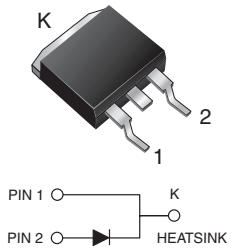
## Ultrafast Plastic Rectifier

TO-263AB




### FEATURES

- Power pack
- Glass passivated pallet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

### TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

### MECHANICAL DATA

**Case:** TO-263AB

Molding compound meets UL 94V-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 JESD22-B102
E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** As marked

**Mounting Torque:** 10 in-lbs max.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 8.0 A |
| $V_{RRM}$ | 50 V, 100 V, 150 V, 200 V |
| $I_{FSM}$ | 125 A |
| $t_{rr}$ | 35 ns |
| $V_F$ | 0.895 V |
| $T_J$ max. | 150 °C |
| Package | TO-263AB |
| Diode variation | Single die |

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

| PARAMETER | SYMBOL | GIB1401 | GIB1402 | GIB1403 | GIB1404 | UNIT |
|---|---|---|---|---|---|---|
| Max. repetitive peak reverse voltage | $V_{RRM}$ | 50 | 100 | 150 | 200 | V |
| Max. RMS voltage | $V_{RMS}$ | 35 | 70 | 105 | 140 | V |
| Max. DC blocking voltage | $V_{DC}$ | 50 | 100 | 150 | 200 | V |
| Max. average forward rectified current at $T_C$ = 125 °C | $I_{F(AV)}$ | 8.0 | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 125 | | | | A |
| Operating and storage temperature range | $T_J$, $T_{STG}$ | -65 to +150 | | | | °C |

| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | | **SYMBOL** | **GIB1401** | **GIB1402** | **GIB1403** | **GIB1404** | **UNIT** |
| Max. instantaneous forward voltage | $I_F$ = 4 A | $T_J$ = 25 °C | $V_F$ | 0.900 | | | | V |
| | $I_F$ = 8 A | $T_J$ = 25 °C | | 0.975 | | | | |
| | $I_F$ = 4 | $T_J$ = 100 °C | | 0.800 | | | | |
| | $I_F$ = 8 A | $T_J$ = 100 °C | | 0.895 | | | | |
| Max. DC reverse current at rated DC blocking voltage | | $T_C$ = 25 °C | $I_R$ | 5.0 | | | | μA |
| | | $T_C$ = 100 °C | | 150 | | | | |
| Max. reverse recovery time | $I_F$ = 0.5 A, $I_R$ = 1.0 A, $I_{rr}$ = 0.25 A | | $t_{rr}$ | 35 | | | | ns |
| Typical junction capacitance | 4 V, 1 MHz | | $C_J$ | 85 | | | | pF |

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **GIB1401** | **GIB1402** | **GIB1403** | **GIB1404** | **UNIT** |
| Typical thermal resistance (1) | $R_{\theta JC}$ | 2.25 | | | | °C/W |

**Note**

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

| **ORDERING INFORMATION** (Example) | | | | | |
|---|---|---|---|---|---|
| **PACKAGE** | **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| TO-263AB | GIB1401-E3/45 | 1.33 | 45 | 50/tube | Tube |
| TO-263AB | GIB1401-E3/81 | 1.33 | 81 | 900/reel | Tape and reel |
| TO-263AB | GIB1401HE3/45 (1) | 1.33 | 45 | 50/tube | Tube |
| TO-263AB | GIB1401HE3/81 (1) | 1.33 | 81 | 900/reel | Tape and reel |

**Note**

(1) AEC-Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES ($T_A$ = 25 °C unless otherwise noted)

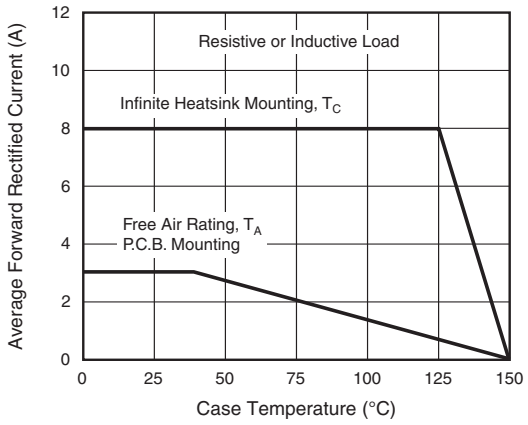



Fig. 1 - Max. Forward Current Derating Curve

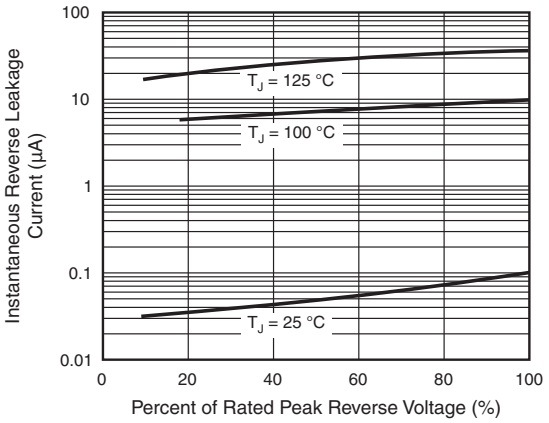



Fig. 4 - Typical Reverse Leakage Characteristics

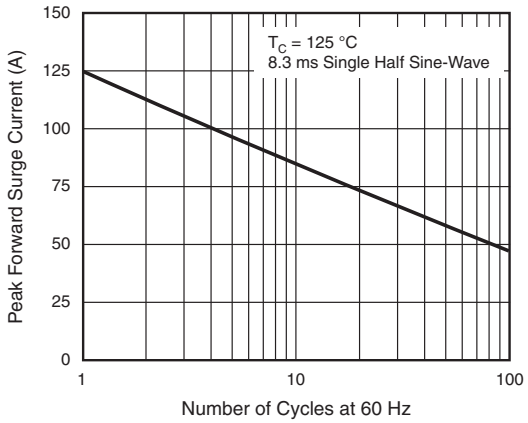



Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

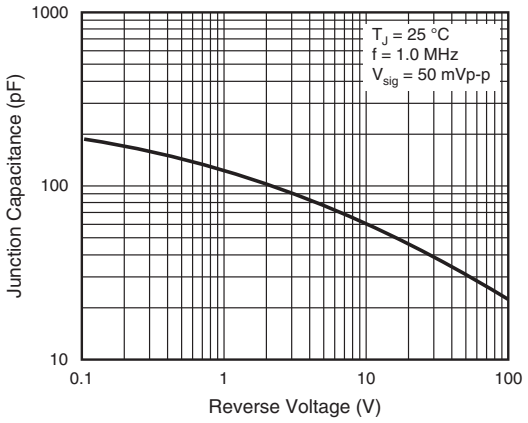



Fig. 5 - Typical Junction Capacitance

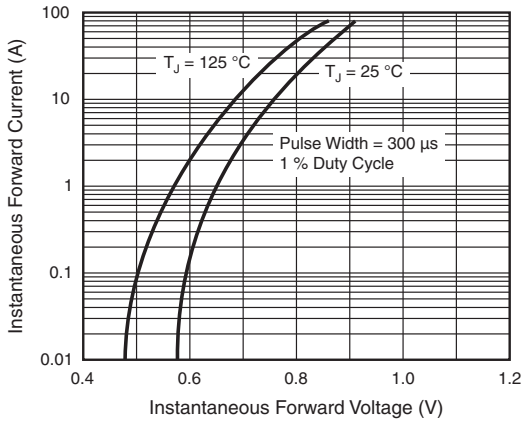
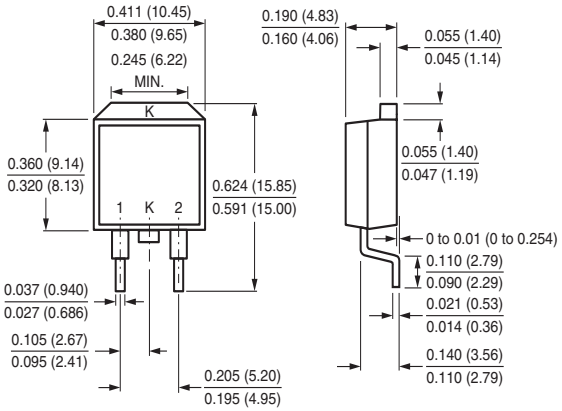


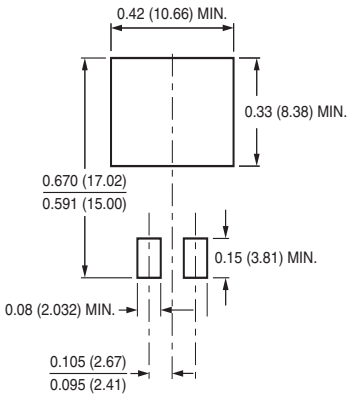

Fig. 3 - Typical Instantaneous Forward Characteristics

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

TO-263AB




Mounting Pad Layout



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