1N4001GP - 1N4007GP

Features

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

1.0 Ampere Glass Passivated Rectifiers

Absolute Maximum Ratings* $T_A = 25°C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>IF(AV)</td>
<td>Average Rectified Current .375&quot; lead length @ $T_A = 75°C$</td>
<td>1.0</td>
<td>A</td>
</tr>
<tr>
<td>IFSM</td>
<td>Non-repetitive Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)</td>
<td>30</td>
<td>A</td>
</tr>
<tr>
<td>PD</td>
<td>Total Device Dissipation Derate above 25°C</td>
<td>3.0</td>
<td>W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>RMA</td>
<td>Thermal Resistance, Junction to ambient</td>
<td>50</td>
<td>°C/W</td>
</tr>
<tr>
<td>Tstg</td>
<td>Storage Temperature Range</td>
<td>-65 to +175°C</td>
<td></td>
</tr>
<tr>
<td>TJ</td>
<td>Operating Junction Temperature</td>
<td>-65 to +175°C</td>
<td></td>
</tr>
</tbody>
</table>

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

Electrical Characteristics $T_A = 25°C$ unless otherwise noted

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Device</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRM</td>
<td>Maximum Repetitive Reverse Voltage</td>
<td>50 100 200 400 600 800 1000</td>
<td>V</td>
</tr>
<tr>
<td>VRMS</td>
<td>Maximum RMS Voltage</td>
<td>35 70 140 280 420 560 700</td>
<td>V</td>
</tr>
<tr>
<td>VR</td>
<td>DC Reverse Voltage (Rated VR)</td>
<td>50 100 200 400 600 800 1000</td>
<td>V</td>
</tr>
<tr>
<td>IRM</td>
<td>Maximum Instantaneous Reverse Current @ rated VR $T_A = 25°C$</td>
<td>5.0</td>
<td>μA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>μA</td>
</tr>
<tr>
<td>VF</td>
<td>Maximum Instantaneous Forward Voltage @ 1.0 A</td>
<td>1.1</td>
<td>V</td>
</tr>
<tr>
<td>C</td>
<td>Typical Junction Capacitance $V_R = 4.0 V, f = 1.0$ MHz</td>
<td>8.0</td>
<td>pF</td>
</tr>
</tbody>
</table>
Glass Passivated Rectifiers
(continued)

Typical Characteristics

Non-Repetitive Surge Current

Forward Current Derating Curve

SINGLE PHASE
HALF WAVE
60Hz
RESISTIVE OR
INDUCTIVE LOAD
375° 9.0 mm LEAD
LENGTHS

Typical Junction Capacitance

Forward Characteristics

PEAK FORWARD SURGE CURRENT (A)

0 25 50 75 100 125 150 175

0

0.2

0.4

0.6

0.8

1

1.2

1.4

1.6

AMBIENT TEMPERATURE (°C)

FORWARD VOLTAGE (V)

FORWARD CURRENT (A)

Pulse Width = 200 
2% Duty Cycle

T = 25 °C

Pulse Width = 300 
1% Duty Cycle

0.01

0.1

1

10

0.1

1

10

0.01

0.1

1

10

0.4

0.6

0.8

1

1.2

1.4

1.6

REVERSE VOLTAGE (V)

FORWARD VOLTAGE (V)

FORWARD CURRENT (A)

0.1 0.5 1 2 5 10 20 50 100

NUMBER OF CYCLES AT 60Hz

0 1 2 5 10 20 50 100

0 100 50 20 10 5 2 1 0.1 0.01

0 10 5

0.1 0.5 1 2 5 10 20 50 100
DO-41 (Glass) Tape and Ammo Data

DO-41 (Glass) Packaging
Configuration: Figure 1.0

DO-41 (Glass) Packaging
Information
Table: Figure 2.0

<table>
<thead>
<tr>
<th>Packaging Option</th>
<th>T50R</th>
<th>T50A</th>
<th>Standard (no flow code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging type</td>
<td>TNR</td>
<td>Ammo</td>
<td>Bag</td>
</tr>
<tr>
<td>Qty per Reel/Tube/Bag</td>
<td>3,000</td>
<td>3,000</td>
<td>250</td>
</tr>
<tr>
<td>Reel Size (inch diameter)</td>
<td>10.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Inside Tape Spacing (mm)</td>
<td>52</td>
<td>52</td>
<td>-</td>
</tr>
<tr>
<td>Int Box Dimension (mm)</td>
<td>261x261x181</td>
<td>181x151x127</td>
<td>361x255x127</td>
</tr>
<tr>
<td>Max qty per Box</td>
<td>6,000</td>
<td>30,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Weight per unit (gm)</td>
<td>0.320</td>
<td>0.320</td>
<td>0.320</td>
</tr>
<tr>
<td>Weight per Reel (kg)</td>
<td>1.395</td>
<td>1.395</td>
<td>1.395</td>
</tr>
<tr>
<td>Note/Comments</td>
<td>Bulk</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

DO-41 (Glass) Bulk Packing
Configuration: Figure 3.0

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DO-41 (Glass) Tape and Ammo Data, continued

DO-41 (Glass) Ammo Packing
Configuration: Figure 4.0

TAPING DIMENSIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>INCH</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.520</td>
<td>±0.066</td>
<td>±1.69</td>
<td>Overall width</td>
</tr>
<tr>
<td></td>
<td></td>
<td>±0.027</td>
<td>±0.69</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2.047±0.027</td>
<td>±0.058</td>
<td>±0.69</td>
<td>Inside Tape Spacing</td>
</tr>
<tr>
<td></td>
<td>2047±27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0.200±0.0157</td>
<td>±0.40</td>
<td>±6.9</td>
<td>Component Pitch</td>
</tr>
<tr>
<td></td>
<td>200±15.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>0.047(max)</td>
<td>1.2(max)</td>
<td>47(max)</td>
<td>Component Misalignment</td>
</tr>
<tr>
<td>E</td>
<td>0.022(max)</td>
<td>0.55(max)</td>
<td>22(max)</td>
<td>Tape Mismatch</td>
</tr>
<tr>
<td>F</td>
<td>0.027(max)</td>
<td>±0.69</td>
<td>±7</td>
<td>Units in line w/ one another</td>
</tr>
<tr>
<td>G</td>
<td>0.126(min)</td>
<td>3.2(min)</td>
<td>126(min)</td>
<td>Lead amount between tapes</td>
</tr>
<tr>
<td>H</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Lead amount beyond tapes</td>
</tr>
<tr>
<td>L1-L2</td>
<td>±0.027</td>
<td>±0.69</td>
<td>±7</td>
<td>Delta between two leads</td>
</tr>
</tbody>
</table>

DO-41 (Glass) Taping
Dimension: Figure 5.0

REEL DIMENSIONS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>10.375</td>
<td>10.625</td>
</tr>
<tr>
<td>D2</td>
<td>1.246</td>
<td>1.255</td>
</tr>
<tr>
<td>D3</td>
<td>3.190</td>
<td>3.310</td>
</tr>
<tr>
<td>W1</td>
<td>3.400</td>
<td></td>
</tr>
</tbody>
</table>

Note: All Dimensions are in inches

DO-41 (Glass) Reel
Dimension: Figure 6.0

August 2000, Rev. B
DO-41 (Glass) Package Dimensions

DO-41 (FS PKG Code D4)

Scale 1:1 on letter size paper
Dimensions shown below are in:
inches [millimeters]
Part Weight per unit (gram): 0.32

Part Dimensions:

- 1.0 min (25.4)
- 0.205 (5.21) 0.160 (4.06)
- Φ 0.107 (2.72) 0.080 (2.03)
- Φ 0.034 (0.86) 0.028 (0.71)
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- FAST®
- PowerTrench®
- QFET™
- QS™
- QT Optoelectronics™
- Quiet Series™
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- SMART START™
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- SuperSOT™-6
- SuperSOT™-8

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<th>Definition</th>
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</thead>
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</tr>
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