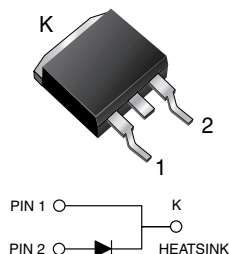


# Ultrafast Plastic Rectifier

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


## LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
$V_{RRM}$	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

## 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/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?999912](http://www.vishay.com/doc?999912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## 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-M3 - RoHS-compliant, commercial grade  
Base P/NHM3 - RoHS-compliant, halogen-free, AEC-Q101 qualified

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD22-B102

M3 suffix meets JESD 201 class 1A whisker test, HM3 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	GIB1404	UNIT
Max. repetitive peak reverse voltage	$V_{RRM}$	200	V
Max. RMS voltage	$V_{RMS}$	140	V
Max. DC blocking voltage	$V_{DC}$	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	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	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		T <sub>C</sub> = 25 °C	I <sub>R</sub>	5.0	μA
		T <sub>C</sub> = 100 °C		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 ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	GIB1404	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JC}$	2.25	$^{\circ}\text{C/W}$

**Note**

<sup>(1)</sup> Thermal resistance from junction to case mounted on heatsink

ORDERING INFORMATION					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
D <sup>2</sup> PAK (TO-263AB)	GIB1404-M3/I	1.33	I	900/reel	Tape and reel
D <sup>2</sup> PAK (TO-263AB)	GIB1404HM3/I <sup>(1)</sup>	1.33	I	900/reel	Tape and reel

**Note**

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

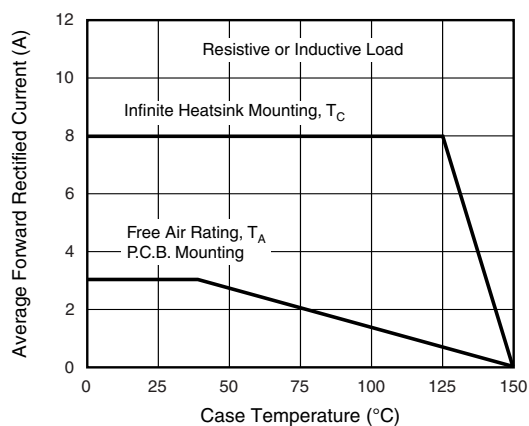
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Max. Forward Current Derating Curve

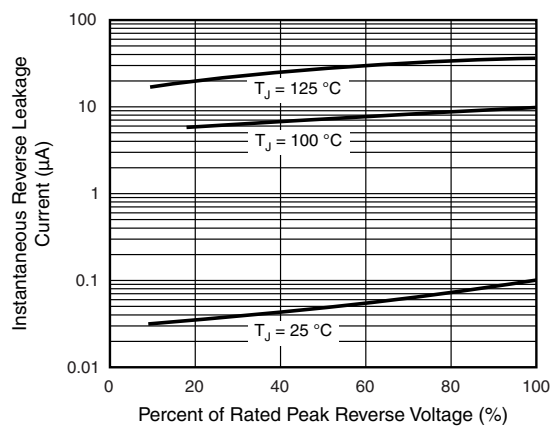


Fig. 4 - Typical Reverse Leakage Characteristics

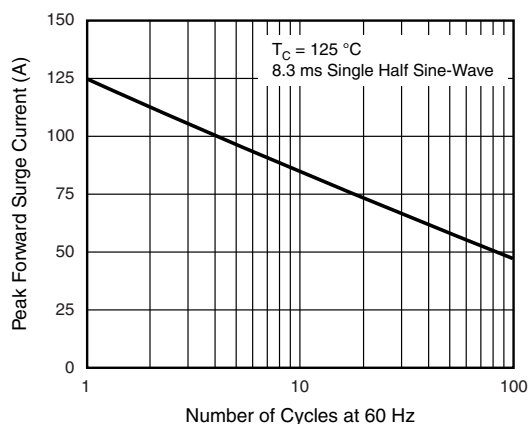


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

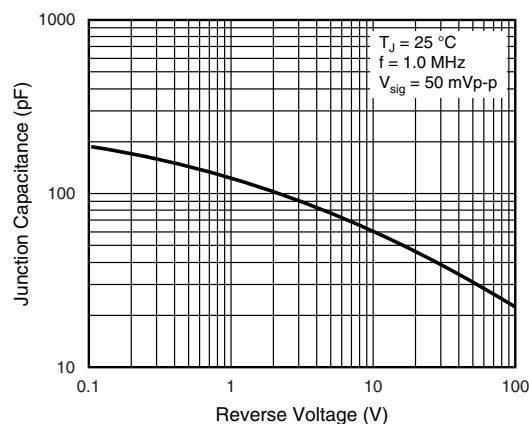


Fig. 5 - Typical Junction Capacitance

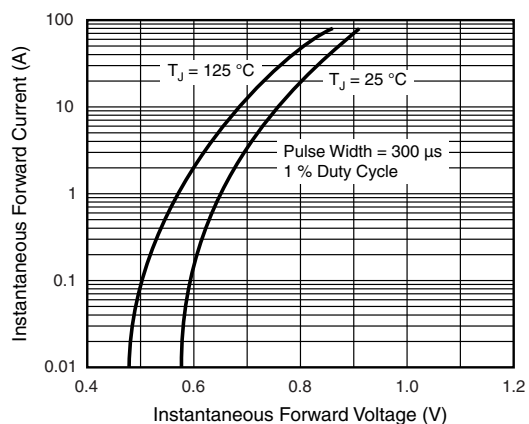
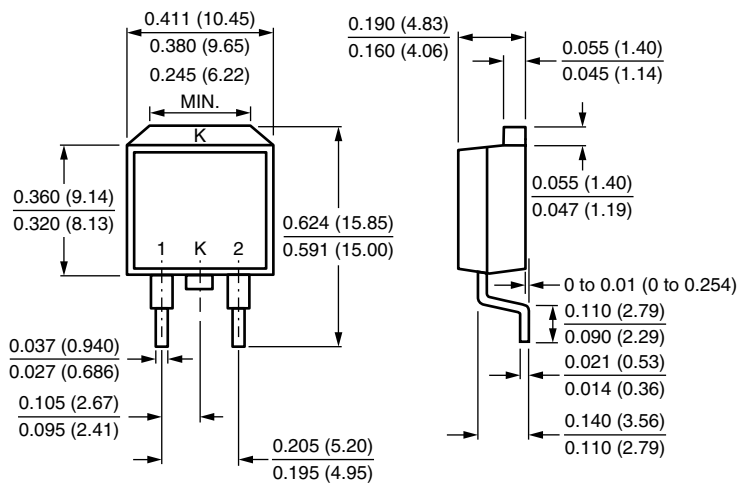


Fig. 3 - Typical Instantaneous Forward Characteristics

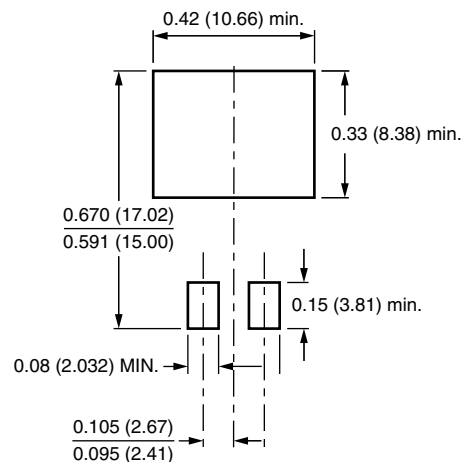


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

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



**Mounting Pad Layout**





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