GR3AB thru GR3MB
Fast Recovery Surface Mount Rectifiers
Reverse Voltage 50 to 1000 Volts  Forward Current 3.0 Amperes

Features

◆ Fast switching for high efficiency
◆ For surface mounted applications
◆ Glass passivated chip
◆ Low reverse leakage current
◆ Low forward voltage drop
◆ High current capability
◆ Plastic material has UL flammability classification 94V-0

Mechanical Data

◆ Case : Molded plastic
◆ Polarity : Indicated by cathode band
◆ Weight : 0.003 ounce, 0.093 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>GR3AB</th>
<th>GR3BB</th>
<th>GR3DB</th>
<th>GR3GB</th>
<th>GR3JB</th>
<th>GR3KB</th>
<th>GR3MB</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>( V_{\text{RM}} )</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_{\text{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>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>( V_{\text{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_{\text{AVG}} )</td>
<td>3.0</td>
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<td>Amps</td>
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<tr>
<td>Peak forward surge current</td>
<td>( I_{\text{SM}} )</td>
<td>100.0</td>
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<td></td>
<td></td>
<td>Amps</td>
</tr>
<tr>
<td>Maximum forward voltage at 3.0A DC</td>
<td>( V_{f} )</td>
<td>1.3</td>
<td></td>
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<td></td>
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<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage</td>
<td>( I_{r} )</td>
<td>5.0</td>
<td></td>
<td>250</td>
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<td></td>
<td></td>
<td></td>
<td>( \mu A )</td>
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<tr>
<td>Maximum reverse recovery time (Note 1)</td>
<td>( t_{r} )</td>
<td>150</td>
<td>250</td>
<td>500</td>
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<td></td>
<td></td>
<td></td>
<td>( \text{nS} )</td>
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<tr>
<td>Typical junction capacitance (Note 2)</td>
<td>( C_{j} )</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \text{pF} )</td>
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<tr>
<td>Typical thermal resistance (Note 3)</td>
<td>( R_{\text{TH}} )</td>
<td>50.0</td>
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<td></td>
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<td></td>
<td></td>
<td>( ^{\circ} \text{C/W} )</td>
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<tr>
<td>Operating temperature range</td>
<td>( T_{o} )</td>
<td>-55 to +150</td>
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<td></td>
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<td>( ^{\circ} \text{C} )</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>( T_{\text{STG}} )</td>
<td>-55 to +150</td>
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<td>( ^{\circ} \text{C} )</td>
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</tbody>
</table>

Notes:
1. Reverse Recovery Test Conditions: \( I_{t}=0.5A,I_{\text{F}}=1.0A,I_{\text{RM}}=0.25A \)
2. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.
3. Thermal Resistance Junction to Ambient and from Junction to Lead
RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - FORWARD CURRENT DERATING CURVE

Average forward current (Amperes) vs. lead temperature (°C).

SINGLE PHASE HALF WAVE 60Hz RESISTIVE OR INDUCTIVE LOAD

FIG. 2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

Peak forward surge current (Amperes) vs. number of cycles at 60Hz.

Pulse Width 8.3ms Single Half-Sine-Wave (JEDEC METHOD)

FIG. 3 - TYPICAL FORWARD CHARACTERISTICS

Instantaneous forward current (A) vs. instantaneous forward voltage (Volts).

TJ = 25°C
PULSEWIDTH 300µS

FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

Instantaneous reverse current (µA) vs. percent of rated peak reverse voltage (%).

TJ = 125°C
TJ = 25°C