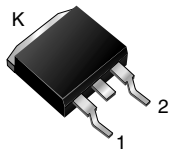
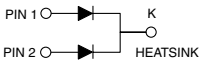
# Dual Common-Cathode Ultrafast Plastic Rectifier

TO-263AB




## FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 245 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

## TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, free-wheeling diodes, dc-to-dc converters, and other power switching application.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 16 A |
| $V_{RRM}$ | 50 V to 200 V |
| $I_{FSM}$ | 125 A |
| $t_{rr}$ | 35 ns |
| $V_F$ | 0.895 V |
| $T_j$ max. | 150 °C |

## MECHANICAL DATA

**Case:** TO-263AB

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:** As marked

**Mounting Torque:** 10 in-lbs maximum

**MAXIMUM RATINGS** ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | GIB2401 | GIB2402 | GIB2403 | GIB2404 | UNIT |
|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | V |
| Maximum RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | V |
| Maximum average forward rectified current at $T_C$ = 125 °C | $I_{F(AV)}$ | 16 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$ | 125 | | | | A |
| Operating storage and temperature range | $T_J$, $T_{STG}$ | - 65 to + 150 | | | | °C |

| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **GIB2401** | **GIB2402** | **GIB2403** | **GIB2404** | **UNIT** |
| Maximum instantaneous forward voltage per diode | $I_F$ = 4 A $T_j$ = 25 °C<br>$I_F$ = 8 A $T_j$ = 25 °C<br>$I_F$ = 4 A $T_j$ = 100 °C<br>$I_F$ = 8 A $T_j$ = 100 °C | $V_F$ | 0.900<br>0.975<br>0.800<br>0.895 | | | | V |
| Maximum DC reverse current per diode at rated DC blocking voltage | $T_C$ = 25 °C<br>$T_C$ = 100 °C | $I_R$ | 50<br>150 | | | 5.0<br>500 | µA |
| Maximum reverse recovery time per diode | at $I_F$ = 0.5 A, $I_R$ = 1.0 A, $I_{rr}$ = 0.25 A | $t_{rr}$ | 35 | | | | ns |
| Typical junction capacitance per diode | at 4 V, 1 MHz | $C_J$ | 85 | | | | pF |

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **GIB2401** | **GIB2402** | **GIB2403** | **GIB2404** | **UNIT** |
| Typical thermal resistance per diode (1) | $R_{\theta JC}$ | 1.2 | | | | °C/W |

**Note:**

(1) Thermal resistance from junction to case per leg mounted on heatsink

| **ORDERING INFORMATION** (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| TO-263AB | GIB2401-E3/45 | 1.35 | 45 | 50/Tube | Tube |
| TO-263AB | GIB2401-E3/81 | 1.35 | 81 | 900/Reel | Tape Reel |
| TO-263AB | GIB2401HE3/45 (1) | 1.35 | 45 | 50/Tube | Tube |
| TO-263AB | GIB2401HE3/81 (1) | 1.35 | 81 | 900/Reel | Tape Reel |

**Note:**

(1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

($T_A$ = 25 °C unless otherwise noted)

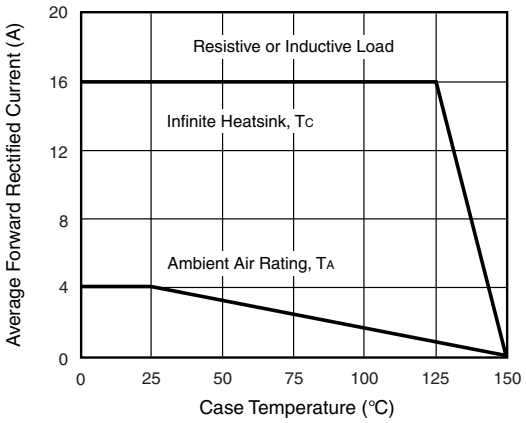



Figure 1. Maximum Forward Current Derating Curve

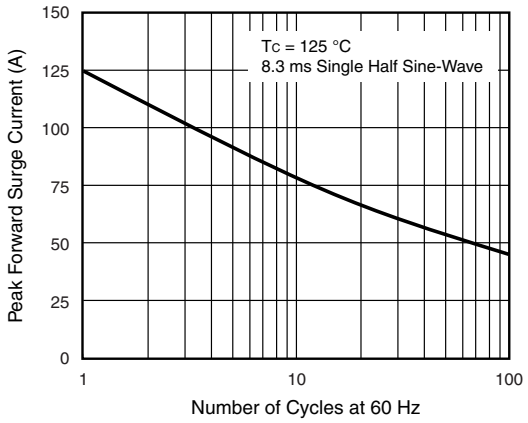



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

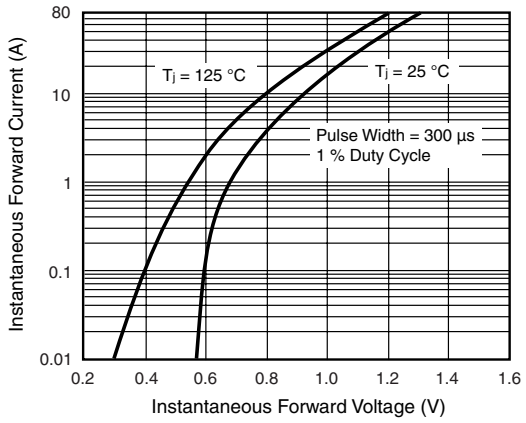



Figure 3. Typical Instantaneous Forward Characteristics Per Diode

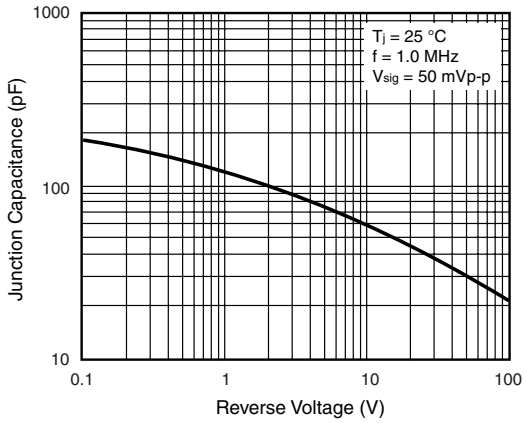



Figure 5. Typical Junction Capacitance Per Diode

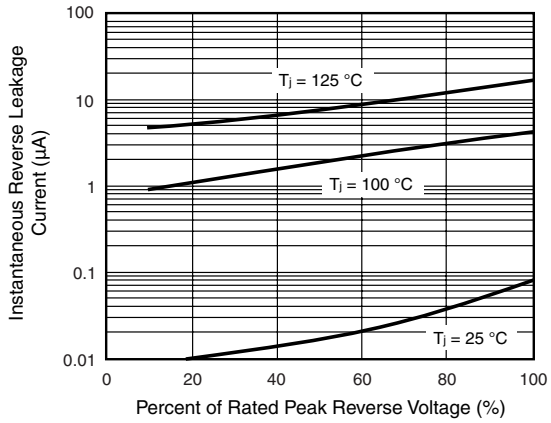
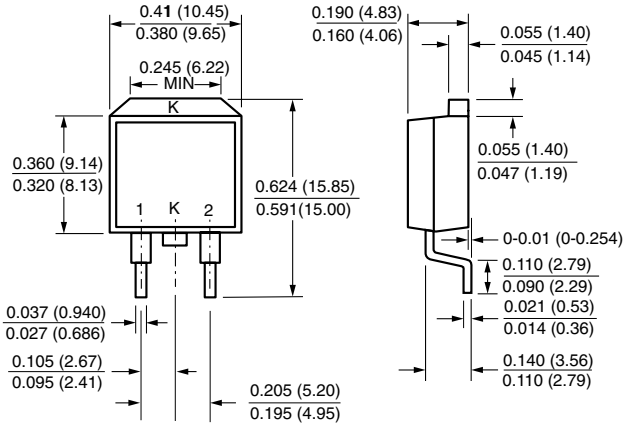


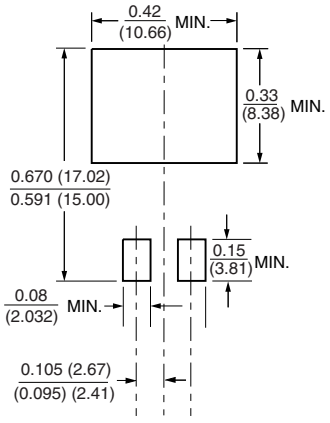

Figure 4. Typical Reverse Leakage Characteristics Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-263AB




### Mounting Pad Layout



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