



## Surface Mount Glass Passivated Junction Fast Switching Rectifier

## SUPERECTIFIER®



DO-213AA (GL34)

## FEATURES

- Superectifier 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](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

## 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 - 1<sup>st</sup> band denotes device type and 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

| PRIMARY CHARACTERISTICS |                                         |
|-------------------------|-----------------------------------------|
| $I_{F(AV)}$             | 0.5 A                                   |
| $V_{RRM}$               | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V |
| $I_{FSM}$               | 10 A                                    |
| $t_{rr}$                | 150 ns, 250 ns                          |
| $V_F$                   | 1.3 V                                   |
| $T_J$ max.              | 175 °C                                  |
| Package                 | DO-213AA (GL34)                         |
| Diode variation         | Single die                              |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)                     |                |               |        |        |        |        |        |      |
|------------------------------------------------------------------------------------|----------------|---------------|--------|--------|--------|--------|--------|------|
| PARAMETER                                                                          | SYMBOL         | RGL34A        | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT |
| FAST SWITCHING DEVICE: 1 <sup>st</sup> BAND IS RED                                 |                |               |        |        |        |        |        |      |
| 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                                                                | $V_{RMS}$      | 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 $T_J = 55\text{ °C}$                  | $I_{F(AV)}$    | 0.5           |        |        |        |        |        | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 10            |        |        |        |        |        | A    |
| Maximum full load reverse current, full cycle average $T_A = 55\text{ °C}$         | $I_{R(AV)}$    | 30            |        |        |        |        |        | μA   |
| Operating junction and storage temperature range                                   | $T_J, T_{STG}$ | - 65 to + 175 |        |        |        |        |        | °C   |



| ELECTRICAL CHARACTERISTICS (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 blocking voltage                    |                                                                          | T <sub>A</sub> = 25 °C  | I <sub>R</sub>  | 5.0    |        |        |        |        |        | μA   |
|                                                                            |                                                                          | T <sub>A</sub> = 125 °C |                 | 50     |        |        |        |        |        |      |
| Maximum reverse recovery time                                              | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                         | t <sub>rr</sub> | 150    |        |        |        | 250    |        | ns   |
| Typical junction capacitance                                               | 4.0 V, 1 MHz                                                             |                         | C <sub>J</sub>  | 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 |
|                                                                         | R <sub>θJT</sub> <sup>(2)</sup> | 70     |        |        |        |        |        |      |

**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

| <b>ORDERING INFORMATION</b> (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 <sup>(1)</sup>           | 0.036           | 98                     | 2500          | 7" diameter plastic tape and reel  |
| RGL34JHE3/83 <sup>(1)</sup>           | 0.036           | 83                     | 9000          | 13" diameter plastic tape and reel |

**Note**

(1) AEC-Q101 qualified

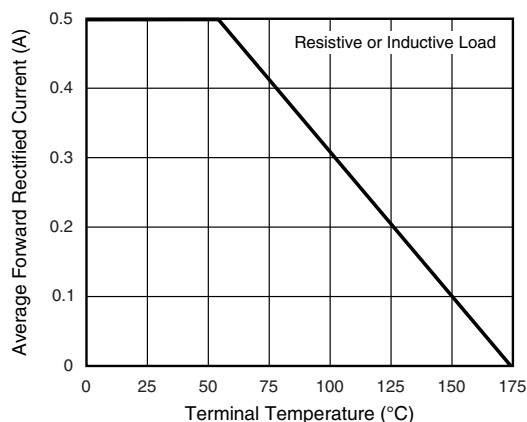
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

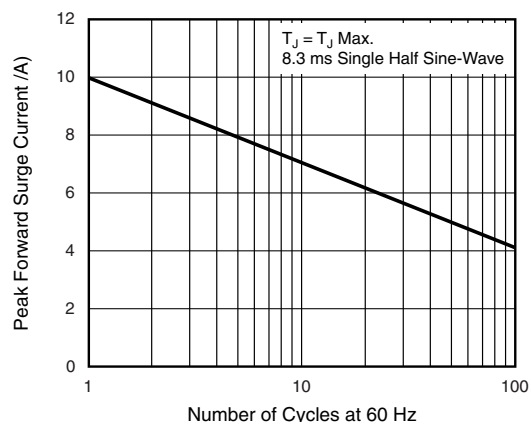


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

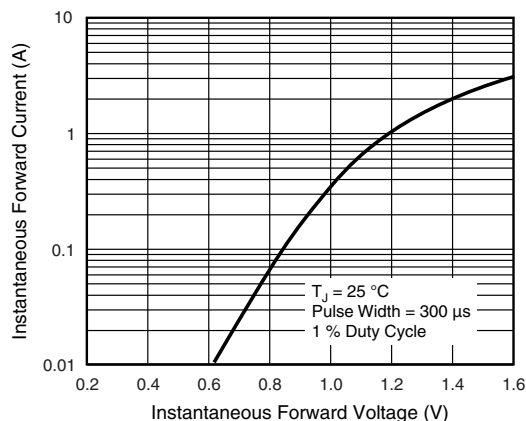


Fig. 3 - Typical Instantaneous Forward Characteristics

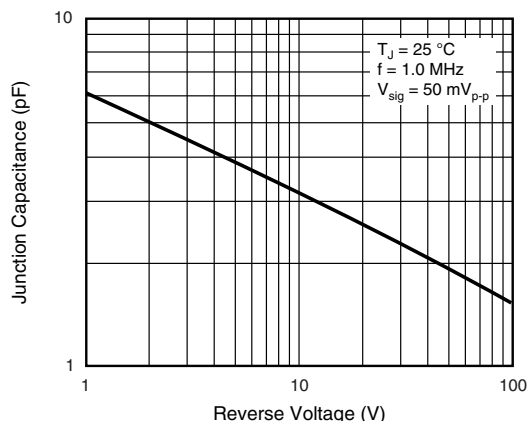


Fig. 5 - Typical Junction Capacitance

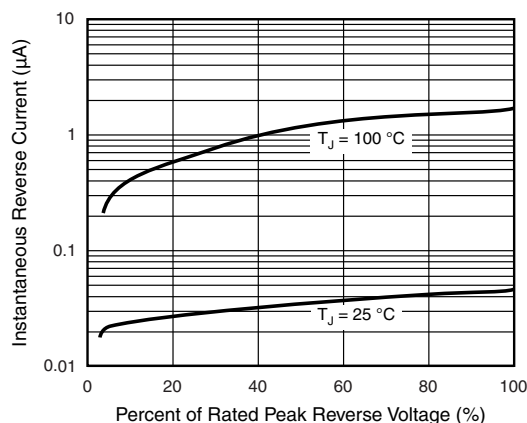
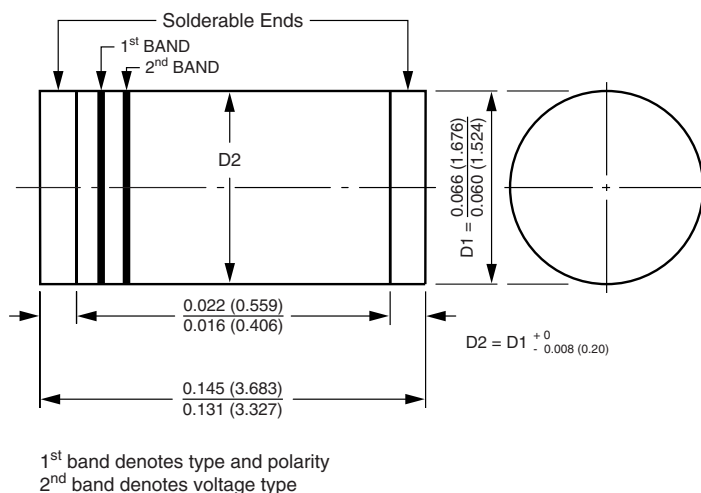


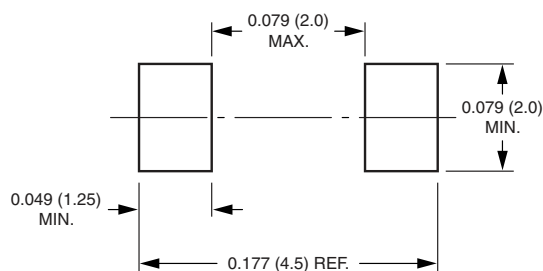
Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-213AA (GL34)



### Mounting Pad Layout





## Disclaimer

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