

## Surface Mount Glass Passivated Junction Rectifier

**SUPERECTIFIER®**

**DO-213AB**

| PRIMARY CHARACTERISTICS      |                                |
|------------------------------|--------------------------------|
| $I_{F(AV)}$                  | 1.0 A                          |
| $V_{RRM}$ (BYM10-xxx, GL41x) | 50 V to 1000 V, 50 V to 1600 V |
| $I_{FSM}$                    | 30 A                           |
| $I_R$                        | 10 $\mu$ A                     |
| $E_{AS}$                     | 5 mJ                           |
| $V_F$                        | 1.1 V, 1.2 V                   |
| $T_J$ max.                   | 175 °C                         |
| Package                      | DO-213AB                       |
| Diode variations             | Single die                     |

**FEATURES**

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

**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 ( $T_A = 25$ °C unless otherwise noted)                                    |                |               |            |            |            |            |            |             |       |       |         |
|--|----------------|---------------|------------|------------|------------|------------|------------|-------------|-------|-------|---------|
| PARAMETER  | SYMBOL         | BYM 10-50     | BYM 10-100 | BYM 10-200 | BYM 10-400 | BYM 10-600 | BYM 10-800 | BYM 10-1000 |       |       | UNIT    |
| STANDARD RECOVERY DEVICE: 1 <sup>ST</sup> BAND IS WHITE                                    |                | GL41A         | GL41B      | GL41D      | GL41G      | GL41J      | GL41K      | GL41M       | GL41T | GL41Y |         |
| Polarity color bands (2 <sup>nd</sup> band)  |                | Gray          | Red        | Orange     | Yellow     | Green      | Blue       | Violet      | White | Brown |         |
| Max. repetitive peak reverse voltage   | $V_{RRM}$      | 50            | 100        | 200        | 400        | 600        | 800        | 1000        | 1300  | 1600  | V       |
| Max. RMS voltage   | $V_{RMS}$      | 35            | 70         | 140        | 280        | 420        | 560        | 700         | 910   | 1120  | V       |
| Max. DC blocking voltage   | $V_{DC}$       | 50            | 100        | 200        | 400        | 600        | 800        | 1000        | 1300  | 1600  | V       |
| Max. average forward rectified current (fig. 1)  | $I_{F(AV)}$    | 1.0           |            |            |            |            |            |             |       |       | A       |
| Peak forward surge current 8.3 ms single half sine-wave                                    | $I_{FSM}$      | 30            |            |            |            |            |            |             |       |       | A       |
| Max. full load reverse current full cycle average at $T_A = 75$ °C                         | $I_{R(AV)}$    | 30            |            |            |            |            |            |             |       |       | $\mu$ A |
| Non-repetitive peak reverse avalanche energy at $T_J = 25$ °C, $I_{AS} = 1$ A, $L = 10$ mH | $E_{AS}$       | 5             |            |            |            |            |            |             | -     |       | mJ      |
| Operating junction and storage temperature range   | $T_J, T_{STG}$ | - 65 to + 175 |            |            |            |            |            |             |       |       | °C      |



| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                         |                |           |            |            |            |            |            |             |       |       |      |    |
|--|-------------------------|----------------|-----------|------------|------------|------------|------------|------------|-------------|-------|-------|------|----|
| PARAMETER  | TEST CONDITIONS         | SYMBOL         | BYM 10-50 | BYM 10-100 | BYM 10-200 | BYM 10-400 | BYM 10-600 | BYM 10-800 | BYM 10-1000 |       |       | UNIT |    |
|  |                         |                | GL41A     | GL41B      | GL41D      | GL41G      | GL41J      | GL41K      | GL41M       | GL41T | GL41Y |      |    |
| Max. instantaneous forward voltage   | 1.0 A                   | V <sub>F</sub> | 1.1       |            |            |            |            | 1.2        |             |       |       |      | V  |
| Max. DC reverse current at rated DC blocking voltage                       | T <sub>A</sub> = 25 °C  | I <sub>R</sub> | 10        |            |            |            |            |            |             |       |       | μA   |    |
|  | T <sub>A</sub> = 125 °C |                | 50        |            |            |            |            |            |             |       |       |      |    |
| Typical junction capacitance   | 4.0 V, 1 MHz            | C <sub>J</sub> | 8.0       |            |            |            |            |            |             |       |       |      | pF |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                 |           |            |            |            |            |            |             |       |       |      |      |
|---|---------------------------------|-----------|------------|------------|------------|------------|------------|-------------|-------|-------|------|------|
| PARAMETER   | SYMBOL                          | BYM 10-50 | BYM 10-100 | BYM 10-200 | BYM 10-400 | BYM 10-600 | BYM 10-800 | BYM 10-1000 |       |       |      | UNIT |
|   |                                 | GL41A     | GL41B      | GL41D      | GL41G      | GL41J      | GL41K      | GL41M       | GL41T | GL41Y |      |      |
| Typical 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                      |
| BYM10-600-E3/96                | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| BYM10-600-E3/97                | 0.114           | 97                     | 5000          | 13" diameter plastic tape and reel |
| GL41J-E3/96                    | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| GL41J-E3/97                    | 0.114           | 97                     | 5000          | 13" diameter plastic tape and reel |
| BYM10-600HE3/96 <sup>(1)</sup> | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| BYM10-600HE3/97 <sup>(1)</sup> | 0.114           | 97                     | 5000          | 13" diameter plastic tape and reel |
| GL41JHE3/96 <sup>(1)</sup>     | 0.114           | 96                     | 1500          | 7" diameter plastic tape and reel  |
| GL41JHE3/97 <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)

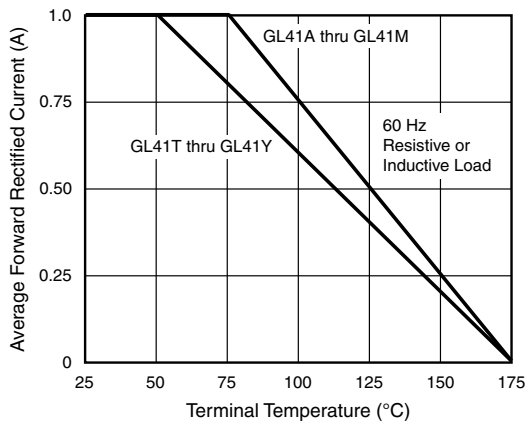


Fig. 1 - Forward Current Derating Curve

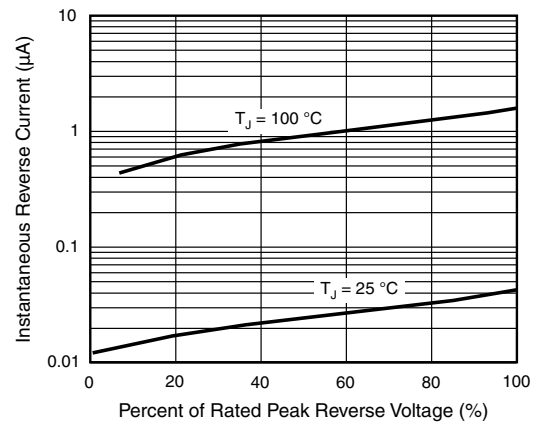


Fig. 4 - Typical Reverse Characteristics

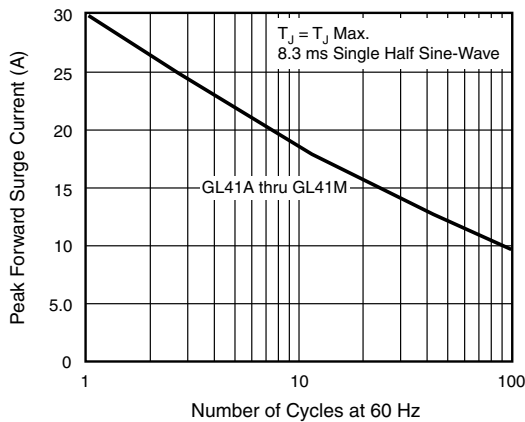


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

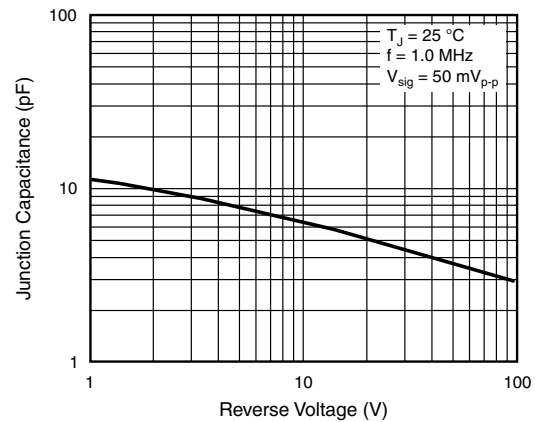


Fig. 5 - Typical Junction Capacitance

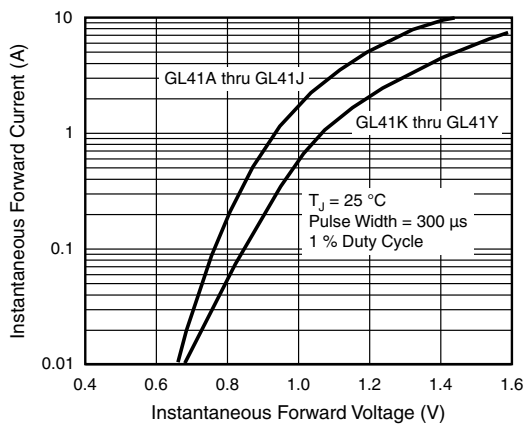


Fig. 3 - Typical Instantaneous Forward Characteristics

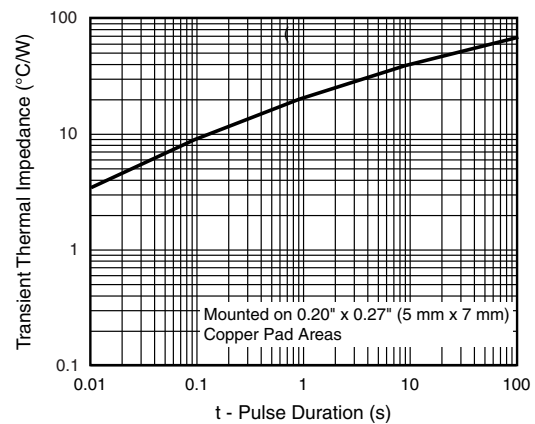


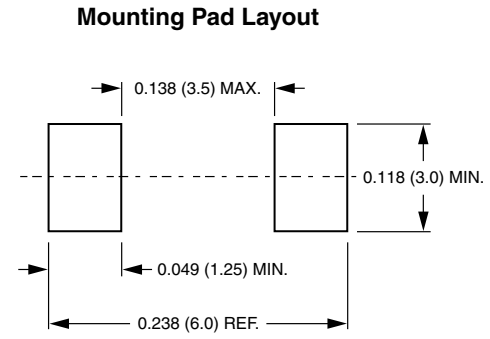
Fig. 6 - Typical Transient Thermal Impedance



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



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





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