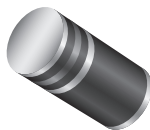


# Surface-Mount Glass Passivated Junction Fast Switching Rectifier

Superectifier®



GL41 (DO-213AB)

## FEATURES

- Superectifier 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
- 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 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

**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

|                       |                        |
|-----------------------|------------------------|
| $I_{F(AV)}$           | 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)        |
| Circuit configuration | 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 |
|------------------------------------------------------------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------|
| <b>FAST SWITCHING TIME DEVICE: 1<sup>ST</sup> BAND IS RED</b>                      |                | <b>RGL41A</b> | <b>RGL41B</b> | <b>RGL41D</b> | <b>RGL41G</b> | <b>RGL41J</b> | <b>RGL41K</b> | <b>RGL41M</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<br>11-50 | BYM<br>11-100 | BYM<br>11-200 | BYM<br>11-400 | BYM<br>11-600 | BYM<br>11-800 | BYM<br>11-1000 | UNIT |
|---------------------------------------------------------|--------------------------------------------------------------------------|-------------------------|-----------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|------|
| Maximum instantaneous forward voltage                   | 1.0 A                                                                    |                         | V <sub>F</sub>  | 1.3          |               |               |               |               |               |                | V    |
| Maximum DC reverse current at rated DC blocking voltage |                                                                          | T <sub>A</sub> = 25 °C  | I <sub>R</sub>  | 5.0          |               |               |               |               |               |                | μA   |
|                                                         |                                                                          | T <sub>A</sub> = 125 °C |                 | 50           |               |               |               |               |               |                |      |
| Maximum reverse recovery time                           | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                         | t <sub>rr</sub> | 150          |               |               |               | 250           | 500           |                | ns   |
| Typical junction capacitance                            | 4.0 V, 1 MHz                                                             |                         | C <sub>J</sub>  | 15           |               |               |               |               |               |                | pF   |

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

| PARAMETER                  | SYMBOL                          | BYM<br>11-50 | BYM<br>11-100 | BYM<br>11-200 | BYM<br>11-400 | BYM<br>11-600 | BYM<br>11-800 | BYM<br>11-1000 | UNIT |
|----------------------------|---------------------------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|------|
| Maximum thermal resistance | R <sub>θJA</sub> <sup>(1)</sup> | 75           |               |               |               |               |               |                | °C/W |
|                            | R <sub>θJT</sub> <sup>(2)</sup> | 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 |

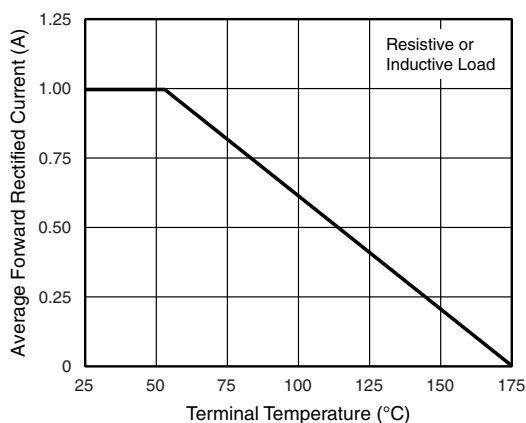
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

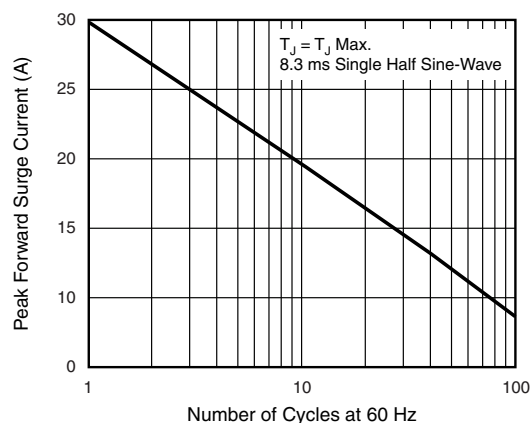


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

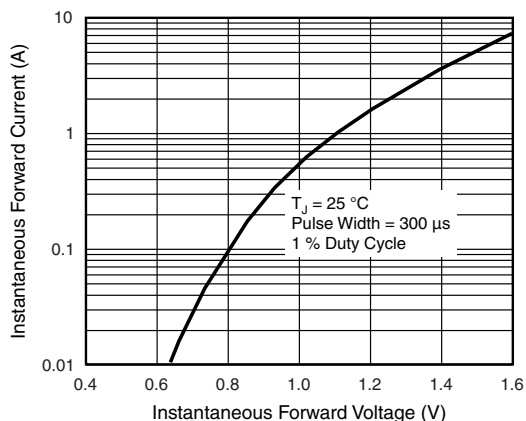


Fig. 3 - Typical Instantaneous Forward Characteristics

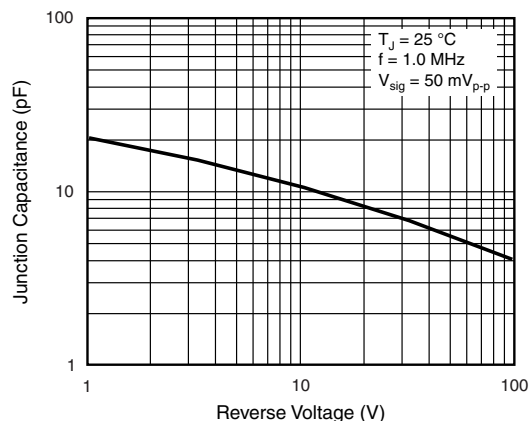


Fig. 5 - Typical Junction Capacitance

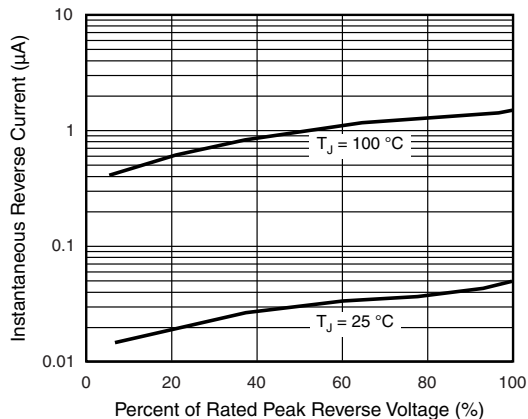


Fig. 4 - Typical Reverse Characteristics

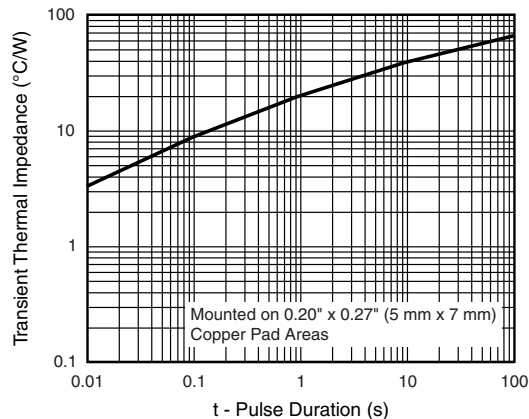
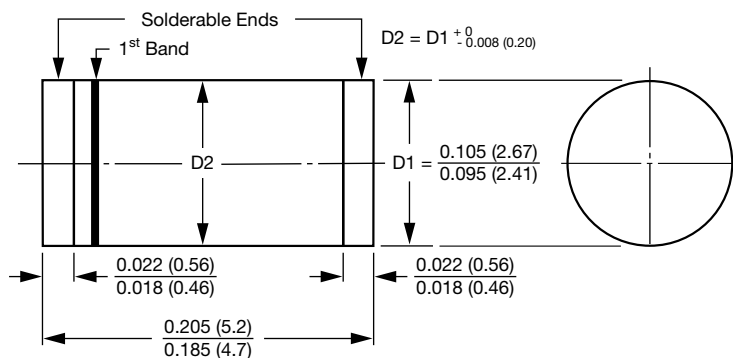


Fig. 6 - Typical Transient Thermal Impedance

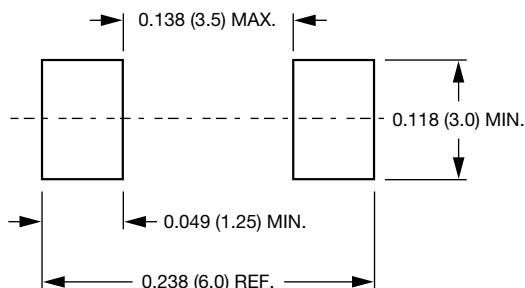
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### GL41 (DO-213AB)



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

### Mounting Pad Layout





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