

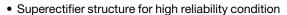
## Vishay General Semiconductor

# **Glass Passivated Junction Fast Switching Rectifier**



PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub> 1.0 A							
$V_{RRM}$	50 V to 1000 V						
I <sub>FSM</sub>	30 A						
t <sub>rr</sub>	750 ns						
I <sub>R</sub>	10 μΑ						
V <sub>F</sub>	1.2 V						
T <sub>J</sub> max.	175 °C						

### **FEATURES**





- · Cavity-free glass-passivated junction
- · Fast switching for high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

### **TYPICAL APPLICATIONS**

For general purpose of medium frequency rectification.

### **MECHANICAL DATA**

Case: DO-204AC, molded epoxy over glass body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, commercial grade Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50 100 200 400 600 800 1000				1000	V		
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A$ = 75 $^{\circ}$ C	I <sub>F(AV)</sub>	1.0					Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30				А			
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	G - 65 to + 175					°C		

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	GI810	GI811	GI812	GI814	GI816	GI817	GI818	UNIT
Maximum instantaneous forward voltage	1.0 A		V <sub>F</sub>	1.2					V		
Maximum DC reverse current at		T <sub>A</sub> = 25 °C		10							
rated DC blocking voltage		T <sub>A</sub> = 100 °C	I <sub>R</sub>	100							μA
Maximum reverse recovery time	I <sub>F</sub> = 1.0 A, V <sub>R</sub> = 30 V, dI/dt = 50 A/μs		t <sub>rr</sub>	750						ns	
Typical junction capacitance	4.0 V, 1	MHz	C <sub>J</sub> 25				pF				

Document Number: 88628 Revision: 15-Mar-11

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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER         SYMBOL         GI810         GI811         GI812         GI814         GI816         GI817         GI818         UNIT							UNIT
Typical thermal resistance	R <sub>0JA</sub> (1)	45 °C/V				°C/W	

#### Note

<sup>(1)</sup> Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
GI816-E3/54	0.425	54	4000	13" diameter paper tape and reel					
GI816-E3/73	0.425	73	2000	Ammo pack packaging					
GI816HE3/54 (1)	0.425	54	4000	13" diameter paper tape and reel					
GI816HE3/73 (1)	0.425	73	2000	Ammo pack packaging					

#### Note

## **RATINGS AND CHARACTERISTICS CURVES**

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

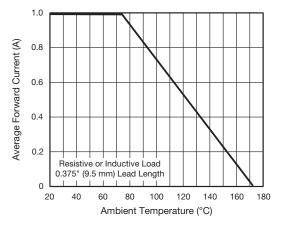


Fig. 1 - Forward Current Derating Curve

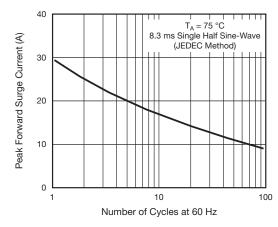


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

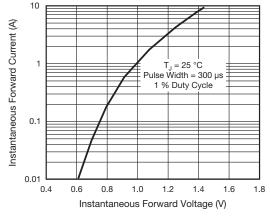


Fig. 3 - Typical Instantaneous Forward Characteristics

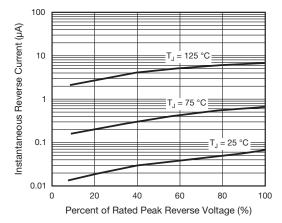


Fig. 4 - Typical Reverse Characteristics

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



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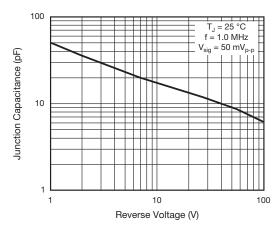


Fig. 5 - Typical Junction Capacitance

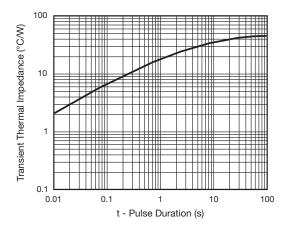
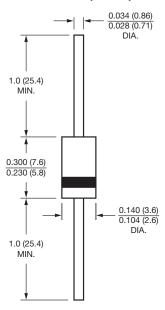


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-204AC (DO-15)



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Document Number: 91000 www.vishay.com
Revision: 11-Mar-11 1