Surface-Mount Glass Passivated Junction Fast Switching Rectifier

FEATURES
- 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
- 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: GL34 (DO-213AA), molded epoxy over glass body
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS- compliant, commercial grade
Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test
Polarity: two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

MAXIMUM RATINGS (T_A = 25 °C 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>Polarity color bands (2nd band)</td>
<td></td>
<td>Gray</td>
<td>Red</td>
<td>Orange</td>
<td>Yellow</td>
<td>Green</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Maximum repetitive peak reverse voltage</td>
<td>V_RRM</td>
<td>50</td>
<td>100</td>
<td>200</td>
<td>400</td>
<td>600</td>
<td>800</td>
<td>V</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>V</td>
</tr>
<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>V</td>
</tr>
<tr>
<td>Maximum average forward rectified current at T_F = 55 °C</td>
<td>I_(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>I_MSK</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 T_A = 55 °C</td>
<td>I_(VW)</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>T_J, T_STG</td>
<td>-65 to +175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>
## ELECTRICAL CHARACTERISTICS (\(T_A = 25 \, ^\circ\text{C}\) 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\text{C})</td>
<td>(I_R)</td>
<td>5.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(\mu\text{A})</td>
</tr>
<tr>
<td></td>
<td>(T_A = 125 , ^\circ\text{C})</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum reverse recovery time</td>
<td>(I_F = 0.5 , \text{A}, , I_R = 1.0 , \text{A}, , I_{rr} = 0.25 , \text{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 (\(T_A = 25 \, ^\circ\text{C}\) 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_{\theta JA}^{(1)})</td>
<td>150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(\degree\text{C/W})</td>
</tr>
<tr>
<td></td>
<td>(R_{\theta JT}^{(2)})</td>
<td></td>
<td></td>
<td></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&quot; 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&quot; diameter plastic tape and reel</td>
</tr>
</tbody>
</table>
RATINGS AND CHARACTERISTICS CURVES \((T_A = 25 \, ^\circ\text{C} \text{ unless otherwise noted})\)

![Graph of Forward Current Derating Curve](image1)

Fig. 1 - Forward Current Derating Curve

![Graph of Instantaneous Reverse Current](image2)

Fig. 4 - Typical Reverse Characteristics

![Graph of Maximum Non-Repetitive Peak Forward Surge Current](image3)

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

![Graph of Typical Instantaneous Forward Characteristics](image4)

Fig. 3 - Typical Instantaneous Forward Characteristics

![Graph of Typical Junction Capacitance](image5)

Fig. 5 - Typical Junction Capacitance
**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**GL34 (DO-213AA)**

- **Solderable Ends**
  - 1st BAND D1
  - 2nd BAND D2

- **Dimensions**
  - D1: 0.048 (1.22)
  - D2: 0.049 (1.25) Min.
  - 0.145 (3.683) Max.

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

**Mounting Pad Layout**

- 0.079 (2.0) Min.
- 0.177 (4.5) REF.

- D1 = D2 = D1 - 0.008 (0.20)

For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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