RG3J-10

GLASS PASSIVATED JUNCTION RECTIFIER
Forward Current – 3.0 Amperes

Features

- Cavity-free glass passivated junction
- High temperature metallurgically bonded construction
- High temperature soldering guaranteed:
  350°C/10 seconds, 0.375"(9.5mm) lead length,
  5 lbs, (2.3kg) tension

Mechanical Data

- **Case:** Solid glass body.
- **Terminals:** Solder plated axial leads, solderable per
- **Polarity:** Color band denotes cathode end.
- **Mounting Position:** Any
- **Weight:** 0.04 ounce, 1.1 grams.

Absolute Maximum Ratings and Characteristics

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>( V_{RRM} )</td>
<td>400</td>
</tr>
<tr>
<td>Maximum RMS voltage</td>
<td>( V_{RMS} )</td>
<td>280</td>
</tr>
<tr>
<td>Maximum DC blocking voltage</td>
<td>( V_{DC} )</td>
<td>400</td>
</tr>
<tr>
<td>Maximum average forward rectified current ( 0.375&quot; ) (9.5mm) lead length at ( T_A=70 ) °C</td>
<td>( I_{F(AV)} )</td>
<td>3</td>
</tr>
<tr>
<td>Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)</td>
<td>( I_{FSM} )</td>
<td>125</td>
</tr>
<tr>
<td>Maximum full load reverse current, full cycle average, ( 0.375&quot; ) (9.5mm) lead length at ( T_A=70 ) °C</td>
<td>( I_{R(AV)} )</td>
<td>150</td>
</tr>
<tr>
<td>Maximum instantaneous forward voltage at ( 3A T_A = 25 ) °C</td>
<td>( V_F )</td>
<td>1.3</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage ( T_A = 25 ) °C ( T_A = 175 ) °C</td>
<td>( I_R )</td>
<td>5</td>
</tr>
<tr>
<td>Typical junction capacitance at 4V, 1MHz</td>
<td>( C_J )</td>
<td>40</td>
</tr>
<tr>
<td>Typical thermal resistance (Note 1) ( R_{JA} ) ( R_{JL} )</td>
<td>20</td>
<td>°C/W</td>
</tr>
<tr>
<td>Operating junction temperature range</td>
<td>( T_J )</td>
<td>-65 to +175</td>
</tr>
<tr>
<td>Storage temperature range</td>
<td>( T_S )</td>
<td>-65 to +200</td>
</tr>
</tbody>
</table>

Notes: (1) Thermal resistance from junction to ambient and from junction to lead at \( 0.375" \) (9.5mm) lead length with both leads
attached between heat sink.
Ratings and Characteristic Curves (\(T_A=25^\circ C\) unless otherwise noted)

**FIG.1 FORWARD CURRENT DERATING CURVE**

- AMERAGE FORWARD RECTIFIED CURRENT AMPERES
- AMBIENT TEMPERATURE\(^\circ C\)
- 60Hz RESISTIVE OR INDUCTIVE 10AD
- 0.375" (9.5mm) LEAD LENGTH

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

- Tj=Tj max
- 8.3ms SINGLE HALF SINE-WAVE (JEDEC Method)
- AVERAGE FORWARD CURRENT AMPERES
- NUMBER OF CYCLES AT 60 Hz

**FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**

- INSTANTANEOUS FORWARD CURRENT AMPERES
- ININSTANTANEOUS FORWARD REVERSE VOLTAGE VOLTS
- Tj=150\(^\circ C\) Tj=25\(^\circ C\)
- PULSE WIDTH=300 \(\mu\)s 1% DUTY CYCLE

**FIG.4 TYPICAL REVERSE CHARACTERISTICS**

- AVERAGE FORWARD CURRENT MICROAMPERES
- PERCENT OF RATED PEAK REVERSE VOLTAGE,%
- Tj=100\(^\circ C\) Tj=75\(^\circ C\) Tj=25\(^\circ C\)

**FIG.5 TYPICAL JUNCTION CAPACITANCE**

- JUNCTION CAPACITANCE pF
- REVERSE VOLTAGE VOLTS
- Tj=25\(^\circ C\)
- f=1.0MHz
- Vsig=50mV p-p