

# Surface-Mount Glass Passivated Ultrafast Rectifier

Superectifier®



GL34 (DO-213AA)

## 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
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** GL34 (DO-213AA), molded epoxy over glass body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A 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 400 V   |
| $I_{FSM}$             | 10 A            |
| $t_{rr}$              | 50 ns           |
| $V_F$                 | 1.25 V, 1.35 V  |
| $T_J$ max.            | 175 °C          |
| Package               | GL34 (DO-213AA) |
| Circuit configuration | Single          |

## MAXIMUM RATINGS 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: 1 <sup>st</sup> band is green                               |                | EGL34A      | EGL34B    | EGL34C    | EGL34D    | EGL34F    | EGL34G    |      |
| Polarity color bands (2 <sup>nd</sup> 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   |

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

| PARAMETER                                               | TEST CONDITIONS                                                                | SYMBOL                        | BYM07-50 | BYM07-100 | BYM07-150 | BYM07-200 | BYM07-300 | BYM07-400 | UNIT |
|---------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------|----------|-----------|-----------|-----------|-----------|-----------|------|
|                                                         |                                                                                |                               | EGL34A   | EGL34B    | EGL34C    | EGL34D    | EGL34F    | EGL34G    |      |
| Maximum DC reverse current at rated DC blocking voltage | T <sub>A</sub> = 25 °C                                                         | I <sub>R</sub> <sup>(1)</sup> | 5.0      |           |           |           |           |           | μA   |
|                                                         | T <sub>A</sub> = 125 °C                                                        |                               | 50       |           |           |           |           |           |      |
| Maximum instantaneous forward voltage                   | 0.5 A                                                                          | V <sub>F</sub> <sup>(1)</sup> | 1.25     |           |           |           | 1.35      |           | V    |
| Max. reverse recovery time                              | I <sub>F</sub> = 0.5 A,<br>I <sub>R</sub> = 1.0 A,<br>I <sub>rr</sub> = 0.25 A | t <sub>rr</sub>               | 50       |           |           |           |           |           | ns   |
| Typical junction capacitance                            | 4.0 V, 1 MHz                                                                   | C <sub>J</sub>                | 7.0      |           |           |           |           |           | pF   |

**Note**

<sup>(1)</sup> Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

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

| PARAMETER                  | SYMBOL                          | BYM07-50 | BYM07-100 | BYM07-150 | BYM07-200 | BYM07-300 | BYM07-400 | UNIT |
|----------------------------|---------------------------------|----------|-----------|-----------|-----------|-----------|-----------|------|
|                            |                                 | EGL34A   | EGL34B    | EGL34C    | EGL34D    | EGL34F    | EGL34G    |      |
| Maximum thermal resistance | R <sub>θJA</sub> <sup>(1)</sup> | 150      |           |           |           |           |           | °C/W |
|                            | R <sub>θJT</sub> <sup>(2)</sup> | 70       |           |           |           |           |           |      |

**Notes**

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

<sup>(2)</sup> 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 |

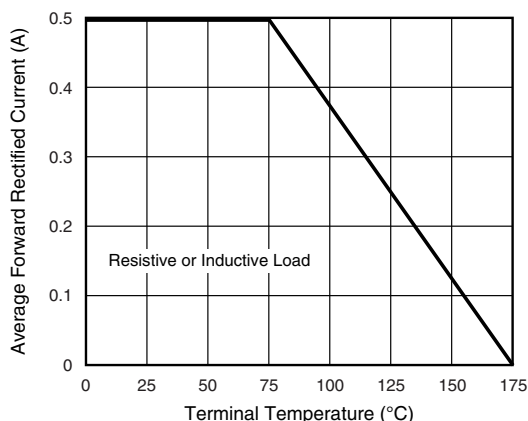
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

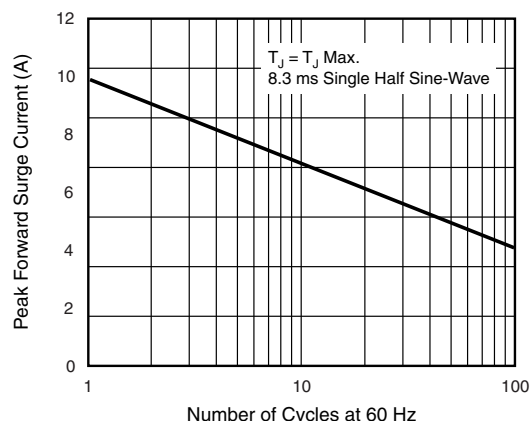


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

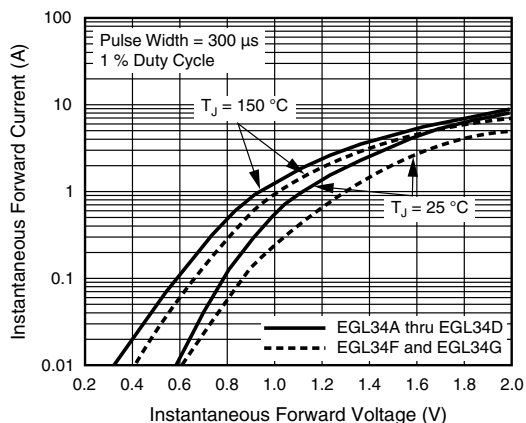


Fig. 3 - Typical Instantaneous Forward Characteristics

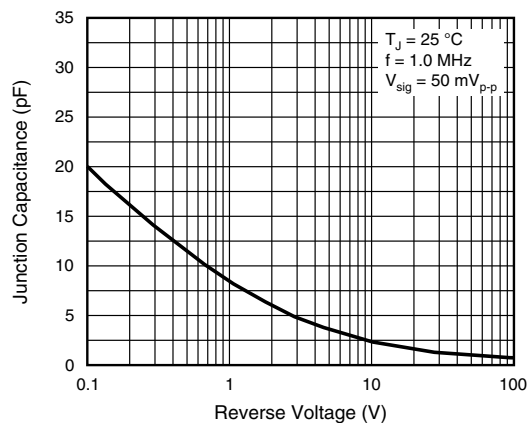


Fig. 5 - Typical Junction Capacitance

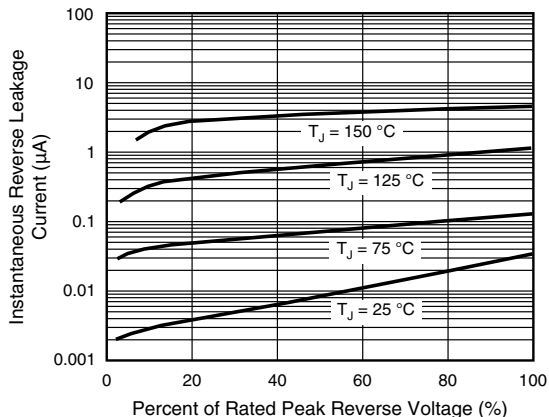


Fig. 4 - Typical Reverse Characteristics

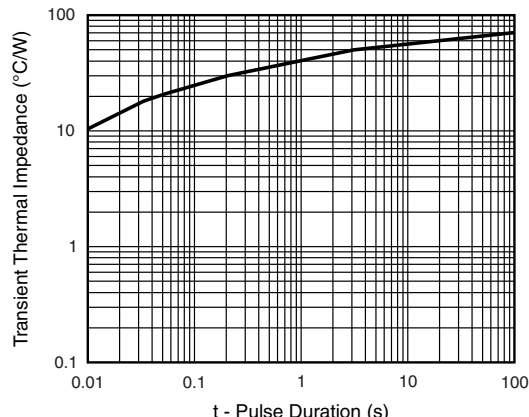
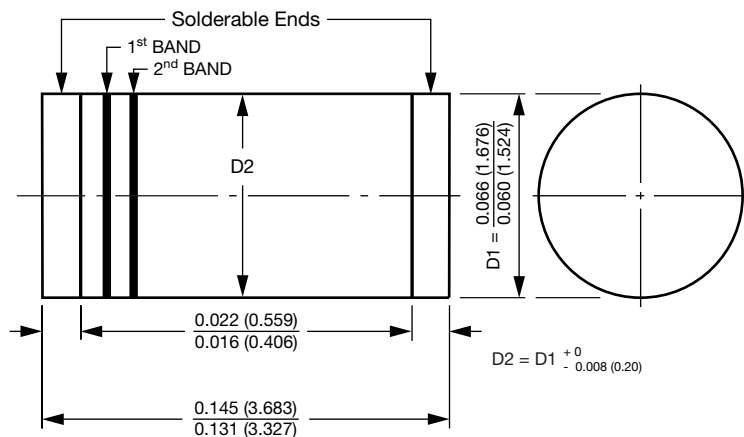


Fig. 6 - Typical Transient Thermal Impedance

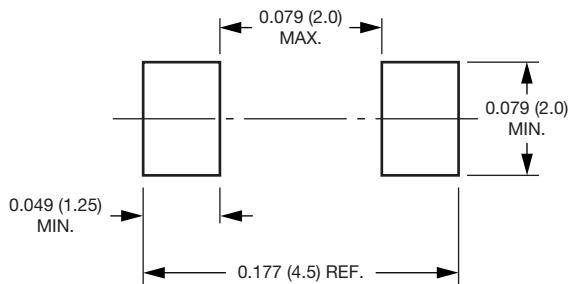
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### GL34 (DO-213AA)



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

### Mounting Pad Layout





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