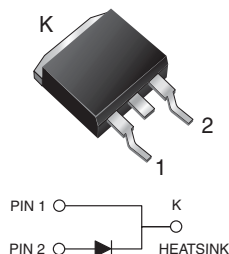


Ultrafast Plastic Rectifier

D²PAK (TO-263AB)


DESIGN SUPPORT TOOLS

[click logo to get started](#)

3D
Models
Available

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 |
| $T_J \text{ max.}$ | 150 °C |
| Package | D ² PAK (TO-263AB) |
| Circuit configurations | Single |

FEATURES

- Power pack
- Glass passivated pellet 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: D²PAK (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.

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 $T_C = 125\text{ °C}$ | $I_{F(AV)}$ | 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 ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) | | | | | | | |
|---|-----------------|---------|---------|---------|---------|----------------------|--|
| PARAMETER | SYMBOL | GIB1401 | GIB1402 | GIB1403 | GIB1404 | UNIT | |
| Typical thermal resistance ⁽¹⁾ | $R_{\theta JC}$ | 2.25 | | | | $^{\circ}\text{C/W}$ | |

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 ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

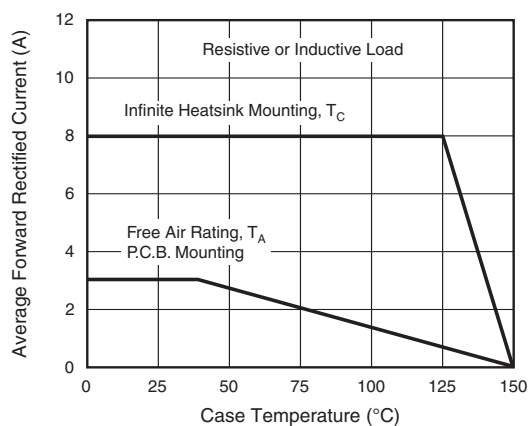


Fig. 1 - Max. Forward Current Derating Curve

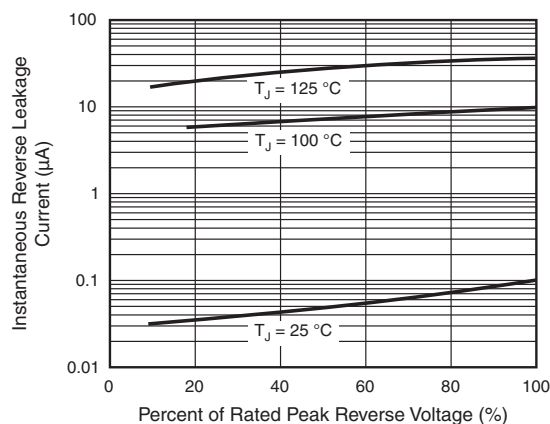


Fig. 4 - Typical Reverse Leakage Characteristics

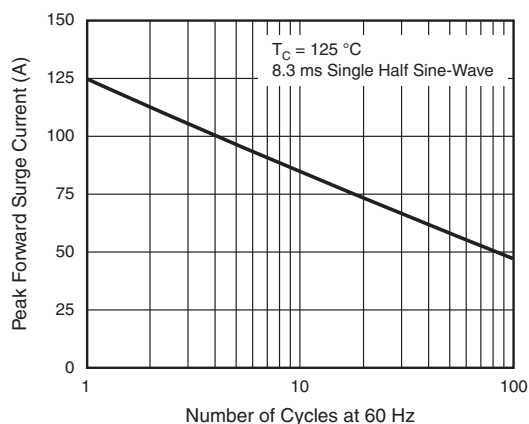


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

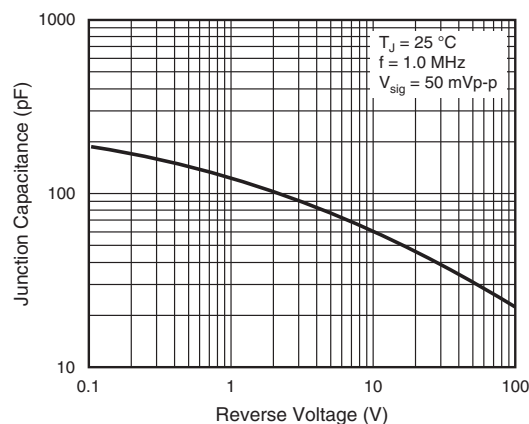


Fig. 5 - Typical Junction Capacitance

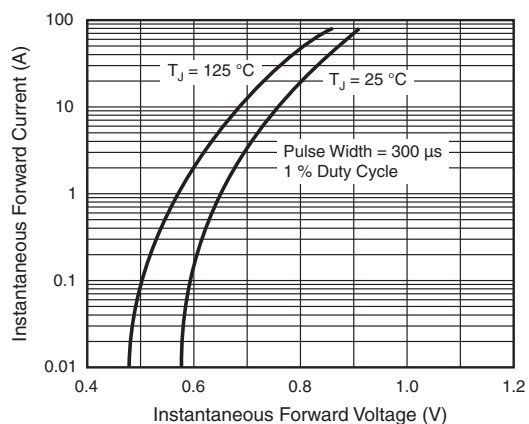
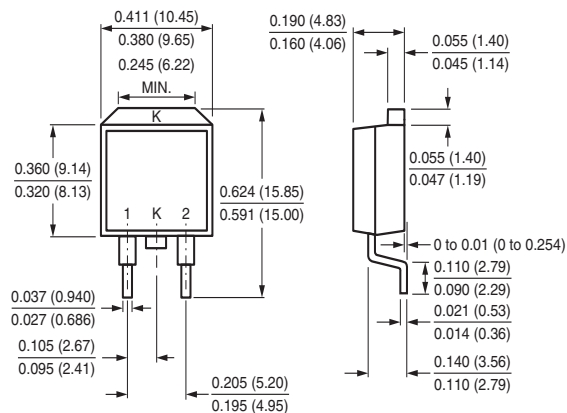


Fig. 3 - Typical Instantaneous Forward Characteristics

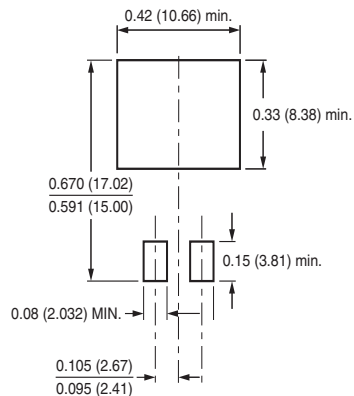


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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