1N4001 THRU 1N4007
GENERAL PURPOSE PLASTIC RECTIFIER
Reverse Voltage - 50 to 1000 Volts  Forward Current - 1.0 Ampere

FEATURES
♦ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
♦ Construction utilizes void-free molded plastic technique
♦ Low reverse leakage
♦ High forward surge current capability
♦ High temperature soldering guaranteed:
  250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

MECHANICAL DATA
Case: JEDEC DO-204AL molded plastic body
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.012 ounce, 0.3 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>SYMBOLS</th>
<th>1N 4001</th>
<th>1N 4002</th>
<th>1N 4003</th>
<th>1N 4004</th>
<th>1N 4005</th>
<th>1N 4006</th>
<th>1N 4007</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>*Maximum repetitive peak 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>
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<tr>
<td>*Maximum RMS voltage</td>
<td>VRMS</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
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<tr>
<td>*Maximum DC blocking voltage</td>
<td>VDC</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
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<tr>
<td>*Maximum average forward rectified current 0.375&quot; (9.5mm) lead length at T_A=75°C</td>
<td>I_{AV}</td>
<td>1.0</td>
<td>Amps</td>
<td></td>
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<td>*Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) T_A=75°C</td>
<td>IFSM</td>
<td>30.0</td>
<td>Amps</td>
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<tr>
<td>*Maximum instantaneous forward voltage at 1.0A</td>
<td>VF</td>
<td>1.0</td>
<td>Volts</td>
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<td></td>
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<td></td>
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<tr>
<td>*Maximum full load reverse current full cycle average 0.375&quot; (9.5mm) lead length at T_L=75°C</td>
<td>I_{R(AV)}</td>
<td>30.0</td>
<td>µA</td>
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<td>*Maximum DC reverse current at rated DC blocking voltage T_A= 25°C</td>
<td>IR</td>
<td>5.0</td>
<td>µA</td>
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<td>T_A=100°C</td>
<td>50.0</td>
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<td>Typical reverse recovery time (NOTE 1)</td>
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<td>30.0</td>
<td>µs</td>
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<td>Typical junction capacitance (NOTE 2)</td>
<td>CJ</td>
<td>15.0</td>
<td>pF</td>
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<td>Typical thermal resistance (NOTE 3)</td>
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<td>°C/W</td>
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<td>ReJL</td>
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<td>Maximum DC blocking voltage temperature</td>
<td>T_A</td>
<td>+150</td>
<td>°C</td>
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<td>*Operating junction and storage temperature range</td>
<td>T_J, T_STG</td>
<td>-50 to +175</td>
<td>°C</td>
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NOTES:
(1) Measured on Tektronix Type “S” recovery plug-in. Tektronix 545 Scope or equivalent, I_{CM}=20mA, I_{RM}=1mA
(2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
(3) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5mm) lead length, P.C.B. mounted
*JEDEC registered value
RATINGS AND CHARACTERISTIC CURVES 1N4001 THRU 1N4007

**FIG. 1 - FORWARD CURRENT DERATING CURVE**

- Ambient Temperature, °C
- Average Forward Rectified Current, Ampères
- 60 Hz Resistive or Inductive Load
- 0.2 x 0.2" (5.0 x 5.0mm) Copper Pads
- 0.375" (9.5mm) Lead Length

**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**

- Number of Cycles at 60 Hz
- Peak Forward Surge Current, Ampères
- 8.3ms Single Half Sine Wave (JEDEC Method)
- T_A=75°C

**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

- Instantaneous Forward Current, Ampères
- Instantaneous Forward Voltage, Volts
- TJ = 25°C
- Pulse Width=300µs
- 1% Duty Cycle

**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**

- Instantaneous Reverse Current, Microamperes
- Percentage of Peak Reverse Voltage, %
- TJ = 25°C
- TJ = 50°C
- TJ = 100°C

**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**

- Junction Capacitance, pF
- Reverse Voltage, Volts
- TJ = 25°C
- f=1.0 MHz
- Vsig=50mVp-p

**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**

- Transient Thermal Impedance, °C/W
- Pulse Duration, sec.