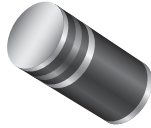


## Surface Mount Glass Passivated Ultrafast Rectifier

**SUPERECTIFIER®**

**DO-213AB (GL41)**
**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
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://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 |                 |
|-------------------------|-----------------|
| $I_{F(AV)}$             | 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                 | DO-213AB (GL41) |
| Diode variations        | Single die      |

**MECHANICAL DATA**

**Case:** 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 - 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 - 1<sup>st</sup> band denotes device type and 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

| 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:<br>1 <sup>ST</sup> BAND IS GREEN                            |                |               |           |           |           |           |           |      |
| 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 $T_T = 75\text{ °C}$                  | $I_{F(AV)}$    | 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   |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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      |           |           |           |           |           | $\mu\text{A}$ |
|  | $T_A = 125\text{ }^\circ\text{C}$  |             | 50       |           |           |           |           |           |               |
| Max. reverse recovery time   | $I_F = 0.5\text{ A}$ ,<br>$I_R = 1.0\text{ A}$ ,<br>$t_{rr} = 0.25\text{ A}$ | $t_{rr}$    | 50       |           |           |           |           |           | ns            |
| Typical junction capacitance   | 4.0 V, 1 MHz   | $C_J$       | 20       |           |           |           | 14        |           | pF            |

**Note**

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

| <b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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

| <b>ORDERING INFORMATION</b> (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 |
| EGL41DHE3/96 <sup>(1)</sup>           | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| EGL41DHE3/97 <sup>(1)</sup>           | 0.114           | 97                     | 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)

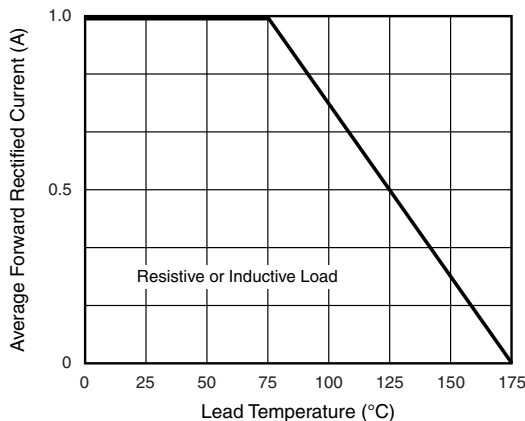


Fig. 1 - Maximum Forward Current Derating Curve

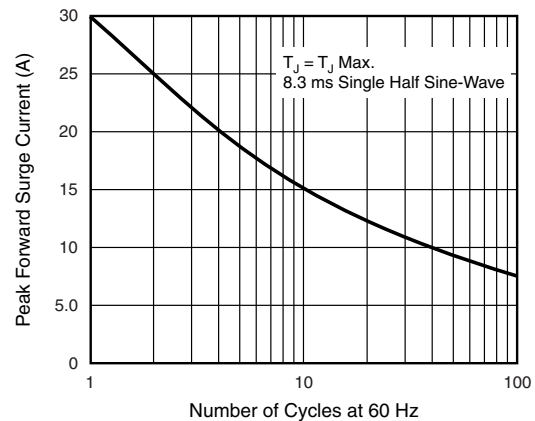


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

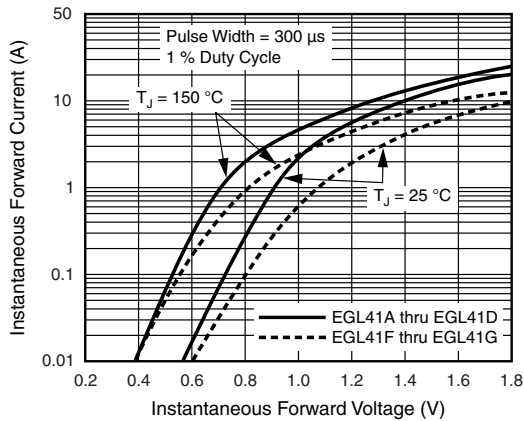


Fig. 3 - Typical Instantaneous Forward Characteristics

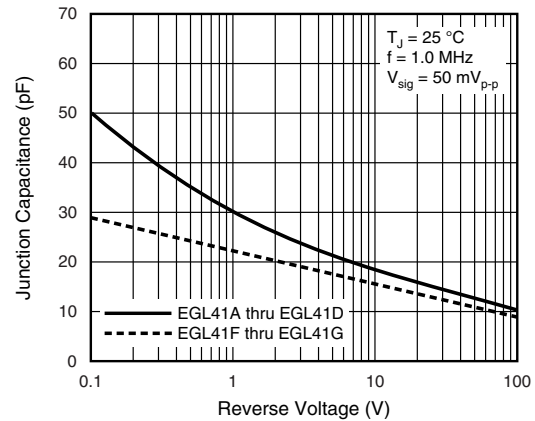


Fig. 5 - Typical Junction Capacitance

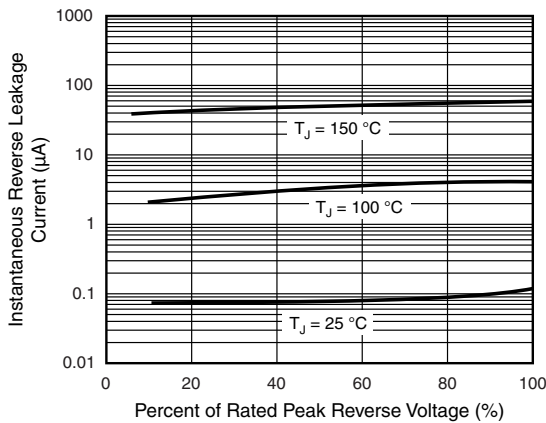


Fig. 4 - Typical Reverse Leakage Characteristics

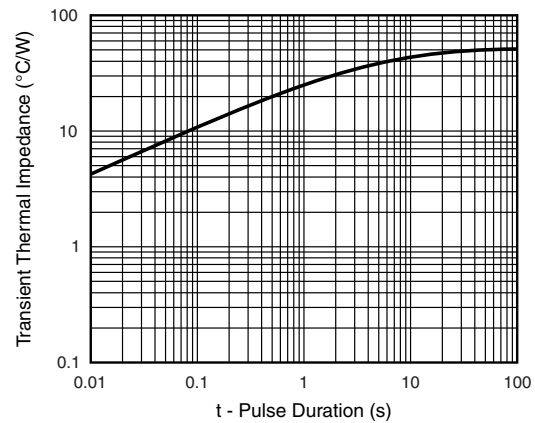
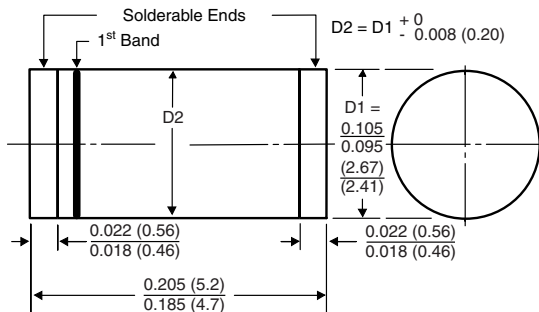


Fig. 6 - Typical Transient Thermal Impedance

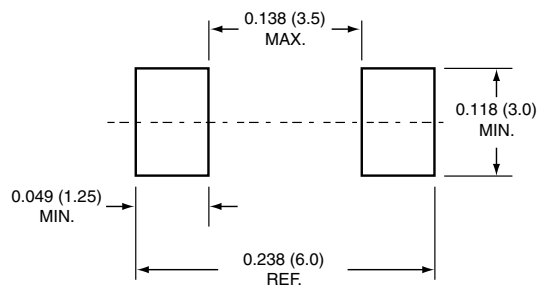
**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-213AB (GL41)**



1<sup>st</sup> Band Denotes Type and Positive End (Cathode)

**Mounting Pad Layout**





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