GR3A thru GR3M

Fast Recovery Surface Mount Rectifiers
Reverse Voltage 50 to 1000 Volts  Forward Current 3.0 Amperes

Features
◆ For surface mounted application
◆ Glass passivated junction chip
◆ Built-in strain relief, ideal for automated placement
◆ Plastic material used carries Underwriters Laboratory Classification 94V-O
◆ Fast switching for high efficiency
◆ High temperature soldering: 250°C/10 seconds at terminals

Mechanical Data
◆ Cases: Molded plastic
◆ Terminals: Solder plated
◆ Polarity: Indicated by cathode band
◆ Weight: 0.007 ounce, 0.21 gram

Maximum Ratings and Electrical Characteristics
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbols</th>
<th>GR3A</th>
<th>GR3B</th>
<th>GR3D</th>
<th>GR3G</th>
<th>GR3J</th>
<th>GR3K</th>
<th>GR3M</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>V_{RMM}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>V_{RMS}</td>
<td>35</td>
<td>70</td>
<td>140</td>
<td>280</td>
<td>420</td>
<td>560</td>
<td>700</td>
<td>Volts</td>
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<tr>
<td>Maximum DC blocking voltage</td>
<td>V_{DC}</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>1000</td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum average forward rectified current</td>
<td>I_{AV}</td>
<td>3.0</td>
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<td></td>
<td>Amps</td>
</tr>
<tr>
<td>Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)</td>
<td>I_{PSM}</td>
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<td></td>
<td></td>
<td>100.0</td>
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<td></td>
<td></td>
<td>Amps</td>
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<tr>
<td>Maximum instantaneous forward voltage @ 3.0A</td>
<td>V_{f}</td>
<td>1.3</td>
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<td></td>
<td></td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC reverse current @ T_{A}=25°C at rated DC blocking voltage</td>
<td>I_{D}</td>
<td>10.0</td>
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<td>250</td>
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<td>µA</td>
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<tr>
<td>Maximum reverse recovery time (Note 1)</td>
<td>t_{rr}</td>
<td>150</td>
<td>250</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
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<td>Typical junction capacitance (Note 2)</td>
<td>C_{j}</td>
<td>75</td>
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<td></td>
<td></td>
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<td></td>
<td>pF</td>
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<td>Typical thermal resistance (Note 3)</td>
<td>R_{thA}</td>
<td>50.0</td>
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<td></td>
<td></td>
<td>°C/W</td>
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<td>R_{thL}</td>
<td>15.0</td>
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<td>Operating temperature range</td>
<td>T_{j}</td>
<td>-55 to +150</td>
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<td></td>
<td>°C</td>
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<tr>
<td>Storage temperature range</td>
<td>T_{stg}</td>
<td>-55 to +150</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

Notes:
1. Reverse Recovery Test Conditions: I_{F}=0.5A, I_{p}=1.0A, I_{RR}=0.25A
2. Measured at 1 MHz and Applied V_{ps}=4.0 Volts
3. Thermal Resistance from Junction to Ambient and from Junction to Lead Mounted on P.C.B. with 0.3" x 0.3" (8.0 x 8.0 mm) Copper Pad Areas.
RATINGS AND CHARACTERISTIC CURVES

**FIG. 1: MAXIMUM FORWARD CURRENT DERATING CURVE**

- Resistive or inductive load
- P.C. B. mounted
- 0.3 x 0.9" (8.095, 0.0mm)
- Copper pad areas

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

- TJ = Tj max
- 8.3sec Single Half Sine Wave
- JEDEC Method

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

- TJ = 125°C
- TJ = 75°C
- TJ = 40°C
- Pulse Width=300usec
- 1% Duty Cycle

**FIG. 4: TYPICAL REVERSE CHARACTERISTICS**

- TJ = 125°C
- TJ = 75°C
- TJ = 25°C

**FIG. 5: TYPICAL JUNCTION CAPACITANCE**

- TJ = 125°C
- R1=100MΩ
- V1=50mV/sec