

# 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 environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC


**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 to 800 V  |
| $I_{FSM}$               | 10 A           |
| $t_{rr}$                | 150 ns, 250 ns |
| $V_F$                   | 1.3 V          |
| $T_J$ max.              | 175 °C         |

| MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)                     |                |               |        |        |        |        |        |         |
|--|----------------|---------------|--------|--------|--------|--------|--------|---------|
| PARAMETER  | SYMBOL         | RGL34A        | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT    |
| <b>FAST SWITCHING DEVICE: 1<sup>st</sup> BAND IS RED</b>                           |                |               |        |        |        |        |        |         |
| 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 $T_T = 55\text{ °C}$                  | $I_{F(AV)}$    | 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            |        |        |        |        |        | $\mu$ A |
| 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

| 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 <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<sub>A</sub> = 25 °C unless otherwise noted)

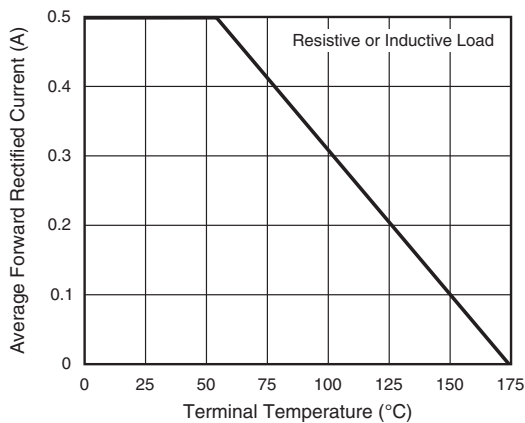


Fig. 1 - Forward Current Derating Curve

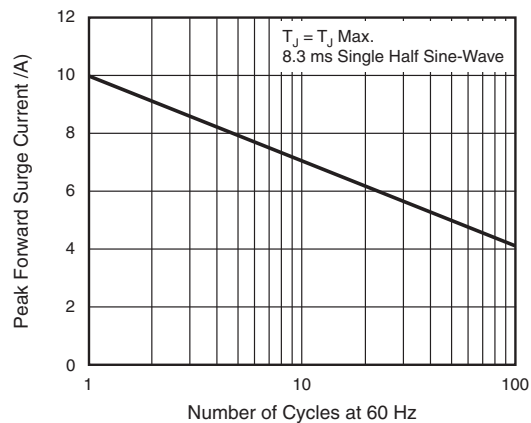


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



Fig. 3 - Typical Instantaneous Forward Characteristics



Fig. 5 - Typical Junction Capacitance

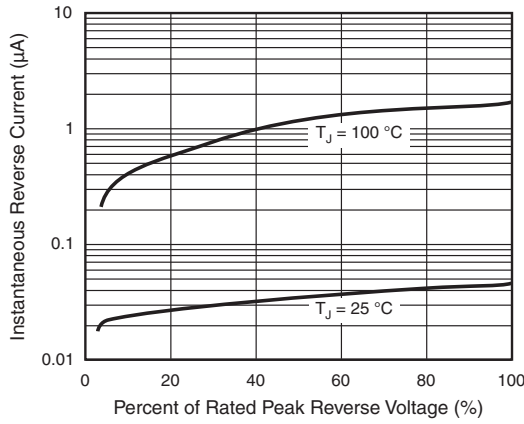
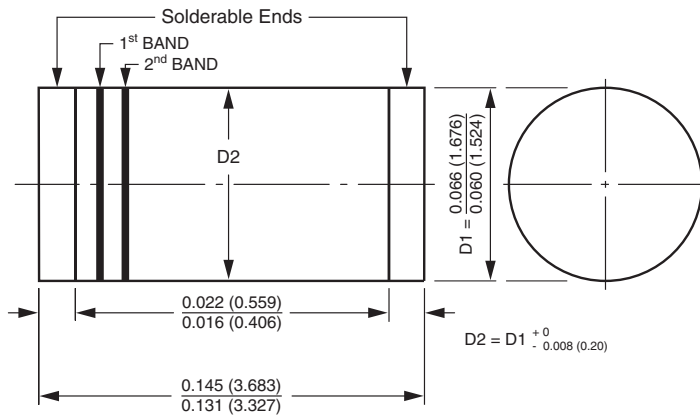


Fig. 4 - Typical Reverse Characteristics

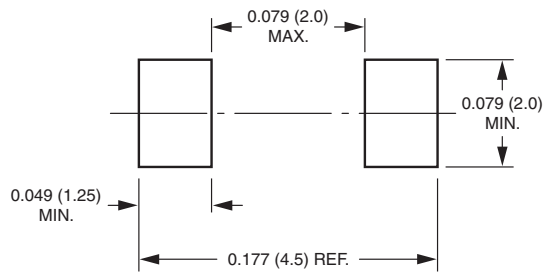
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-213AA (GL34)



1<sup>st</sup> band denotes type and polarity  
2<sup>nd</sup> band denotes voltage type

### Mounting Pad Layout





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