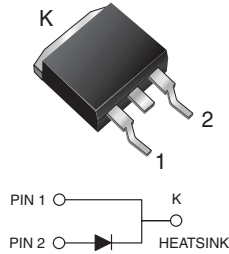


## Ultrafast Plastic Rectifier

**D<sup>2</sup>PAK (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](http://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 <sup>2</sup> 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:** D<sup>2</sup>PAK (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 <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	GIB1401	GIB1402	GIB1403	GIB1404	UNIT
Max. instantaneous forward voltage	I <sub>F</sub> = 4 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.900				V
	I <sub>F</sub> = 8 A	T <sub>J</sub> = 25 °C		0.975				
	I <sub>F</sub> = 4 A	T <sub>J</sub> = 100 °C		0.800				
	I <sub>F</sub> = 8 A	T <sub>J</sub> = 100 °C		0.895				
Max. DC reverse current at rated DC blocking voltage			I <sub>R</sub>	5.0				μA
				150				
Max. 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**

<sup>(1)</sup> 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 <sup>(1)</sup>	1.33	P	50/tube	Tube
TO-263AB	GIB1401HE3_A/I <sup>(1)</sup>	1.33	I	900/reel	Tape and reel

**Note**

<sup>(1)</sup> AEC-Q101 qualified



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

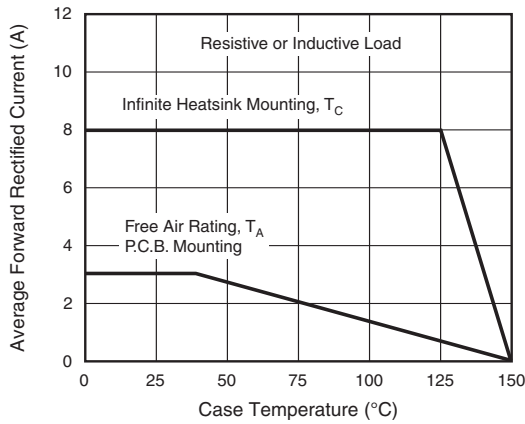


Fig. 1 - Max. Forward Current Derating Curve

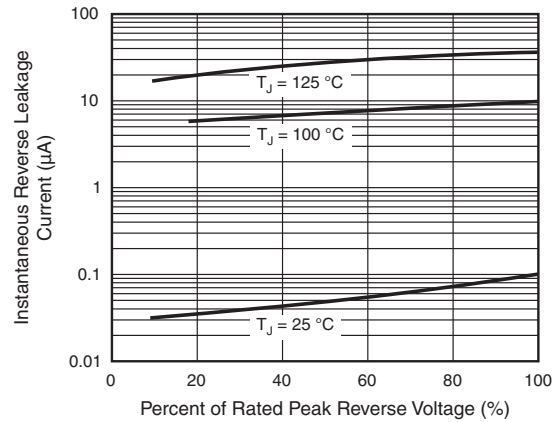


Fig. 4 - Typical Reverse Leakage Characteristics

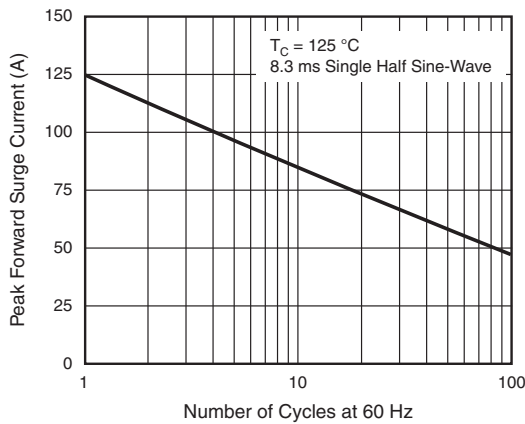


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

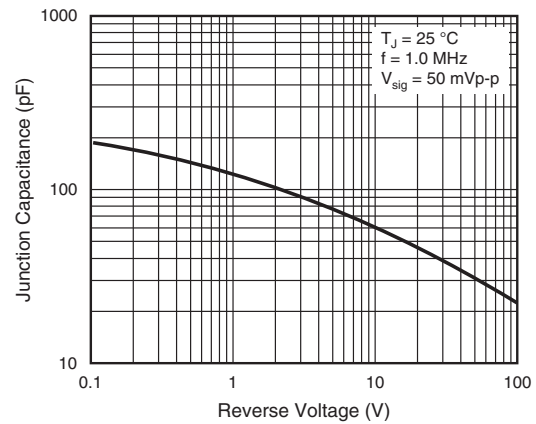


Fig. 5 - Typical Junction Capacitance

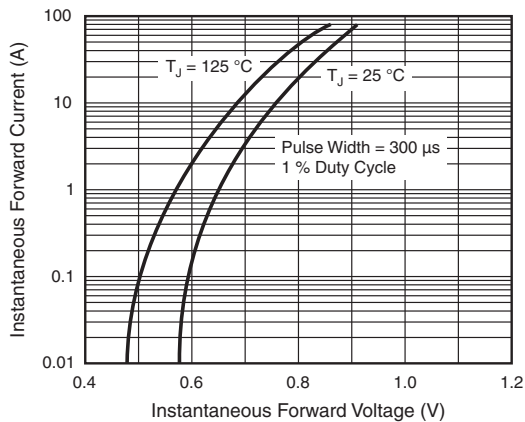
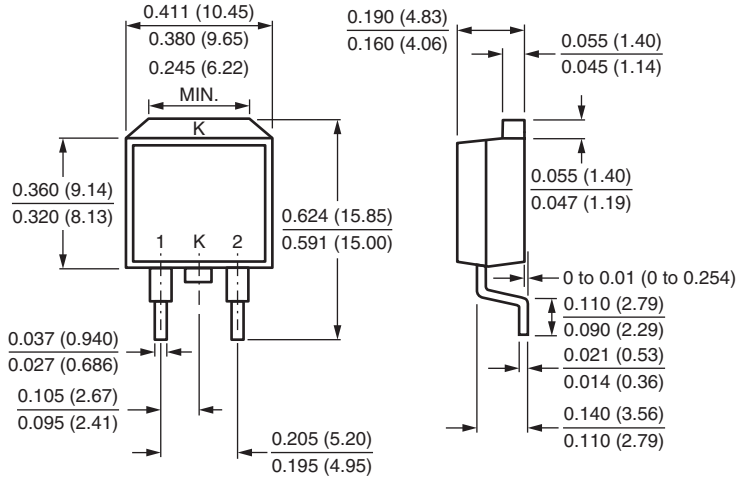


Fig. 3 - Typical Instantaneous Forward Characteristics

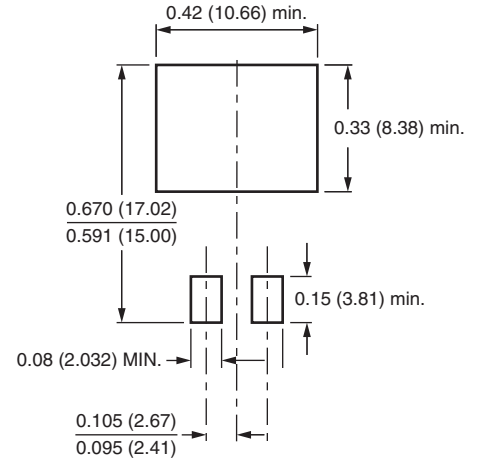


### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### D<sup>2</sup>PAK (TO-263AB)



#### Mounting Pad Layout





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