

## Vishay General Semiconductor

## **Surface Mount Glass Passivated Ultrafast Rectifier**

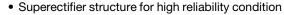
### SUPERECTIFIER®



DO-214BA (GF1)

PRIMARY CHARACTERISTICS				
I <sub>F(AV)</sub>	1.0 A			
$V_{RRM}$	1300 V			
I <sub>FSM</sub>	20 A			
t <sub>rr</sub>	75 ns			
E <sub>AS</sub>	15 mJ			
V <sub>F</sub> at I <sub>F</sub> = 1.0 A	3.0 V			
T <sub>J</sub> max.	150 °C			
Package	DO-214BA (GF1)			
Diode variations	Single die			

#### **FEATURES**





• Cavity-free glass-passivated junction

Cavity-free glass-passivated juriction

Ideal for automated placementUltrafast reverse recovery time

RoHS

· Low switching losses, high efficiency

Avalanche surge energy capability

• Meets environmental standard MIL-S-19500

- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

### **TYPICAL APPLICATIONS**

For use in high voltage rectification of photoflash application.

### **MECHANICAL DATA**

Case: DO-214BA, molded plastic 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

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	EGF1T	UNIT
Device marking code		ET	
Maximum repetitive peak reverse voltage	$V_{RRM}$	1300	V
Maximum RMS voltage	V <sub>RMS</sub>	910	V
Maximum DC blocking	V <sub>DC</sub>	1300	V
Maximum average forward rectified current	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>	20	А
Non-repetitive avalanche energy at $T_A = 25$ °C, $I_{AS} = 1$ A, $L = 30$ mH	E <sub>AS</sub>	15	mJ
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	EGF1T	UNIT
Maximum instantaneous forward voltage	1.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	3.0	V
Maximum DC reverse current	V <sub>RM</sub>	T <sub>J</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	5.0	μΑ
		T <sub>J</sub> = 125 °C		50	
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A},$ $I_{rr} = 0.25 \text{ A}$		t <sub>rr</sub>	75	ns
Typical junction capacitance	4.0 V, 1 MHz		CJ	8.0	pF

### **Notes**

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	EGF1T	UNIT	
Typical thermal registance	R <sub>θJA</sub> <sup>(1)</sup>	50	- °C/W	
Typical thermal resistance	R <sub>θJL</sub> <sup>(1)</sup>	20		

#### Note

(1) Thermal resistance from junction to ambient and from junction to lead, PCB mounted on 0.95" x 0.95" (24 mm x 24 mm) copper pad areas

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
EGF1T-E3/67A	0.104	67A	1500	7" diameter plastic tape and reel	
EGF1T-E3/5CA	0.104	5CA	6500	13" diameter plastic tape and reel	
EGF1THE3/67A (1)	0.104	67A	1500	7" diameter plastic tape and reel	
EGF1THE3/5CA (1)	0.104	5CA	6500	13" diameter plastic tape and reel	

#### Note

(1) AEC-Q101 qualified

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

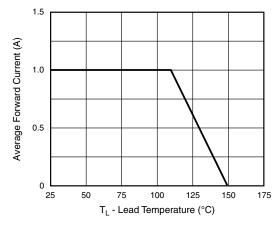


Fig. 1 - Maximum Forward Current Derating Curve

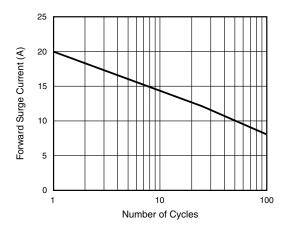


Fig. 2 - Maximum Non-Repetitive Forward Surge Current



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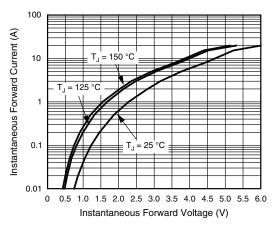


Fig. 3 - Typical Instantaneous Forward Characteristics

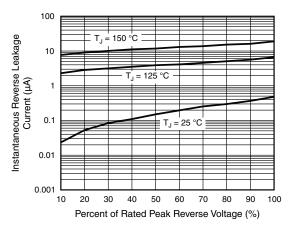


Fig. 4 - Typical Reverse Leakage Characteristics

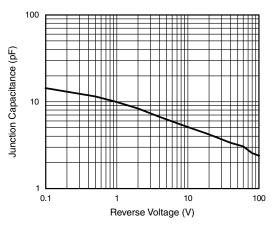


Fig. 5 - Typical Junction Capacitance Per Leg

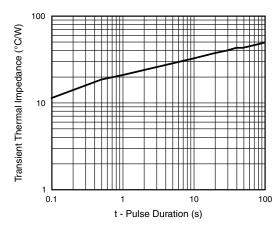
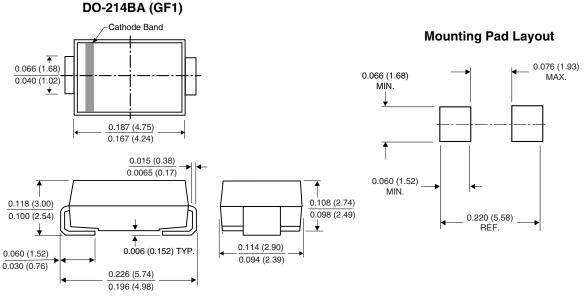


Fig. 6 - Typical Transient Thermal Impedance

# PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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Vishay

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