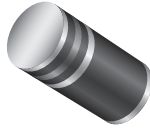


Surface Mount Glass Passivated Ultrafast Rectifier

Superectifier®


GL41 (DO-213AB)

RoHS
COMPLIANT

FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
 - Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see 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: GL41 (DO-213AB), 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_X - RoHS-compliant and AEC-Q101 qualified
("X" denotes revision code e.g. A, B, ...)

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 | |
|-------------------------|-----------------|
| $I_{F(AV)}$ | 1.0 A |
| V_{RRM} | 50 V to 400 V |
| I_{FSM} | 30 A |
| t_{rr} | 50 ns |
| V_F | 1.0 V, 1.25 V |
| T_J max. | 175 °C |
| Package | GL41 (DO-213AB) |
| Diode variations | Single |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted) | | | | | | | | |
|--|----------------|-------------|-----------|-----------|-----------|-----------|-----------|------|
| PARAMETER | SYMBOL | BYM12-50 | BYM12-100 | BYM12-150 | BYM12-200 | BYM12-300 | BYM12-400 | UNIT |
| | | EGL41A | EGL41B | EGL41C | EGL41D | EGL41F | EGL41G | |
| FAST EFFICIENT DEVICE: 1 ST BAND IS GREEN | | | | | | | | |
| Polarity color bands (2 nd 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 $T_T = 75\text{ °C}$ | $I_{F(AV)}$ | 1.0 | | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 30 | | | | | | 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 | BYM12-50 | BYM12-100 | BYM12-150 | BYM12-200 | BYM12-300 | BYM12-400 | UNIT |
| | | | EGL41A | EGL41B | EGL41C | EGL41D | EGL41F | EGL41G | |
| Max. instantaneous forward voltage | 1.0 A | $V_F^{(1)}$ | 1.0 | | | | 1.25 | | V |
| Max. DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ | $I_R^{(1)}$ | 5.0 | | | | | | μA |
| | $T_A = 125\text{ }^\circ\text{C}$ | | 50 | | | | | | |
| Max. reverse recovery time | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$ | t_{rr} | 50 | | | | | | ns |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 20 | | | | 14 | | 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 | BYM12-50 | BYM12-100 | BYM12-150 | BYM12-200 | BYM12-300 | BYM12-400 | UNIT | |
| | | EGL41A | EGL41B | EGL41C | EGL41D | EGL41F | EGL41G | | |
| Maximum thermal resistance | $R_{\theta JA}^{(1)}$ | 60 | | | | | | $^\circ\text{C/W}$ | |
| | $R_{\theta JT}^{(2)}$ | 30 | | | | | | | |

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 |
| EGL41D-E3/96 | 0.114 | 96 | 1500 | 7" diameter plastic tape and reel |
| EGL41D-E3/97 | 0.114 | 97 | 5000 | 13" diameter plastic tape and reel |
| EGL41DHE3_A/I ⁽¹⁾ | 0.114 | I | 5000 | 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)

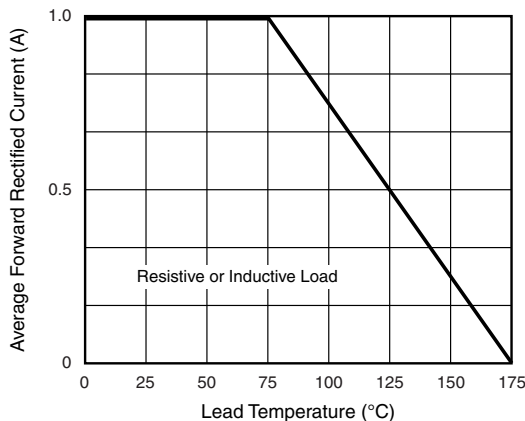


Fig. 1 - Maximum Forward Current Derating Curve

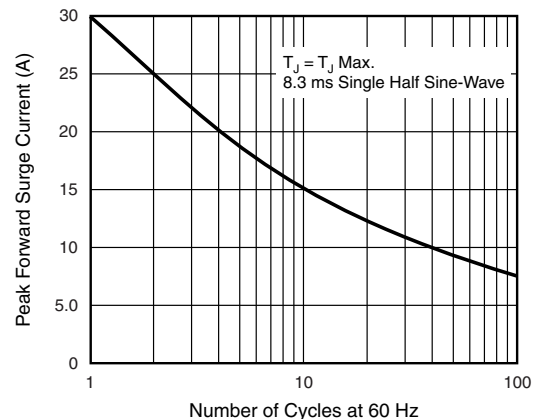


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

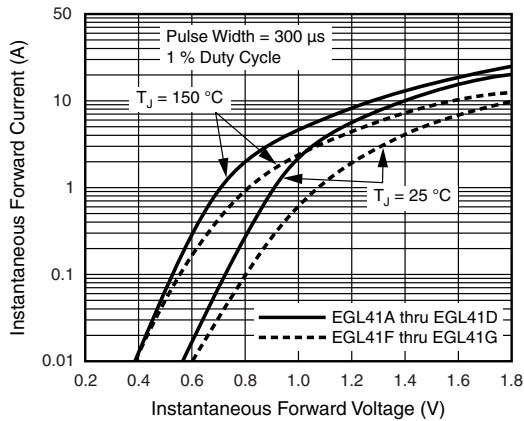


Fig. 3 - Typical Instantaneous Forward Characteristics

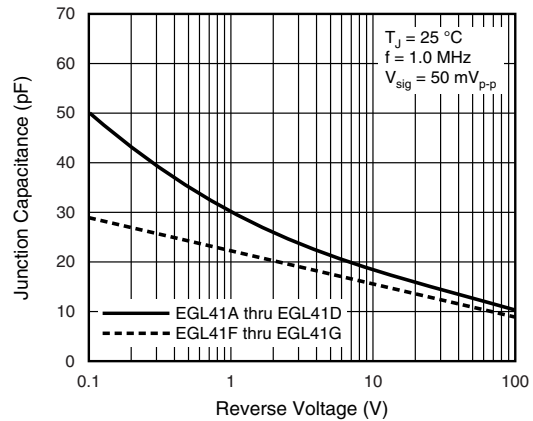


Fig. 5 - Typical Junction Capacitance

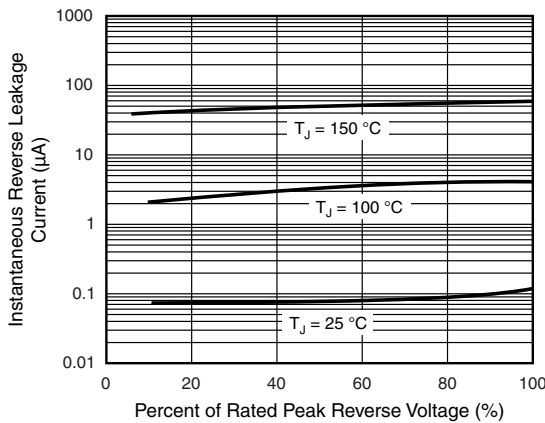


Fig. 4 - Typical Reverse Leakage Characteristics

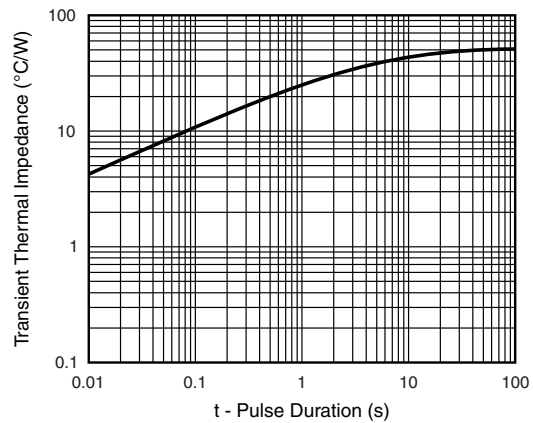
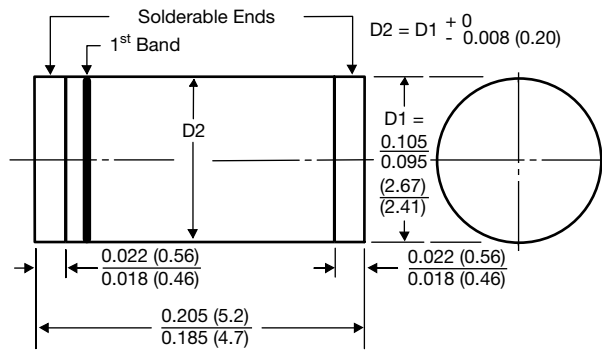


Fig. 6 - Typical Transient Thermal Impedance

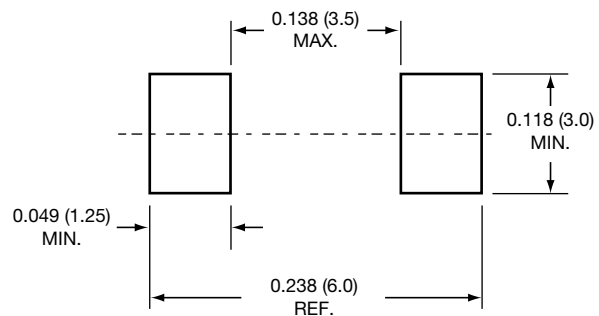
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GL41 (DO-213AB)



1st band denotes type and positive end (cathode)

Mounting Pad Layout





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