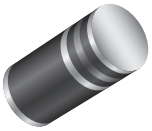
# Surface Mount Glass Passivated Ultrafast Rectifier

**SUPERECTIFIER®**



**DO-213AA (GL34)**

## FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, 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

RoHS COMPLIANT

## TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 0.5 A |
| $V_{RRM}$ | 50 V to 400 V |
| $I_{FSM}$ | 10 A |
| $t_{rr}$ | 50 ns |
| $V_F$ | 1.25 V, 1.35 V |
| $T_J$ max. | 175 °C |
| Package | DO-213AA (GL34) |
| Diode variations | Single die |

## 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

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | BYM07-50 | BYM07-100 | BYM07-150 | BYM07-200 | BYM07-300 | BYM07-400 | UNIT |
|---|---|---|---|---|---|---|---|---|
| Fast efficient device: 1st band is green | | EGL34A | EGL34B | EGL34C | EGL34D | EGL34F | EGL34G | |
| Polarity color bands (2nd band) | | Gray | Red | Pink | Orange | Brown | Yellow | |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | 210 | 280 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | 300 | 400 | V |
| Maximum average forward rectified current at $T_T$ = 75 °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 at $T_A$ = 55 °C | $I_{R(AV)}$ | 50 | | | | | | µA |
| Operating junction and storage temperature range | $T_J$, $T_{STG}$ | - 65 to + 175 | | | | | | °C |



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| ELECTRICAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PARAMETER | TEST CONDITIONS | SYMBOL | BYM07-50 / EGL34A | BYM07-100 / EGL34B | BYM07-150 / EGL34C | BYM07-200 / EGL34D | BYM07-300 / EGL34F | BYM07-400 / EGL34G | UNIT |
| Maximum DC reverse current at rated DC blocking voltage | $T_A$ = 25 °C | $I_R$ (1) | 5.0 | | | | | | µA |
| | $T_A$ = 125 °C | | 50 | | | | | | |
| Maximum instantaneous forward voltage | 0.5 A | $V_F$ (1) | 1.25 | | | | 1.35 | | V |
| Max. reverse recovery time | $I_F$ = 0.5 A, $I_R$ = 1.0 A, $I_{rr}$ = 0.25 A | $t_{rr}$ | 50 | | | | | | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | $C_J$ | 7.0 | | | | | | pF |

**Note**

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

| THERMAL CHARACTERISTICS ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PARAMETER | SYMBOL | BYM07-50 / EGL34A | BYM07-100 / EGL34B | BYM07-150 / EGL34C | BYM07-200 / EGL34D | BYM07-300 / EGL34F | BYM07-400 / EGL34G | UNIT |
| Maximum thermal resistance | $R_{\theta JA}$ (1) | 150 | | | | | | °C/W |
| | $R_{\theta JT}$ (2) | 70 | | | | | | |

**Notes**

(1) Thermal resistance from junction to ambient, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

(2) Thermal resistance from junction to terminal, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

| ORDERING INFORMATION (Example) | | | | |
|---|---|---|---|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| EGL34D-E3/98 | 0.036 | 98 | 2500 | 7" diameter plastic tape and reel |
| EGL34D-E3/83 | 0.036 | 83 | 9000 | 13" diameter plastic tape and reel |
| EGL34DHE3/98 (1) | 0.036 | 98 | 2500 | 7" diameter plastic tape and reel |
| EGL34DHE3/83 (1) | 0.036 | 83 | 9000 | 13" diameter plastic tape and reel |

**Note**

(1) AEC-Q101 qualified

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

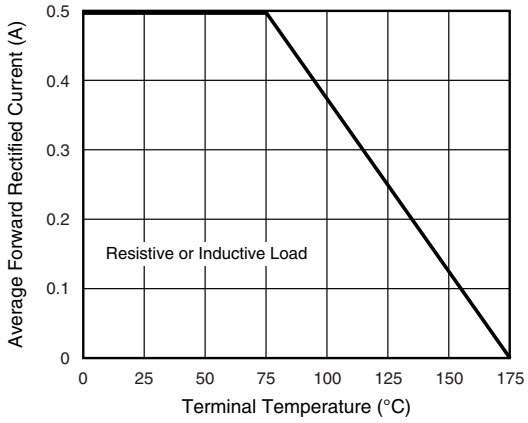



Fig. 1 - Forward Current Derating Curve

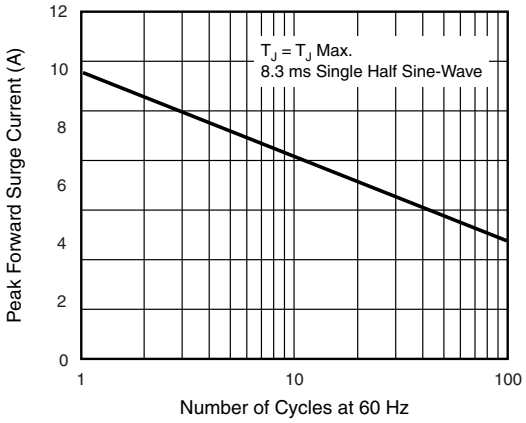



Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current


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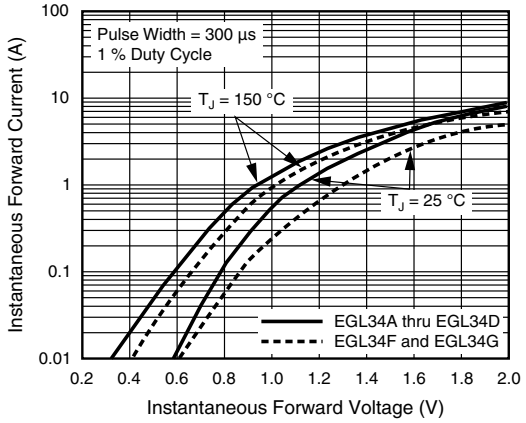



Fig. 3 - Typical Instantaneous Forward Characteristics

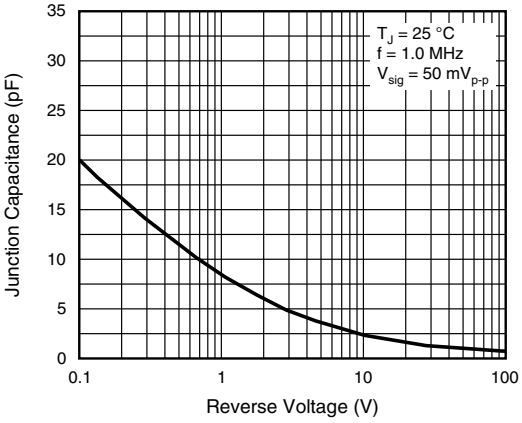



Fig. 5 - Typical Junction Capacitance

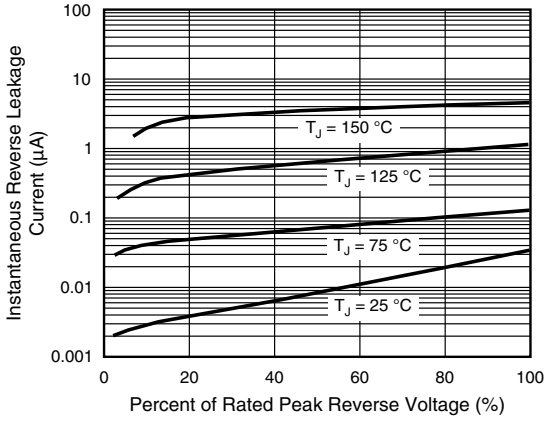



Fig. 4 - Typical Reverse Characteristics

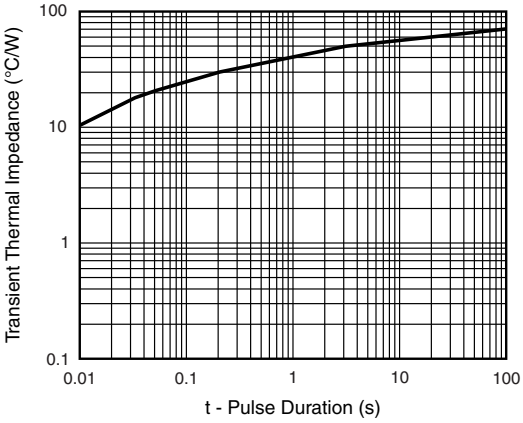
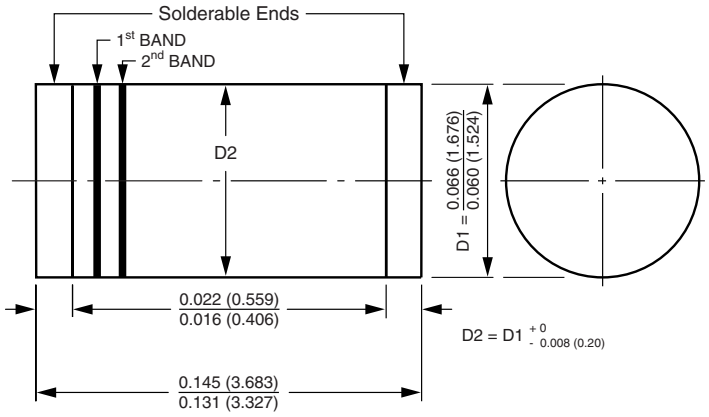



Fig. 6 - Typical Transient Thermal Impedance

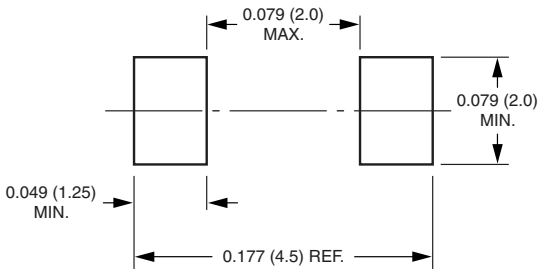
## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-213AA (GL34)**




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

**Mounting Pad Layout**





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