

Surface-Mount Glass Passivated Junction Rectifier

Superectifier®


MELF (DO-213AB)

FEATURES

- Superrectifier 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
- Material categorization: for definitions of compliance please see 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.

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 μ A |
| E_{AS} | 5 mJ |
| V_F | 1.1 V, 1.2 V |
| T_J max. | 175 °C |
| Package | MELF (DO-213AB) |
| Circuit configuration | Single |

MECHANICAL DATA

Case: MELF (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 - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 | |
| Polarity color bands (2 nd 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 $T_A = 75\text{ °C}$ | $I_{R(AV)}$ | 30 | | | | | | | | | μ A |
| Non-repetitive peak reverse avalanche energy at $T_J = 25\text{ °C}$, $I_{AS} = 1\text{ A}$, $L = 10\text{ mH}$ | E_{AS} | 5 | | | | | | | - | | mJ |
| 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 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_F | 1.1 | | | | | 1.2 | | | | V | |
| Max. DC reverse current at rated DC blocking voltage | $T_A = 25\text{ }^\circ\text{C}$ | I_R | 10 | | | | | | | | | μA | |
| | $T_A = 125\text{ }^\circ\text{C}$ | | 50 | | | | | | | | | | |
| Typical junction capacitance | 4.0 V, 1 MHz | C_J | 8.0 | | | | | | | | | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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 | $R_{\theta JA}^{(1)}$ | 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 |
| 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 |



RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °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

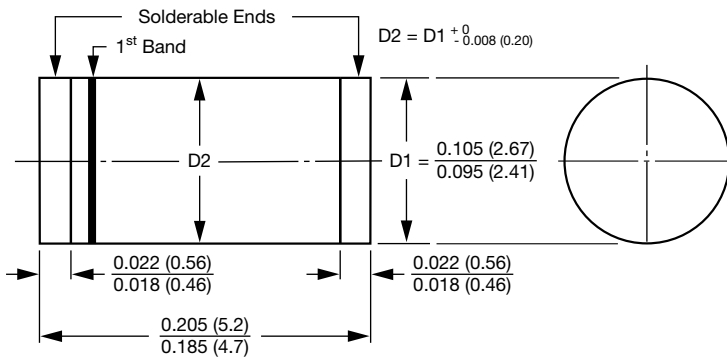


Fig. 6 - Typical Transient Thermal Impedance



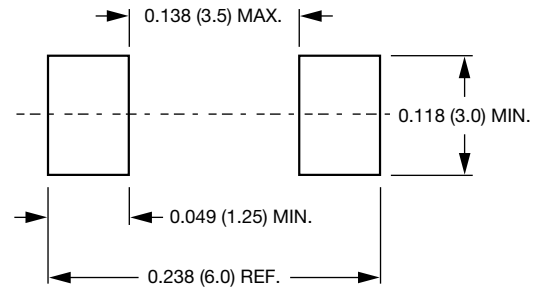
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GL41 (DO-213AB)



1st band denotes type and positive end (cathode)

Mounting Pad Layout





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