Ambient</td>
<td>50</td>
<td>°C/W</td>
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</table>

### Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

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

Figure 1. Forward Current Derating Curve

Figure 2. Forward Characteristics

Figure 3. Non-Repetitive Surge Current

Figure 4. Reverse Characteristics
NOTES: UNLESS OTHERWISE SPECIFIED

A) PACKAGE STANDARD REFERENCE: JEDEC DO-204 VARIATION AL.
B) PACKAGE BODY CAN BE PLASTIC OR HERMETICALLY SEALED GLASS.
D) ALL DIMENSIONS ARE IN MILLIMETERS.
E) DRAWING FILE NAME: DO41AREV2
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<th>Product Status</th>
<th>Definition</th>
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<tr>
<td>Advance Information</td>
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<td>Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.</td>
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<td>First Production</td>
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