

### RGL34A, RGL34B, RGL34D, RGL34G, RGL34J, RGL34K

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Vishay General Semiconductor

## Surface Mount Glass Passivated Junction Fast Switching Rectifier

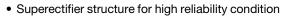
#### SUPERECTIFIER®



DO-213AA (GL34)

| PRIMARY CHARACTERISTICS |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|
| I <sub>F(AV)</sub>      | 0.5 A                                      |  |  |  |  |  |  |
| V <sub>RRM</sub>        | 50 V, 100 V, 200 V, 400 V, 600 V,<br>800 V |  |  |  |  |  |  |
| I <sub>FSM</sub>        | 10 A                                       |  |  |  |  |  |  |
| t <sub>rr</sub>         | 150 ns, 250 ns                             |  |  |  |  |  |  |
| V <sub>F</sub>          | 1.3 V                                      |  |  |  |  |  |  |
| T <sub>J</sub> max.     | 175 °C                                     |  |  |  |  |  |  |
| Package                 | DO-213AA (GL34)                            |  |  |  |  |  |  |
| Diode variation         | Single die                                 |  |  |  |  |  |  |

#### **FEATURES**





- · Ideal for automated placement
- · Fast switching for high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum RoHS 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 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

| <b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)             |                                   |               |        |        |        |        |        |      |
|--|-----------------------------------|---------------|--------|--------|--------|--------|--------|------|
| PARAMETER  | SYMBOL                            | RGL34A        | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT |
| FAST SWITCHING DEVICE: 1st BAND IS RED   | STWIDOL                           |               |        |        |        |        |        |      |
| Polarity color bands (2 <sup>nd</sup> band)  |                                   | Gray          | Red    | Orange | Yellow | Green  | Blue   |      |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$                         | 50            | 100    | 200    | 400    | 600    | 800    | V    |
| Maximum RMS voltage  | V <sub>RMS</sub>                  | 35            | 70     | 140    | 280    | 420    | 560    | V    |
| Maximum DC blocking voltage  | $V_{DC}$                          | 50            | 100    | 200    | 400    | 600    | 800    | V    |
| Maximum average forward rectified current at T <sub>T</sub> = 55 °C                | I <sub>F(AV)</sub>                | 0.5           |        |        |        |        |        | А    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>                  | 10            |        |        |        |        |        | Α    |
| Maximum full load reverse current, full cycle average T <sub>A</sub> = 55 °C       | I <sub>R(AV)</sub>                | 30            |        |        |        |        | μΑ     |      |
| Operating junction and storage temperature range                                   | T <sub>J</sub> , T <sub>STG</sub> | - 65 to + 175 |        |        |        |        | °C     |      |



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| <b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted) |   |                                   |                 |         |        |        |        |        |        |      |
|---|---|-----------------------------------|-----------------|---------|--------|--------|--------|--------|--------|------|
| PARAMETER   | TEST (  | CONDITIONS                        | SYMBOL          | RGL34A  | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT |
| Maximum instantaneous forward voltage   | 0.5 A   |                                   | V <sub>F</sub>  | 1.3     |        |        |        |        | V      |      |
| Maximum DC reverse current at rated DC  |   | T <sub>A</sub> = 25 °C            | I <sub>R</sub>  | 5.0     |        |        |        |        | - μΑ   |      |
| blocking voltage  |   | T <sub>A</sub> = 125 °C           | -11             | 50      |        |        |        |        |        |      |
| Maximum reverse recovery time   | I <sub>F</sub> = 0.5<br>I <sub>rr</sub> = 0.2 | A, I <sub>R</sub> = 1.0 A,<br>5 A | t <sub>rr</sub> | 150 250 |        |        |        | ns     |        |      |
| Typical junction capacitance  | 4.0 V, 1                                      | MHz                               | CJ              | 4       |        |        |        | pF     |        |      |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |        |        |        |        |        |        |      |
|---|---------------------------------|--------|--------|--------|--------|--------|--------|------|
| PARAMETER   | SYMBOL                          | RGL34A | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT |
| Maximum thermal resistance  | R <sub>θJA</sub> <sup>(1)</sup> | 150    |        |        |        |        |        | °C/W |
| iviaximum merma resistance  | R <sub>0JT</sub> (2)            | 70     |        |        |        |        |        | C/VV |

#### **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) |                 |                        |               |                                    |  |  |  |  |  |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|--|--|--|--|--|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |  |  |  |  |  |
| RGL34J-E3/98                   | 0.036           | 98                     | 2500          | 7" diameter plastic tape and reel  |  |  |  |  |  |
| RGL34J-E3/83                   | 0.036           | 83                     | 9000          | 13" diameter plastic tape and reel |  |  |  |  |  |
| RGL34JHE3/98 (1)               | 0.036           | 98                     | 2500          | 7" diameter plastic tape and reel  |  |  |  |  |  |
| RGL34JHE3/83 (1)               | 0.036           | 83                     | 9000          | 13" diameter plastic tape and reel |  |  |  |  |  |

#### Note

### **RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25$ °C unless otherwise noted)

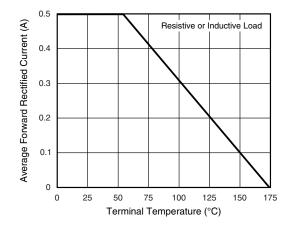


Fig. 1 - Forward Current Derating Curve

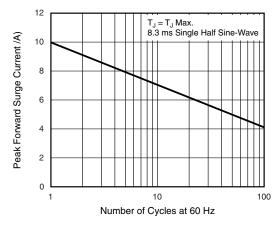


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

<sup>(1)</sup> AEC-Q101 qualified

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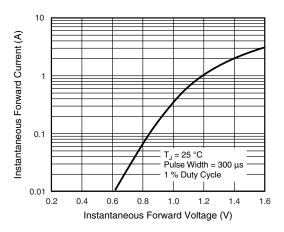


Fig. 3 - Typical Instantaneous Forward Characteristics

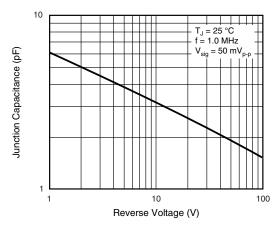


Fig. 5 - Typical Junction Capacitance

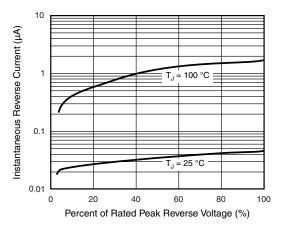
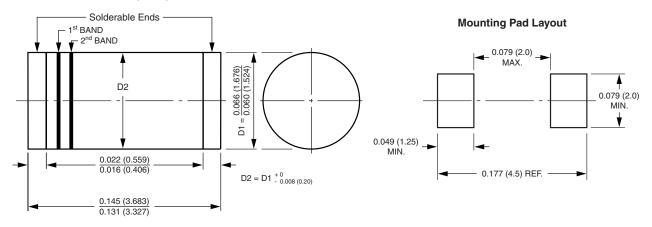


Fig. 4 - Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-213AA (GL34)



<sup>1</sup>st band denotes type and polarity

<sup>2&</sup>lt;sup>nd</sup> band denotes voltage type



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