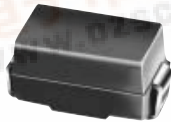




EGF1T

Vishay General Semiconductor

Surface Mount Glass Passivated Ultrafast Rectifier



DO-214BA (GF1)

* Glass-plastic encapsulation technique is covered by patent No. 3,996,602, brazed-lead assembly by Patent No. 3,930,306 and lead forming by Patent No. 5,151,846

FEATURES

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high voltage rectification of photoflash application.

MECHANICAL DATA

Case: DO-214BA, molded plastic over glass body

Epoxy meets UL 94V-0 flammability rating

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

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	1300 V
I_{FSM}	20 A
t_{rr}	75 ns
E_{AS}	15 mJ
T_J max.	150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	EGF1T	UNIT
Device marking code		ET	
Maximum repetitive peak reverse voltage	V_{RRM}	1300	V
Maximum RMS voltage	V_{RMS}	910	V
Maximum DC blocking	V_{DC}	1300	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	20	A
Non-repetitive avalanche energy at $T_A = 25\text{ °C}$, $I_{AS} = 1\text{ A}$, $L = 30\text{ mH}$	E_{AS}	15	mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	EGF1T	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	1.0 A	$T_J = 25\text{ }^{\circ}\text{C}$	V_F	3.0	V
Maximum DC reverse current ⁽²⁾	V_{RM}	$T_J = 25\text{ }^{\circ}\text{C}$ $T_J = 125\text{ }^{\circ}\text{C}$	I_R	5.0 50	μA
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$		t_{rr}	75	ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	8.0	pF

Notes:(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	EGF1T	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	50 20	$^{\circ}\text{C/W}$

Note:

(1) Thermal resistance from junction to ambient and from junction to lead, P.C.B. mounted on 0.95 x 0.95" (24 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) Automotive grade AEC Q101 qualified

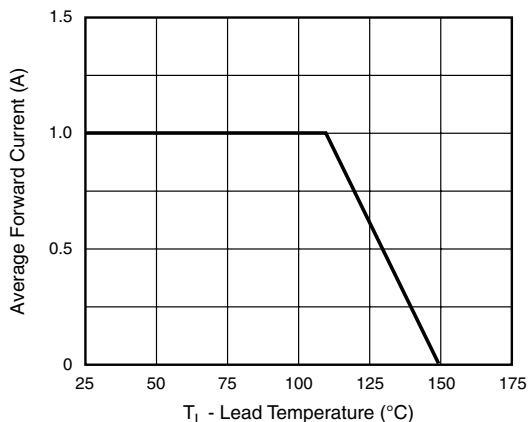
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Maximum Forward Current Derating Curve

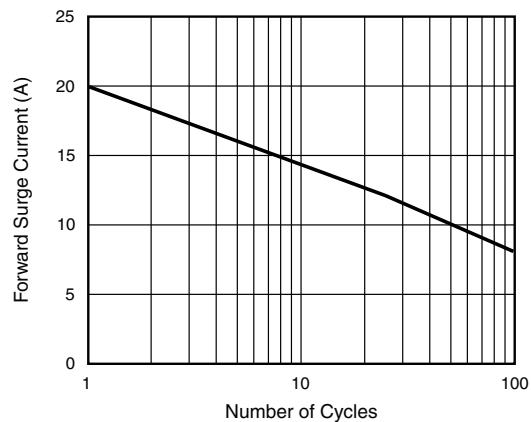


Figure 2. Maximum Non-Repetitive Forward Surge Current

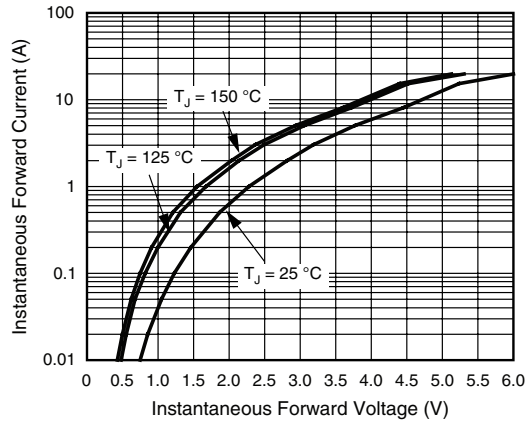


Figure 3. Typical Instantaneous Forward Characteristics

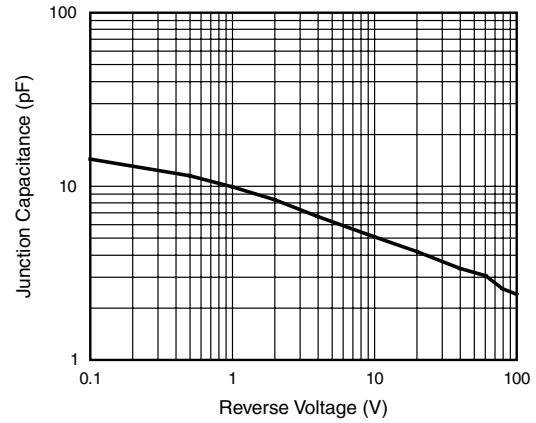


Figure 5. Typical Junction Capacitance Per Leg

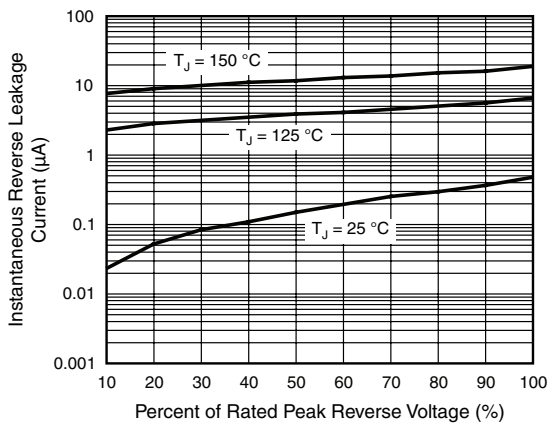


Figure 4. Typical Reverse Leakage Characteristics

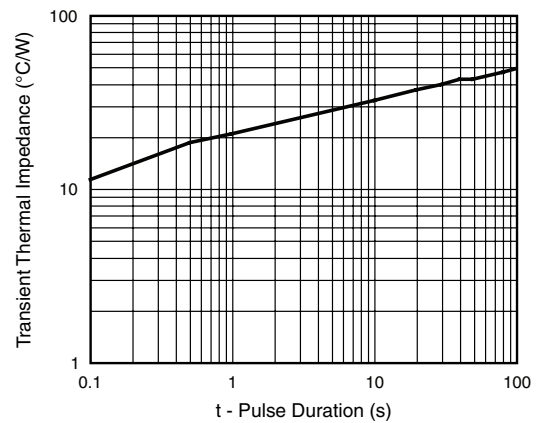
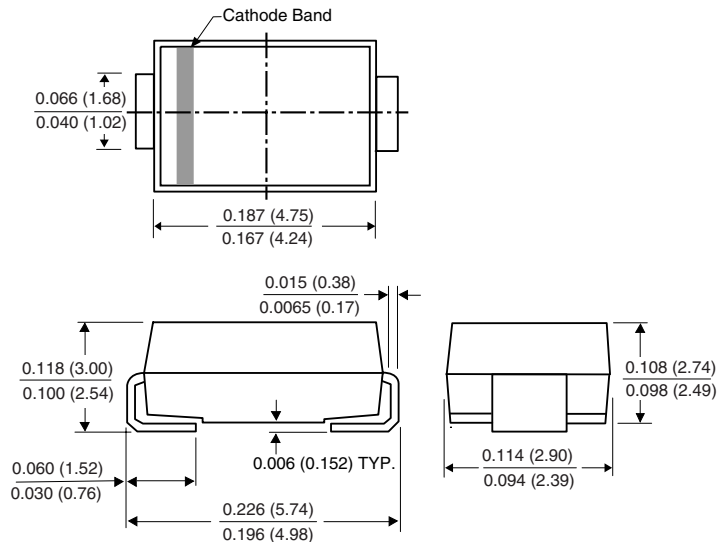


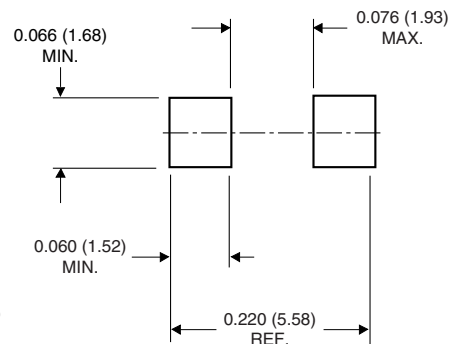
Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214BA (GF1)



Mounting Pad Layout





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All product specifications and data are subject to change without notice.

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