

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 - 1st band denotes device type and 2nd 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 |
| FAST SWITCHING DEVICE: 1st BAND IS RED | | | | | | | | |
| Polarity color bands (2 nd 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 | | | | | | μ A |
| Operating junction and storage temperature range | T_J, T_{STG} | - 65 to + 175 | | | | | | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|---|---|----------|--------|--------|--------|--------|--------|--------|---------------|
| PARAMETER | TEST CONDITIONS | SYMBOL | RGL34A | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT |
| Maximum instantaneous forward voltage | 0.5 A | V_F | 1.3 | | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ | I_R | 5.0 | | | | | | μA |
| | $T_A = 125\text{ }^\circ\text{C}$ | | 50 | | | | | | |
| Maximum reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | 150 | | | | 250 | | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 4 | | | | | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|--|-----------------------|--------|--------|--------|--------|--------|--------|--------------------|--|
| PARAMETER | SYMBOL | RGL34A | RGL34B | RGL34D | RGL34G | RGL34J | RGL34K | UNIT | |
| Maximum thermal resistance | $R_{\theta JA}^{(1)}$ | 150 | | | | | | $^\circ\text{C/W}$ | |
| | $R_{\theta JT}^{(2)}$ | 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 ⁽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

- (1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

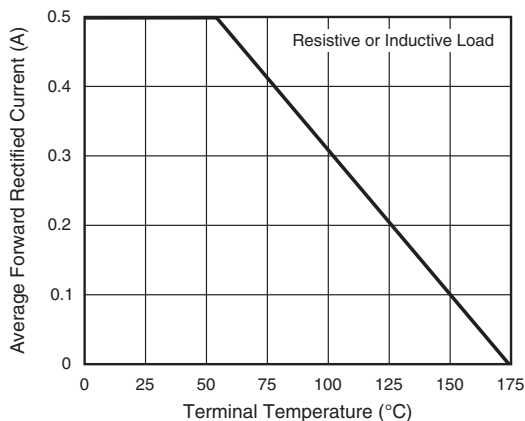


Fig. 1 - Forward Current Derating Curve

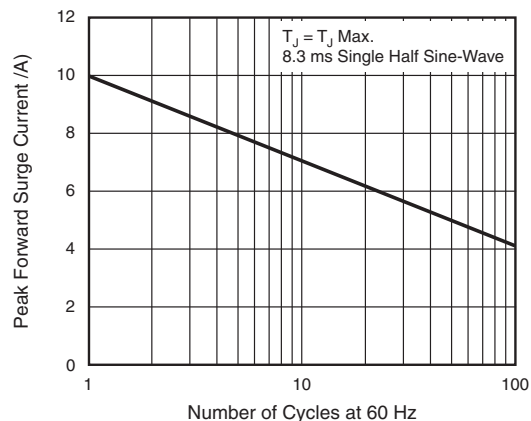


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



Fig. 3 - Typical Instantaneous Forward Characteristics



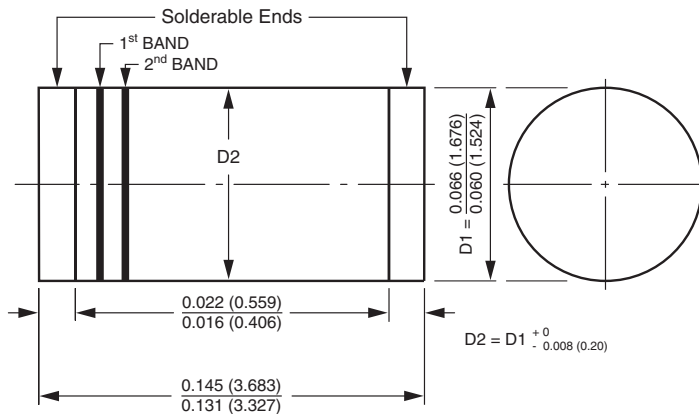
Fig. 5 - Typical Junction Capacitance



Fig. 4 - Typical Reverse Characteristics

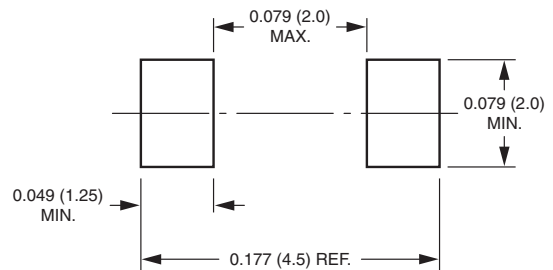
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AA (GL34)



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

Mounting Pad Layout





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