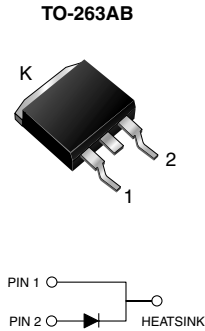


Ultrafast Plastic Rectifier



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 ($T_A = 25 \text{ }^\circ\text{C}$ 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 $T_C = 125 \text{ }^\circ\text{C}$	$I_{F(AV)}$	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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	GIB1401	GIB1402	GIB1403	GIB1404	UNIT
Maximum instantaneous forward voltage	$I_F = 4\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$	V_F					V
	$I_F = 8\text{ A}$	$T_J = 25\text{ }^\circ\text{C}$						
	$I_F = 4\text{ A}$	$T_J = 100\text{ }^\circ\text{C}$						
	$I_F = 8\text{ A}$	$T_J = 100\text{ }^\circ\text{C}$						
Maximum DC reverse current at rated DC blocking voltage		$T_C = 25\text{ }^\circ\text{C}$ $T_C = 100\text{ }^\circ\text{C}$	I_R		5.0 150			μA
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A},$ $I_{rr} = 0.25\text{ A}$		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) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

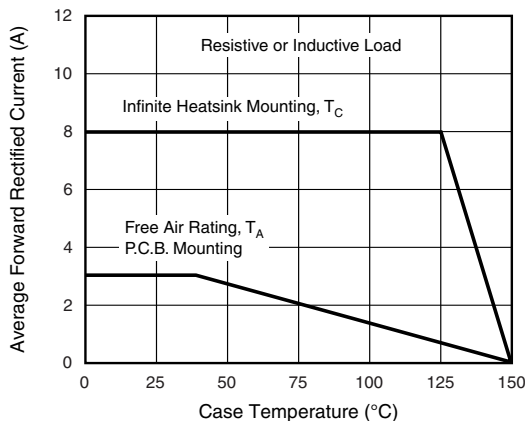


Figure 1. Maximum Forward Current Derating Curve

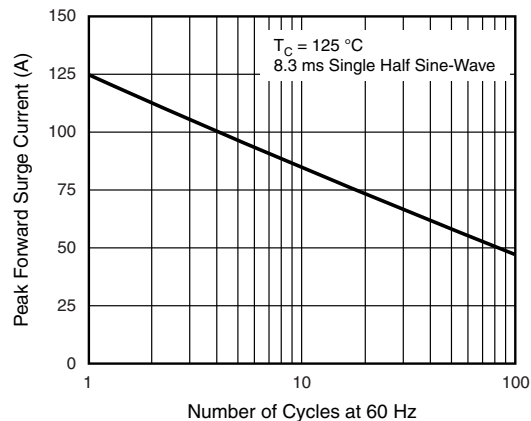


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

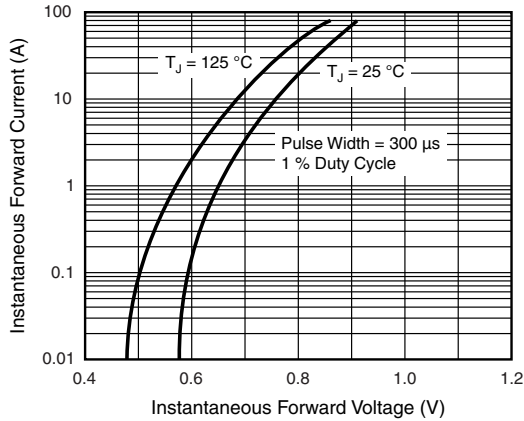


Figure 3. Typical Instantaneous Forward Characteristics

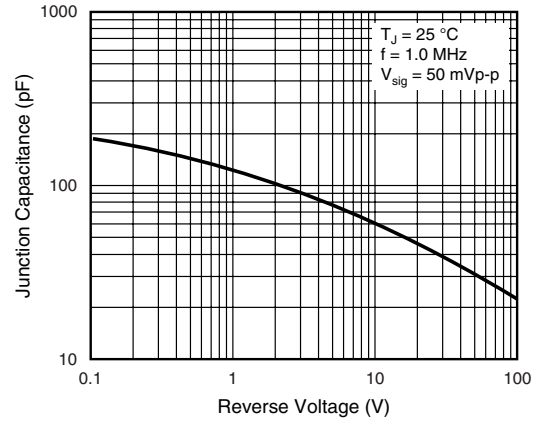


Figure 5. Typical Junction Capacitance

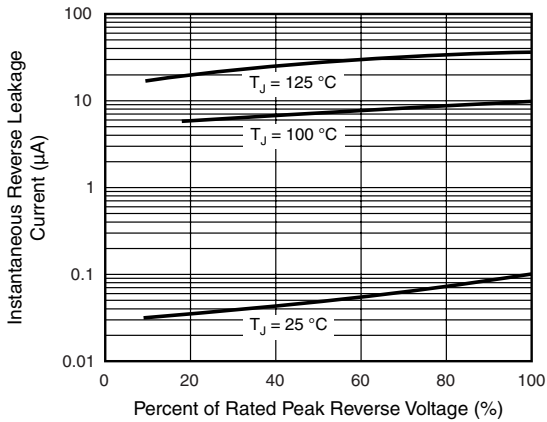
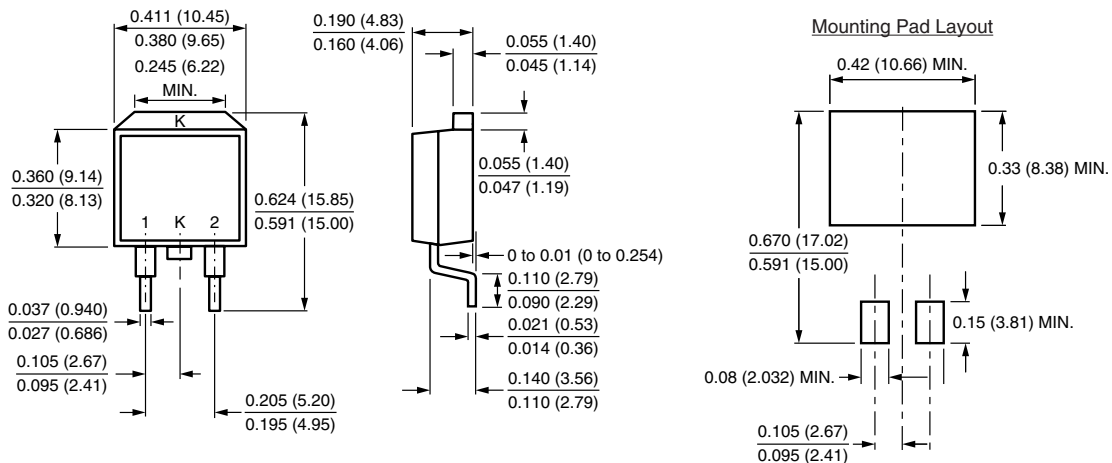


Figure 4. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-263AB





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