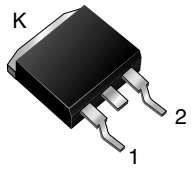
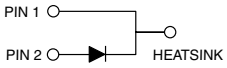
Ultrafast Plastic Rectifier

TO-263AB





FEATURES

- Glass passivated chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- 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.

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 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

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

PARAMETER	SYMBOL	GIB1401	GIB1402	GIB1403	GIB1404	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	$I_{F(AV)}$	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**
Maximum instantaneous forward voltage	I_F = 4 A, T_j = 25 °C I_F = 8 A, T_j = 25 °C I_F = 4 A, T_j = 100 °C I_F = 8 A, T_j = 100 °C	V_F	0.900 0.975 0.800 0.895				V
Maximum DC reverse current at rated DC blocking voltage	T_C = 25 °C T_C = 100 °C	I_R	5.0 150				µA
Maximum reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	35				ns
Typical junction capacitance	at 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 Reel
TO-263AB	GIB1401HE3/45 (1)	1.33	45	50/Tube	Tube
TO-263AB	GIB1401HE3/81 (1)	1.33	81	900/Reel	Tape Reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

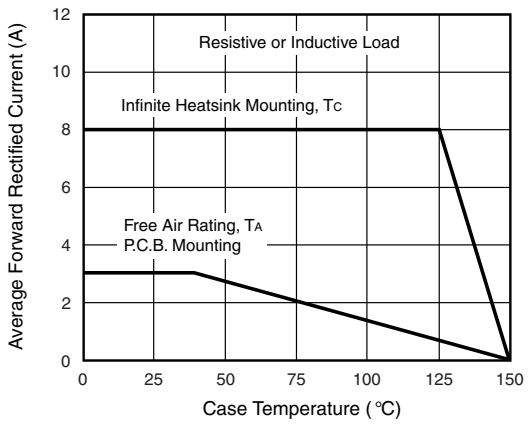


Figure 1. Maximum Forward Current Derating Curve

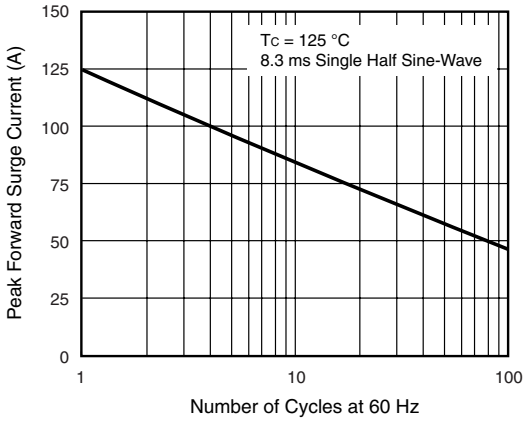


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

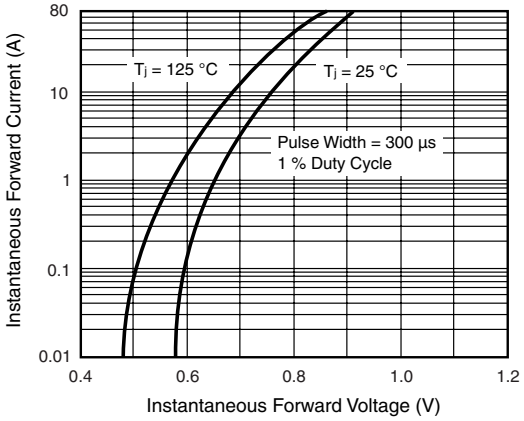


Figure 3. Typical Instantaneous Forward Characteristics

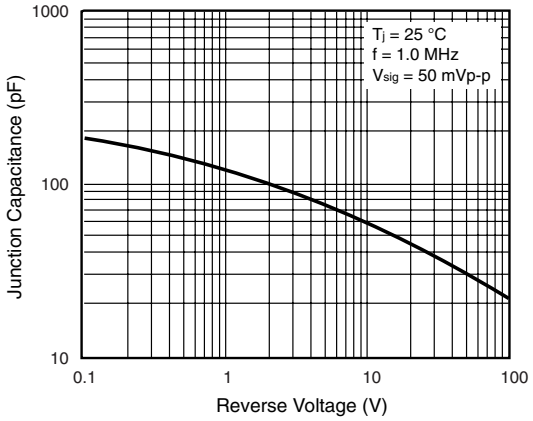


Figure 5. Typical Junction Capacitance

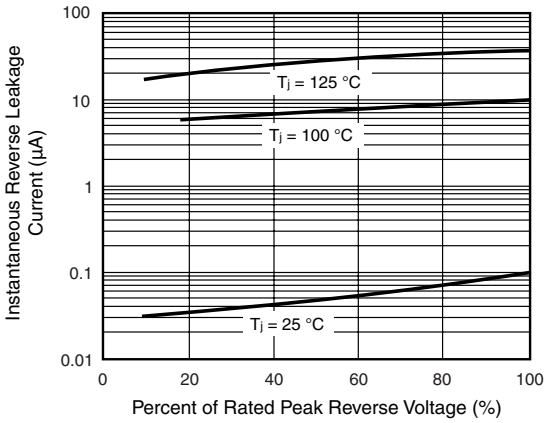
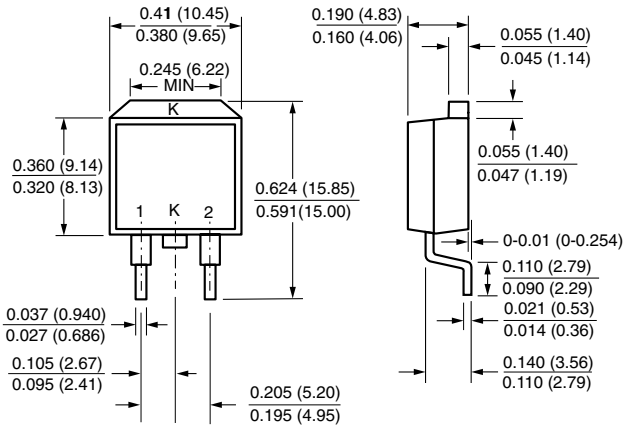


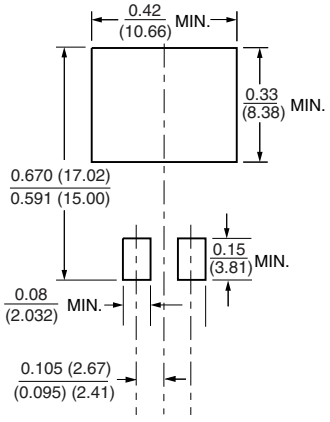
Figure 4. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-263AB



Mounting Pad Layout



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.