Vishay General Semiconductor

# **Glass Passivated Junction Fast Switching Rectifier**



PRIMARY CHARACTERISTICS									
I <sub>F(AV)</sub>	1.0 A								
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V								
I <sub>FSM</sub>	30 A								
t <sub>rr</sub>	750 ns								
I <sub>R</sub>	10 µA								
V <sub>F</sub>	1.2 V								
T <sub>J</sub> max.	175 °C								
Package	DO-204AC (DO-15)								

Single die

### **FEATURES**

- Superectifier structure for high reliability condition
- · Cavity-free glass-passivated junction
- · Fast switching for high efficiency
- Low leakage current
- High forward surge capability

GI810, GI811, GI812, GI814, GI816, GI817, GI818

- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

### **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

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

E3 suffix meets JESD 201 class 1A whisker test

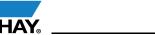
Polarity: Color band denotes cathode end

<b>MAXIMUM RATINGS</b> (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 <sub>RRM</sub>	V <sub>RRM</sub> 50 100 200 400 600 800 100				1000	V		
Maximum RMS voltage	V <sub>RMS</sub>	V <sub>RMS</sub> 35 70 140 280 420 560 700				700	V		
Maximum DC blocking voltage	V <sub>DC</sub>	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 °C	I <sub>F(AV)</sub>	1.0						А	
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>	-65 to +175					°C		

ELECTRICAL CHARACTERISTICS (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	T <sub>A</sub> = 25 °C 10		10				μA		
rated DC blocking voltage	T <sub>A</sub> = 100 °C	'H	100							μ., τ
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	CJ	25				pF			

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**Diode variation** 



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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER         SYMBOL         GI810         GI811         GI812         GI814         GI816         GI817         GI818						UNIT	
Typical thermal resistance	$R_{\theta JA}$ <sup>(1)</sup>	45 °C,				°C/W	

Note

<sup>(1)</sup> Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB 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				

#### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

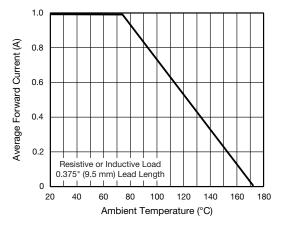
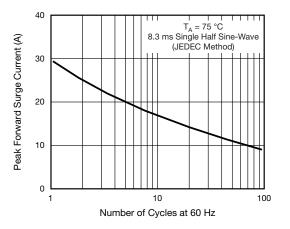
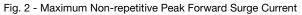
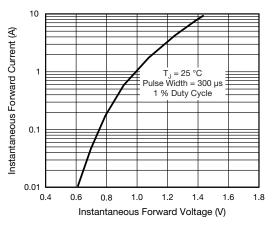


Fig. 1 - Forward Current Derating Curve









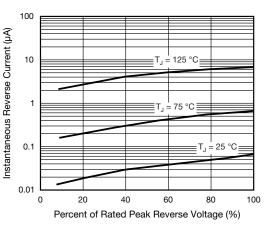


Fig. 4 - Typical Reverse Characteristics

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## GI810, GI811, GI812, GI814, GI816, GI817, GI818

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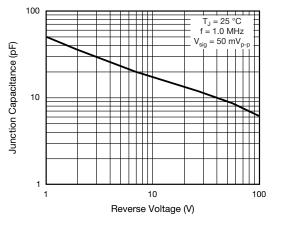
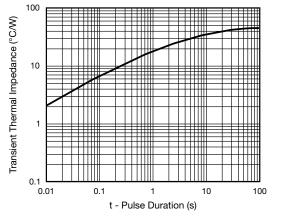
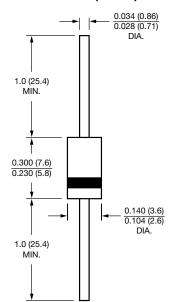


Fig. 5 - Typical Junction Capacitance





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



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

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