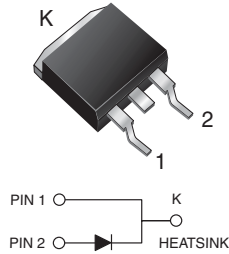


Ultrafast Plastic Rectifier

D²PAK (TO-263AB)

RoHS
COMPLIANT

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 available
 - Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

DESIGN SUPPORT TOOLS 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

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_X - RoHS-compliant and AEC-Q101 qualified (“_X” denotes revision code e.g. A, B,...)

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 A	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			I _R	5.0				μA
				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 _{θJC}	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_A/P ⁽¹⁾	1.33	P	50/tube	Tube
TO-263AB	GIB1401HE3_A/I ⁽¹⁾	1.33	I	900/reel	Tape and reel

Note

⁽¹⁾ AEC-Q101 qualified



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

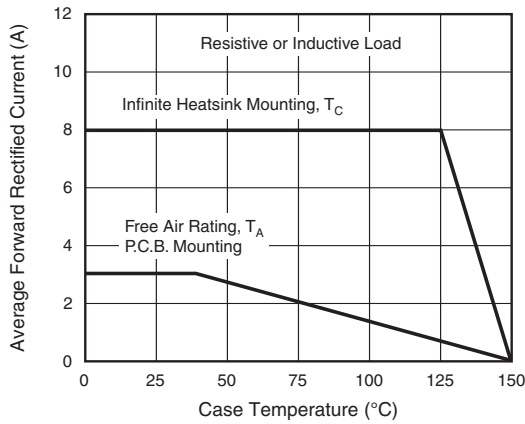


Fig. 1 - Max. Forward Current Derating Curve

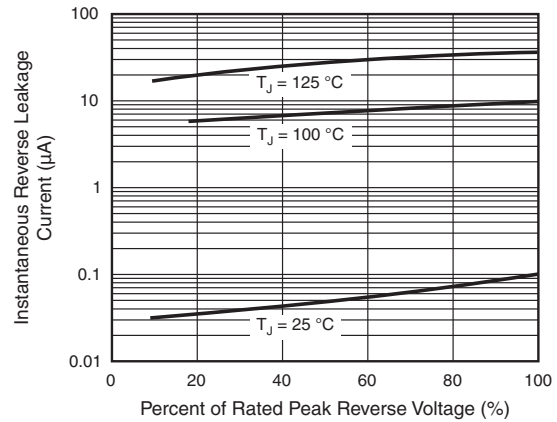


Fig. 4 - Typical Reverse Leakage Characteristics

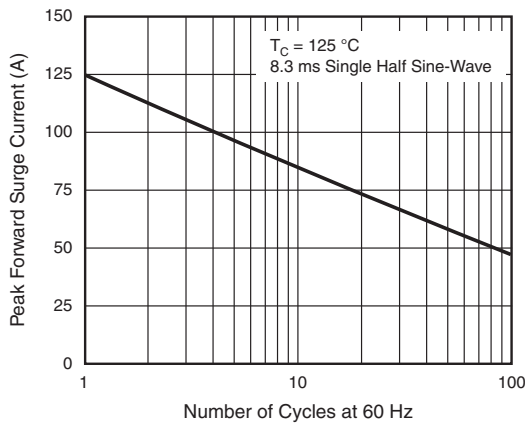


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

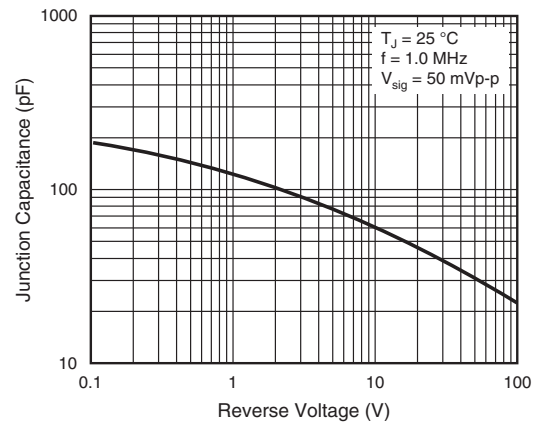


Fig. 5 - Typical Junction Capacitance

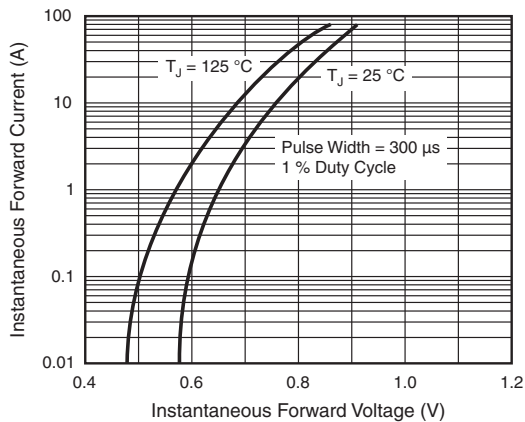
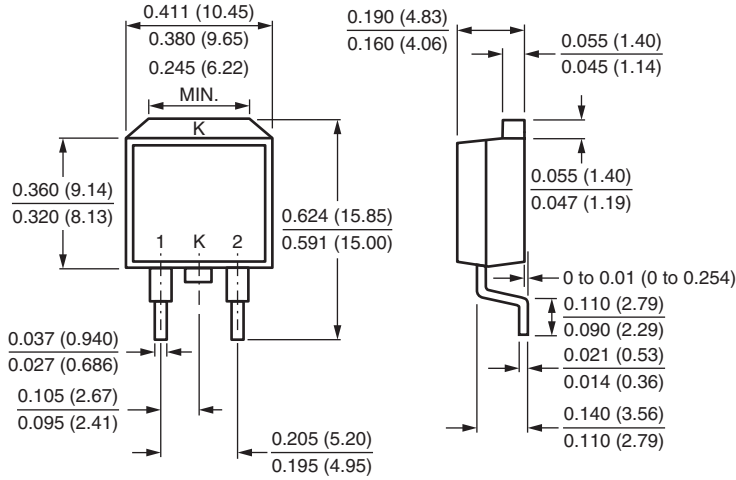


Fig. 3 - Typical Instantaneous Forward Characteristics

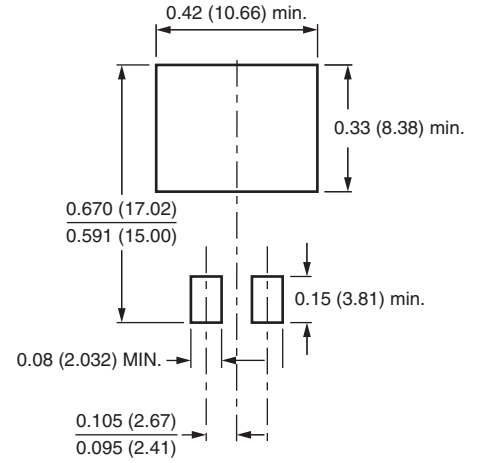


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

D²PAK (TO-263AB)



Mounting Pad Layout





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