THE 1N4001-1N4007 IS NOT RECOMMENDED FOR NEW DESIGNS.
PLEASE USE THE 1N4007G_HF.

Features

- Diffused Junction
- High Current Capability and Low-Forward Voltage Drop
- Surge Overload Rating to 30A Peak
- Low Reverse Leakage Current
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/

Mechanical Data

- Package: DO-41
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 @3
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 0.30 grams (Approximate)

Ordering Information (Note 3)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
<th>Qty.</th>
<th>Carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>1N4001-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
</tr>
<tr>
<td>1N4002-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
</tr>
<tr>
<td>1N4003-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
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<tr>
<td>1N4004-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
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<tr>
<td>1N4005-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
</tr>
<tr>
<td>1N4006-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
</tr>
<tr>
<td>1N4007-T</td>
<td>DO-41 Plastic</td>
<td>5k</td>
<td>13&quot; Tape &amp; Reel</td>
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</tbody>
</table>

Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.
## Maximum Ratings and Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Symbol</th>
<th>1N4001</th>
<th>1N4002</th>
<th>1N4003</th>
<th>1N4004</th>
<th>1N4005</th>
<th>1N4006</th>
<th>1N4007</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Peak Repetitive Reverse Voltage</td>
<td>VRRM</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Working Peak Reverse Voltage</td>
<td>VRWM</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>DC Blocking Voltage</td>
<td>VR</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>RMS Reverse Voltage</td>
<td>VR(RMS)</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>V</td>
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<tr>
<td>Average Rectified Output Current (Note 4)</td>
<td>IO</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
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<tr>
<td>Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load</td>
<td>IFSM</td>
<td>30</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
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<tr>
<td>Forward Voltage @ IF = 1.0A</td>
<td>VF</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Peak Reverse Voltage @ TA = +25°C at Rated DC Blocking Voltage @ TA = +100°C</td>
<td>IRM</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
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<tr>
<td>Typical Junction Capacitance (Note 5)</td>
<td>CJ</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
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<tr>
<td>Typical Thermal Resistance Junction to Ambient</td>
<td>RJJA</td>
<td>100</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>k/W</td>
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<td>Maximum DC Blocking Voltage Temperature</td>
<td>TA</td>
<td>-150</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Operating and Storage Temperature Range</td>
<td>TJ, TSTG</td>
<td>-65 to +150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

**Notes:**
4. Leads maintained at ambient temperature at a distance of 9.5mm from the case.
5. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
**Fig. 1** Forward Current Derating Curve

- $I_{AV}$, AVERAGE FORWARD RECTIFIED CURRENT (A)
- $T_A$, AMBIENT TEMPERATURE (°C)

**Fig. 2** Typical Forward Characteristics

- $I_{FP}$, INSTANTANEOUS FORWARD CURRENT (A)
- $V_{IF}$, INSTANTANEOUS FORWARD VOLTAGE (V)
- $T_f = 1MHz$
- $V_f = 25°C$
- Pulse Width = 300μs
- 2% Duty Cycle

**Fig. 3** Max Non-Repetitive Peak Fwd Surge Current

- $I_{FSM}$, PEAK FORWARD SURGE CURRENT (A)
- NUMBER OF CYCLES AT 60 Hz

**Fig. 4** Typical Junction Capacitance

- $C_J$, CAPACITANCE (pF)
- $V_{R}$, REVERSE VOLTAGE (V)
- $T_J = 25°C$
- $f = 1MHz$

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**1N4001 – 1N4007**

Document number: DS28002 Rev. 10 - 3

August 2023

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NOT RECOMMENDED FOR NEW DESIGN
Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

<table>
<thead>
<tr>
<th>Dim</th>
<th>Min</th>
<th>Max</th>
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<tbody>
<tr>
<td>A</td>
<td>25.40</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>4.06</td>
<td>5.21</td>
</tr>
<tr>
<td>C</td>
<td>0.71</td>
<td>0.864</td>
</tr>
<tr>
<td>D</td>
<td>2.00</td>
<td>2.72</td>
</tr>
</tbody>
</table>

All Dimensions in mm
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