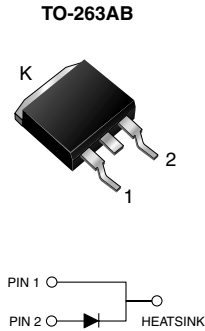


## Ultrafast Plastic Rectifier



### 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-020, LF maximum peak of 245 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### 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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

**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
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ( $T_A = 25 \text{ °C}$ 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 $T_C = 125 \text{ °C}$	$I_{F(AV)}$	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 <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	GIB1401	GIB1402	GIB1403	GIB1404	UNIT
Maximum instantaneous forward voltage	I <sub>F</sub> = 4 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>					V
	I <sub>F</sub> = 8 A	T <sub>J</sub> = 25 °C						
	I <sub>F</sub> = 4 A	T <sub>J</sub> = 100 °C						
	I <sub>F</sub> = 8 A	T <sub>J</sub> = 100 °C						
Maximum DC reverse current at rated DC blocking voltage		T <sub>C</sub> = 25 °C T <sub>C</sub> = 100 °C	I <sub>R</sub>		5.0 150			μA
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>		35			ns
Typical junction capacitance	4 V, 1 MHz		C <sub>J</sub>		85			pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	GIB1401	GIB1402	GIB1403	GIB1404	UNIT	
Typical thermal resistance <sup>(1)</sup>	R <sub>θJC</sub>	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 <sup>(1)</sup>	1.33	45	50/tube	Tube
TO-263AB	GIB1401HE3/81 <sup>(1)</sup>	1.33	81	900/reel	Tape and reel

**Note:**

(1) Automotive grade AEC Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

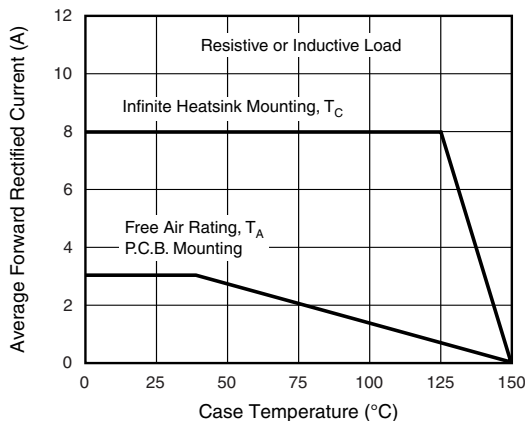


Figure 1. Maximum Forward Current Derating Curve

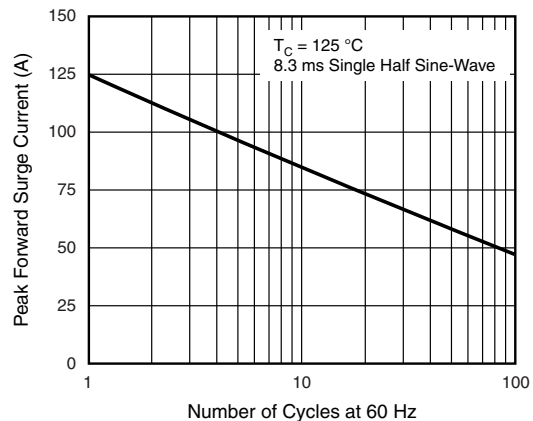


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

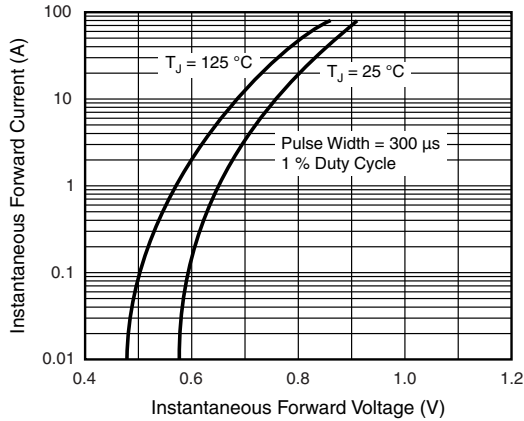


Figure 3. Typical Instantaneous Forward Characteristics

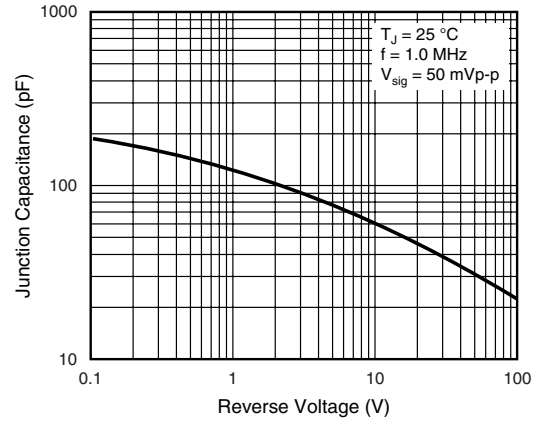


Figure 5. Typical Junction Capacitance

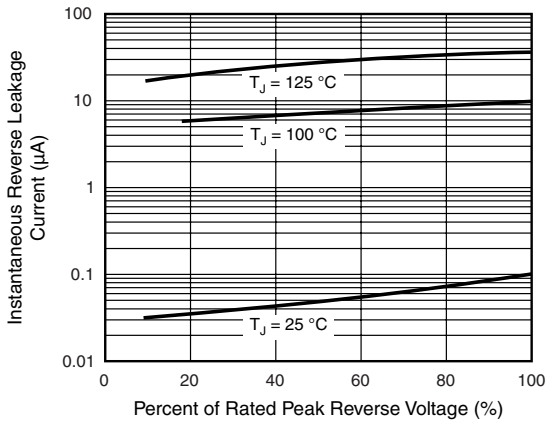
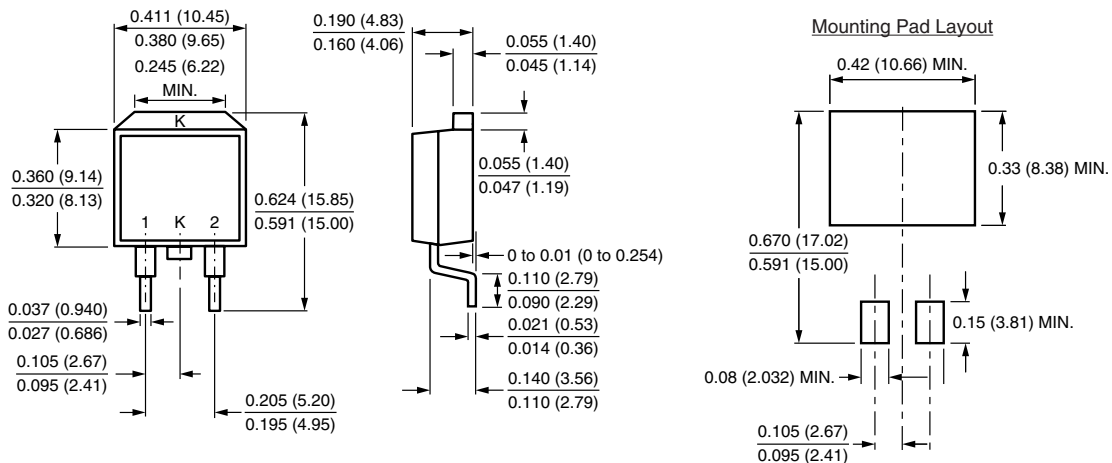


Figure 4. Typical Reverse Leakage Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### TO-263AB





## Disclaimer

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