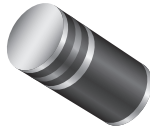


# Surface Mount Glass Passivated Junction Fast Switching Rectifier

Superectifier®


**GL41 (DO-213AB)**

**RoHS**  
COMPLIANT

**FEATURES**

- Superrectifier structure for high reliability condition
- Ideal for automated placement
- Fast switching for high efficiency
- Low leakage current
- 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](http://www.vishay.com/doc?99912)

**TYPICAL APPLICATIONS**

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, 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 - 1<sup>st</sup> band denotes device type and 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

| PRIMARY CHARACTERISTICS |                        |
|-------------------------|------------------------|
| $I_{F(AV)}$             | 1.0 A                  |
| $V_{RRM}$               | 50 V to 1000 V         |
| $I_{FSM}$               | 30 A                   |
| $t_{rr}$                | 150 ns, 250 ns, 500 ns |
| $V_F$                   | 1.3 V                  |
| $T_J$ max.              | 175 °C                 |
| Package                 | GL41 (DO-213AB)        |
| Diode variation         | Single                 |

| MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)                            |                |             |            |            |            |            |            |             |      |
|--|----------------|-------------|------------|------------|------------|------------|------------|-------------|------|
| PARAMETER  | SYMBOL         | BYM 11-50   | BYM 11-100 | BYM 11-200 | BYM 11-400 | BYM 11-600 | BYM 11-800 | BYM 11-1000 | UNIT |
|  |                | RGL41A      | RGL41B     | RGL41D     | RGL41G     | RGL41J     | RGL41K     | RGL41M      |      |
| <b>FAST SWITCHING TIME DEVICE:<br/>1<sup>ST</sup> BAND IS RED</b>                  |                |             |            |            |            |            |            |             |      |
| Polarity color bands (2 <sup>nd</sup> band)  |                | Gray        | Red        | Orange     | Yellow     | Green      | Blue       | Violet      |      |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 50          | 100        | 200        | 400        | 600        | 800        | 1000        | V    |
| Maximum RMS voltage  | $V_{RMS}$      | 35          | 70         | 140        | 280        | 420        | 560        | 700         | V    |
| Maximum DC blocking voltage  | $V_{DC}$       | 50          | 100        | 200        | 400        | 600        | 800        | 1000        | V    |
| Maximum average forward rectified current at $T_T = 55$ °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    |
| 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   | BYM 11-50 | BYM 11-100 | BYM 11-200 | BYM 11-400 | BYM 11-600 | BYM 11-800 | BYM 11-1000 | UNIT          |
|---|--|----------|-----------|------------|------------|------------|------------|------------|-------------|---------------|
| Maximum instantaneous forward voltage                   | 1.0 A  | $V_F$    | 1.3       |            |            |            |            |            |             | V             |
| Maximum DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$                                       | $I_R$    | 5.0       |            |            |            |            |            |             | $\mu\text{A}$ |
|   | $T_A = 125\text{ }^\circ\text{C}$                                      |          | 50        |            |            |            |            |            |             |               |
| Maximum reverse recovery time                           | $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$ | $t_{rr}$ | 150       |            |            | 250        | 500        |            |             | ns            |
| Typical junction capacitance                            | 4.0 V, 1 MHz   | $C_J$    | 15        |            |            |            |            |            |             | pF            |

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

| PARAMETER                  | SYMBOL                | BYM 11-50 | BYM 11-100 | BYM 11-200 | BYM 11-400 | BYM 11-600 | BYM 11-800 | BYM 11-1000 | UNIT               |
|----------------------------|-----------------------|-----------|------------|------------|------------|------------|------------|-------------|--------------------|
| Maximum thermal resistance | $R_{\theta JA}^{(1)}$ | 75        |            |            |            |            |            |             | $^\circ\text{C/W}$ |
|                            | $R_{\theta JT}^{(2)}$ | 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                      |
|----------------------------------|-----------------|------------------------|---------------|------------------------------------|
| RGL41J-E3/96                     | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| RGL41J-E3/97                     | 0.114           | 97                     | 5000          | 13" diameter plastic tape and reel |
| BYM11-800HE3_A <sup>(1)(2)</sup> | 0.114           | H                      | 1500          | 7" diameter plastic tape and reel  |
| RGL41KHE3_AI <sup>(1)(2)</sup>   | 0.114           | I                      | 5000          | 13" diameter plastic tape and reel |

**Notes**

- (1) AEC-Q101 qualified
- (2) \_A is only applied for K and M class

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

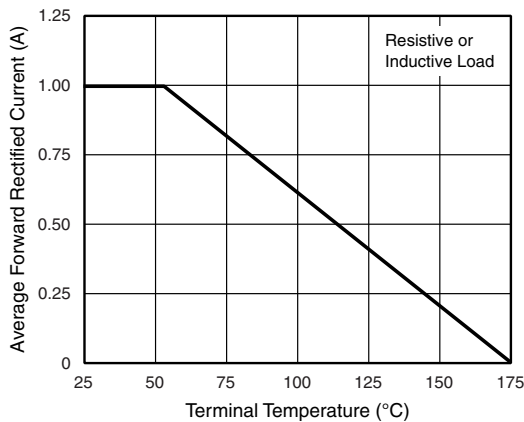


Fig. 1 - Forward Current Derating Curve

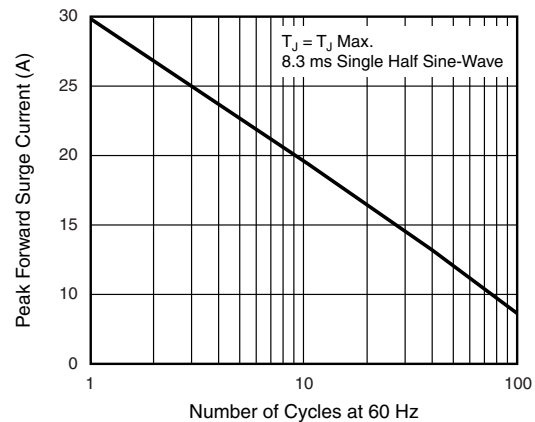


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

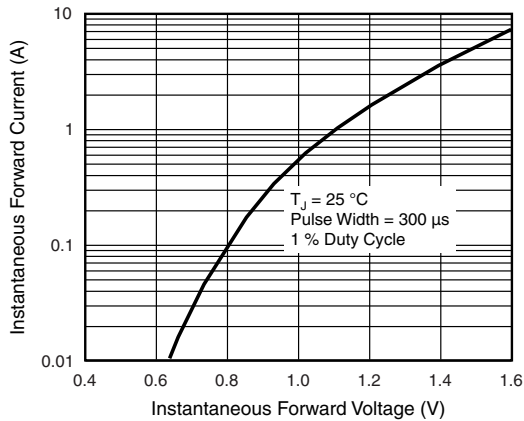


Fig. 3 - Typical Instantaneous Forward Characteristics

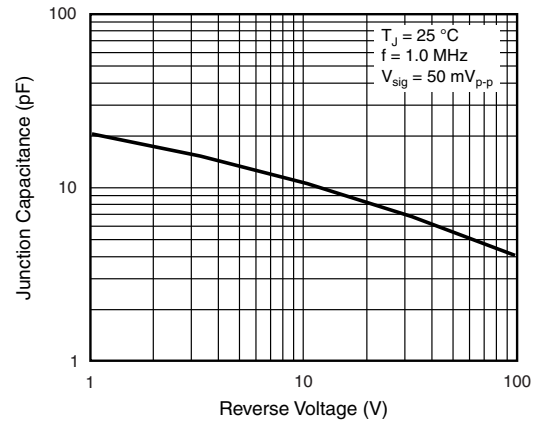


Fig. 5 - Typical Junction Capacitance

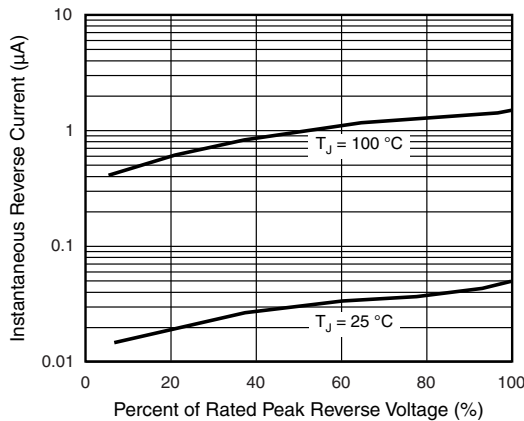


Fig. 4 - Typical Reverse Characteristics

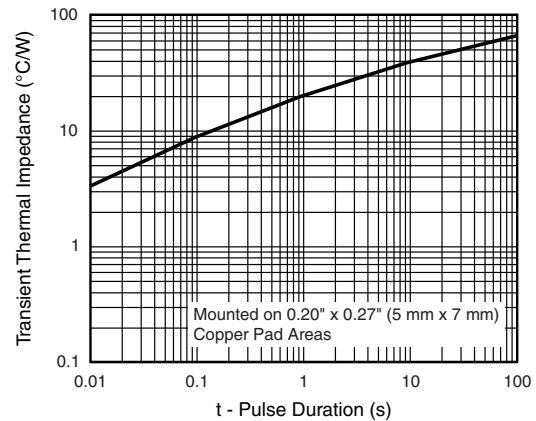
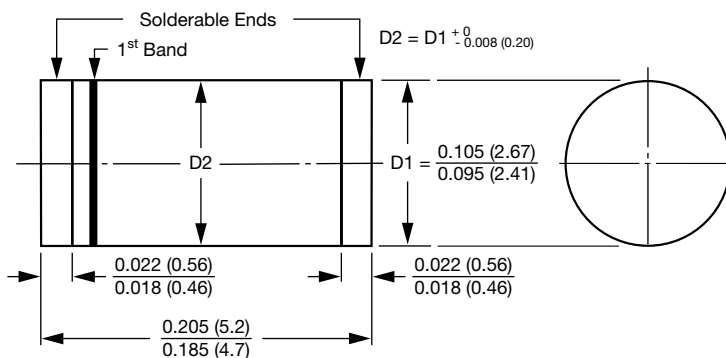


Fig. 6 - Typical Transient Thermal Impedance

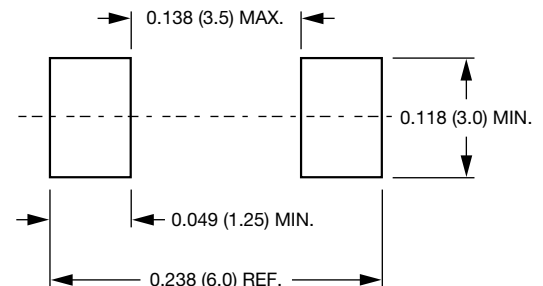
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### GL41 (DO-213AB)



1<sup>st</sup> band denotes type and positive end (cathode)

### Mounting Pad Layout





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