



Surface Mount Glass Passivated Ultrafast Rectifier



DO-213AA (GL34)

Patented*

*Glass-plastic encapsulation is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

FEATURES

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-213AA, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

| MAJOR RATINGS AND 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 |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 $T_T = 75\text{ °C}$ | $I_{F(AV)}$ | 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 at $T_A = 55\text{ °C}$ | $I_{R(AV)}$ | 50 | | | | | | 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 | 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 ⁽¹⁾ | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$ | I_R | 5.0 50 | | | | | | μA |
| Maximum instantaneous forward voltage ⁽¹⁾ | at 0.5 A | V_F | 1.25 | | | 1.35 | | | V |
| Max. reverse recovery time | at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | 50 | | | | | | ns |
| Typical junction capacitance | at 4.0 V, 1 MHz | C_J | 7.0 | | | | | | pF |

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

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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 ^(1, 2) | $R_{\theta JA}$ | 150 | | | | | | $^\circ\text{C/W}$ |
| | $R_{\theta JT}$ | 70 | | | | | | |

Note:

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

(2) Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 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 & Reel |
| EGL34D-E3/83 | 0.036 | 83 | 9000 | 13" Diameter Plastic Tape & Reel |
| EGL34DHE3/98 ⁽¹⁾ | 0.036 | 98 | 2500 | 7" Diameter Plastic Tape & Reel |
| EGL34DHE3/83 ⁽¹⁾ | 0.036 | 83 | 9000 | 13" Diameter Plastic Tape & Reel |

Note:

(1) Automotive grade AEC Q101 qualified



RATINGS AND CHARACTERISTICS CURVES

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

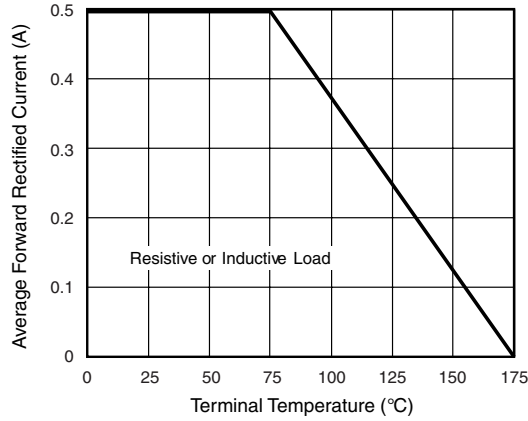


Figure 1. Forward Current Derating Curve

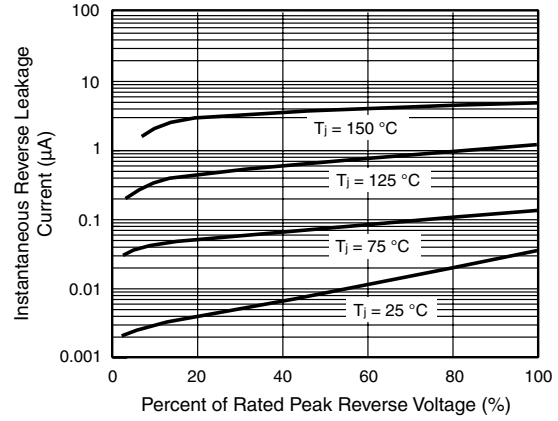


Figure 4. Typical Reverse Characteristics

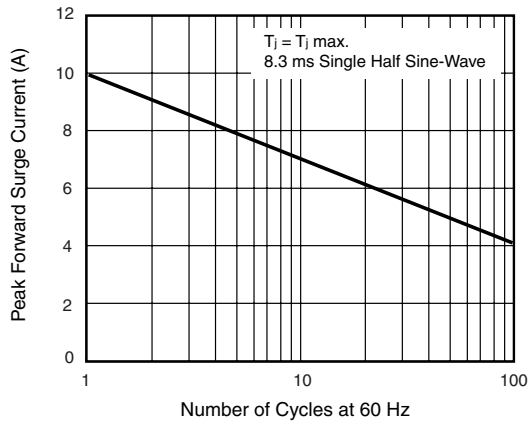


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

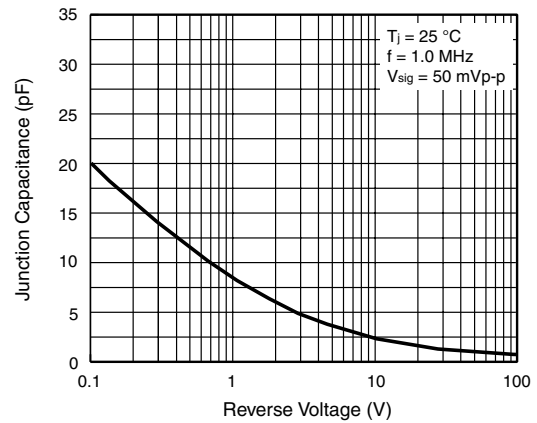


Figure 5. Typical Junction Capacitance

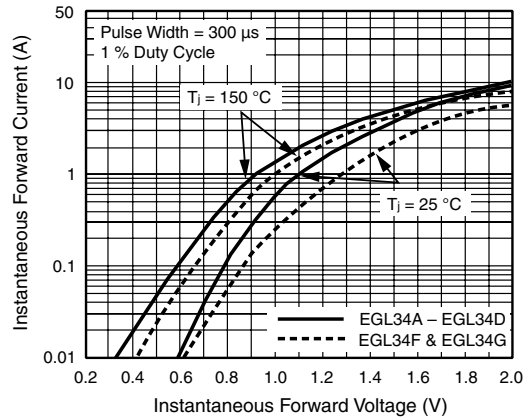


Figure 3. Typical Instantaneous Forward Characteristics

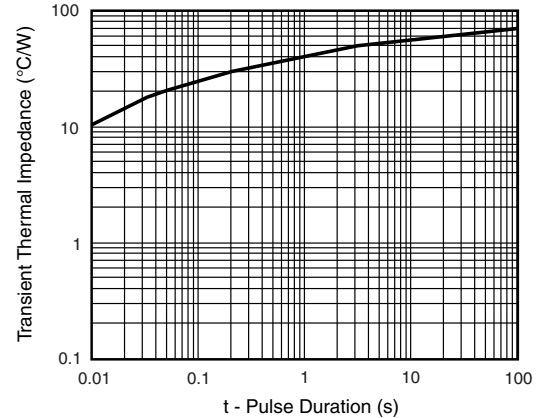
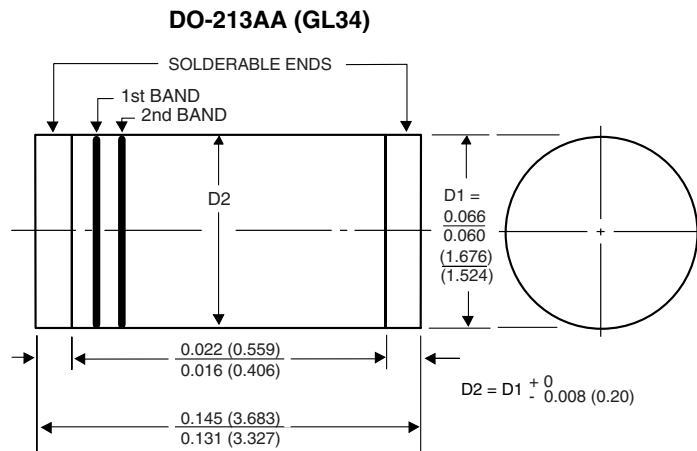


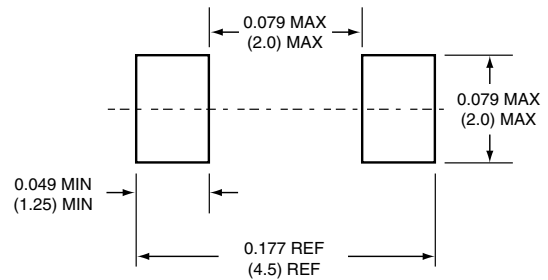
Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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

Mounting Pad Layout





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