



Surface Mount Glass Passivated Ultrafast Rectifier

Major Ratings and 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 |
| $T_j \text{ max.}$ | 175 °C |



DO-213AB (GL41)

Patented*

*Glass-plastic encapsulation is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

Features

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds



Mechanical Data

Case: DO-213AB, molded epoxy over glass body
Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Two bands indicate cathode end - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and Telecommunication

Maximum Ratings

$T_A = 25 \text{ °C}$ unless otherwise specified

| Parameter | Symbol | BYM12-50 | BYM12-100 | BYM12-150 | BYM12-200 | BYM12-300 | BYM12-400 | Unit |
|--|----------------|---------------|-----------|-----------|-----------|-----------|-----------|------|
| Fast efficient device: 1st band is Green | | EGL41A | EGL41B | EGL41C | EGL41D | EGL41F | EGL41G | |
| Polarity color bands (2nd 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 |

Electrical Characteristics

T_A = 25 °C unless otherwise specified

| Parameter | Test condition | Symbol | BYM12-50 EGL41A | BYM12-100 EGL41B | BYM12-150 EGL41C | BYM12-200 EGL41D | BYM12-300 EGL41F | BYM12-400 EGL41G | Unit |
|--|---|-----------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|
| Maximum instantaneous forward voltage ⁽¹⁾ | at 1.0 A | V _F | 1.0 | | | | 1.25 | | V |
| Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾ | T _A = 25 °C T _A = 125 °C | I _R | 5.0 50 | | | | | | μA |
| Max. reverse recovery time | at I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A | t _{rr} | 50 | | | | | | ns |
| Typical junction capacitance | at 4.0 V, 1 MHz | C _J | 20 | | | | 14 | | pF |

Notes:

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

Thermal Characteristics

T_A = 25 °C unless otherwise specified

| Parameter | Symbol | BYM12-50 EGL41A | BYM12-100 EGL41B | BYM12-150 EGL41C | BYM12-200 EGL41D | BYM12-300 EGL41F | BYM12-400 EGL41G | Unit |
|--|--------------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|
| Maximum thermal resistance ^(1, 2) | R _{θJA} R _{θJT} | 60 30 | | | | | | °C/W |

Notes:

(1) Thermal resistance from junction to ambient, 0.24 x 0.24" (6.0 x 6.0 mm) copper pads to each terminal

(2) Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 x 6.0 mm) copper pads to each terminal

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise specified)

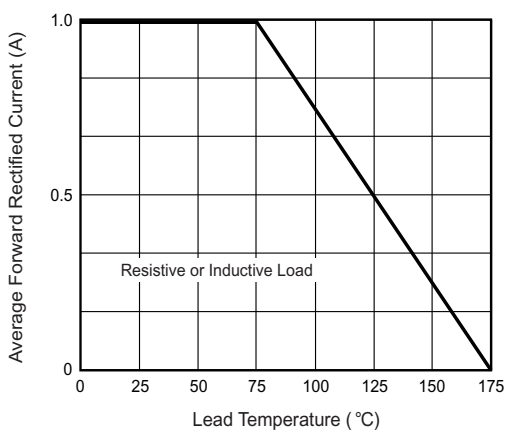


Figure 1. Maximum Forward Current Derating Curve

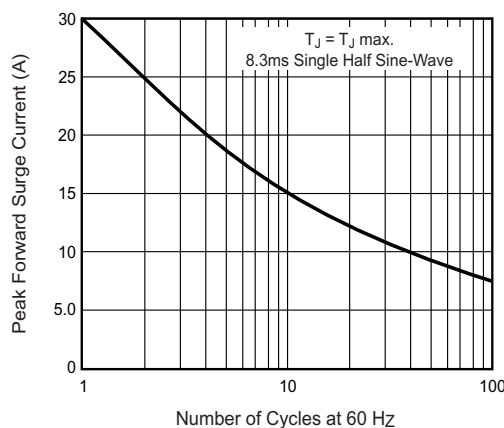


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

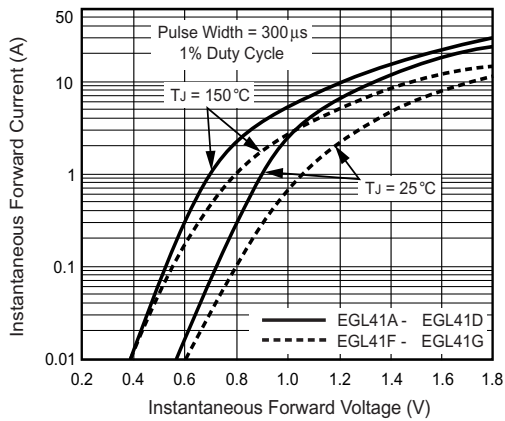


Figure 3. Typical Instantaneous Forward Characteristics

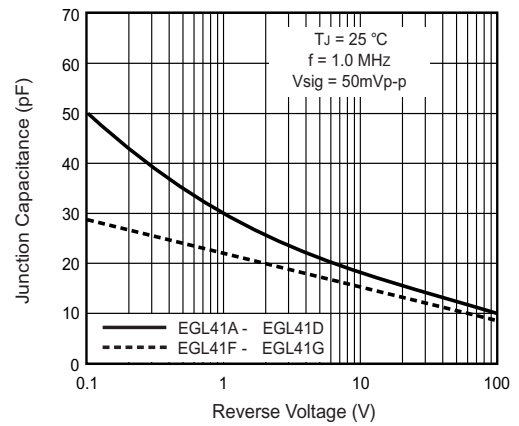


Figure 5. Typical Junction Capacitance

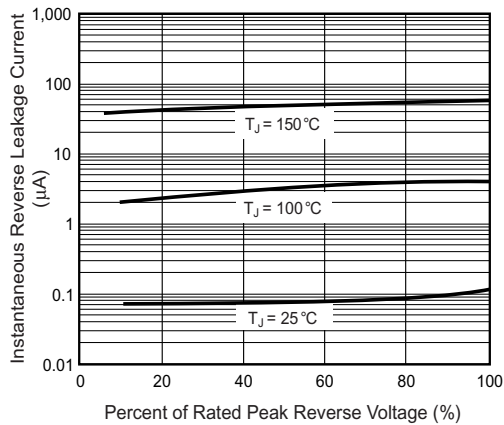


Figure 4. Typical Reverse Leakage Characteristics

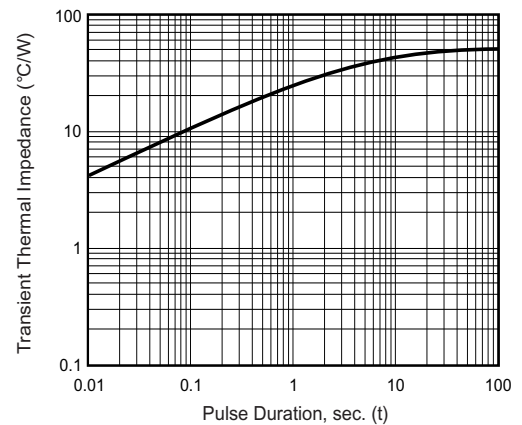
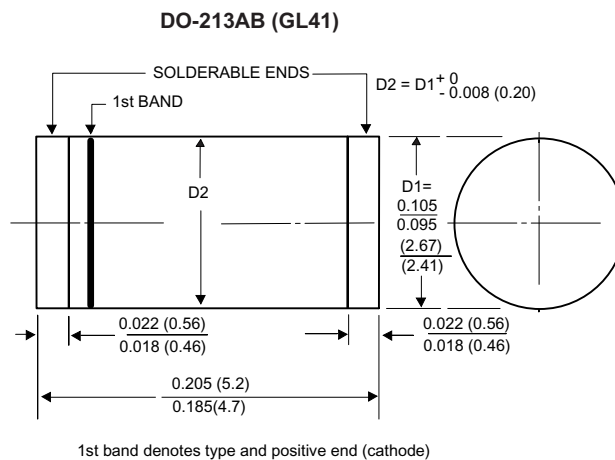


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)





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