Surface Mount Glass Passivated Junction Fast Switching Rectifier

FEATyRES
- Superrectifier structure for high reliability condition
- Ideal for automated placement
- Fast switching for high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS
For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, automotive, and telecommunication.

MECHANICAL DATA
Case: DO-213AA, molded epoxy over glass body
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified
Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test
Polarity: Two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

PRIMARY CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>RGL34A</th>
<th>RGL34B</th>
<th>RGL34D</th>
<th>RGL34G</th>
<th>RGL34J</th>
<th>RGL34K</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum average forward rectified current at TJ = 55 °C</td>
<td>IF(AV)</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load</td>
<td>IFSM</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Maximum full load reverse current, full cycle average TJ = 55 °C</td>
<td>I(AV)</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>μA</td>
</tr>
<tr>
<td>Operating junction and storage temperature range</td>
<td>Tj, Tstg</td>
<td>-65 to +175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MAXIMUM RATINGS (TA = 25 °C unless otherwise noted)

PARAMETER SYMBOL RGL34A RGL34B RGL34D RGL34G RGL34J RGL34K UNIT
FAST SWITCHING DEVICE: 1st BAND IS RED
Polarity color bands (2nd band) Gray Red Orange Yellow Green Blue
Maximum repetitive peak reverse voltage VRRM 50 100 200 400 600 800 V
Maximum RMS voltage VRMS 35 70 140 280 420 560 V
Maximum DC blocking voltage VDC 50 100 200 400 600 800 V

Revision: 11-Dec-13
For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com
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ELECTRICAL CHARACTERISTICS \( (T_A = 25 \, ^\circ C \text{ unless otherwise noted}) \)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>TEST CONDITIONS</th>
<th>SYMBOL</th>
<th>RGL34A</th>
<th>RGL34B</th>
<th>RGL34D</th>
<th>RGL34G</th>
<th>RGL34J</th>
<th>RGL34K</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum instantaneous forward voltage</td>
<td>0.5 A</td>
<td>( V_F )</td>
<td>1.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Maximum DC reverse current at rated DC blocking voltage</td>
<td>( T_A = 25 , ^\circ C )</td>
<td>( I_R )</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>( \mu A )</td>
</tr>
<tr>
<td></td>
<td>( T_A = 125 , ^\circ C )</td>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum reverse recovery time</td>
<td>( I_F = 0.5 , A ), ( I_R = 1.0 , A ), ( I_{rr} = 0.25 , A )</td>
<td>( t_{rr} )</td>
<td>150</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ns</td>
</tr>
<tr>
<td>Typical junction capacitance</td>
<td>4.0 V, 1 MHz</td>
<td>( C_J )</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pF</td>
</tr>
</tbody>
</table>

THERMAL CHARACTERISTICS \( (T_A = 25 \, ^\circ C \text{ unless otherwise noted}) \)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>SYMBOL</th>
<th>RGL34A</th>
<th>RGL34B</th>
<th>RGL34D</th>
<th>RGL34G</th>
<th>RGL34J</th>
<th>RGL34K</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum thermal resistance</td>
<td>( R_{JA} ) (^{(1)})</td>
<td></td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(^{\circ} C/W )</td>
</tr>
<tr>
<td></td>
<td>( R_{JT} ) (^{(2)})</td>
<td></td>
<td></td>
<td>70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes

\(^{(1)}\) Thermal resistance from junction to ambient, 0.2” x 0.2” (5.0 mm x 5.0 mm) copper pads to each terminal

\(^{(2)}\) Thermal resistance from junction to terminal, 0.2” x 0.2” (5.0 mm x 5.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)

<table>
<thead>
<tr>
<th>PREFERRED P/N</th>
<th>UNIT WEIGHT (g)</th>
<th>PREFERRED PACKAGE CODE</th>
<th>BASE QUANTITY</th>
<th>DELIVERY MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGL34J-E3/98</td>
<td>0.036</td>
<td>98</td>
<td>2500</td>
<td>7” diameter plastic tape and reel</td>
</tr>
<tr>
<td>RGL34J-E3/83</td>
<td>0.036</td>
<td>83</td>
<td>9000</td>
<td>13” diameter plastic tape and reel</td>
</tr>
<tr>
<td>RGL34JHE3/98 (^{(1)})</td>
<td>0.036</td>
<td>98</td>
<td>2500</td>
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<tr>
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</tr>
</tbody>
</table>

Note

\(^{(1)}\) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES \( (T_A = 25 \, ^\circ C \text{ unless otherwise noted}) \)

Fig. 1 - Forward Current Derating Curve

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current
Fig. 3 - Typical Instantaneous Forward Characteristics

Fig. 4 - Typical Reverse Characteristics

Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AA (GL34)

1st band denotes type and polarity
2nd band denotes voltage type
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