



## Surface-Mount Glass Passivated Ultrafast Rectifier

Superectifier®



GF1 (DO-214BA)

Cathode  Anode



RoHS  
COMPLIANT

### FEATURES

- Superectifier structure for high reliability condition
- 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
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	1300 V
$I_{FSM}$	20 A
$t_{rr}$	75 ns
$E_{AS}$	15 mJ
$V_F$ at $I_F = 1.0$ A	3.0 V
$T_J$ max.	150 °C
Package	GF1 (DO-214BA)
Circuit configuration	Single

### TYPICAL APPLICATIONS

For use in high voltage rectification of photoflash application.

### MECHANICAL DATA

**Case:** GF1 (DO-214BA), molded plastic over glass body  
Molding compound meets UL 94 V-0 flammability rating  
Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified  
("X" denotes revision code e.g. A, B)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102  
HE3 suffix meet JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	EGF1T	UNIT
Device marking code		ET	
Maximum repetitive peak reverse voltage	$V_{RRM}$	1300	V
Maximum RMS voltage	$V_{RMS}$	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 $T_A = 25$ °C, $I_{AS} = 1$ A, $L = 30$ mH	$E_{AS}$	15	mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	°C



ELECTRICAL CHARACTERISTICS (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	μA
		T <sub>J</sub> = 125 °C		50	
Typical 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>	75	ns
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	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 resistance	R <sub>θJA</sub> <sup>(1)</sup>	50	°C/W
	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
EGF1THE3_A/H <sup>(1)</sup>	0.104	H	1500	7" diameter plastic tape and reel
EGF1THE3_A/I <sup>(1)</sup>	0.104	I	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)**

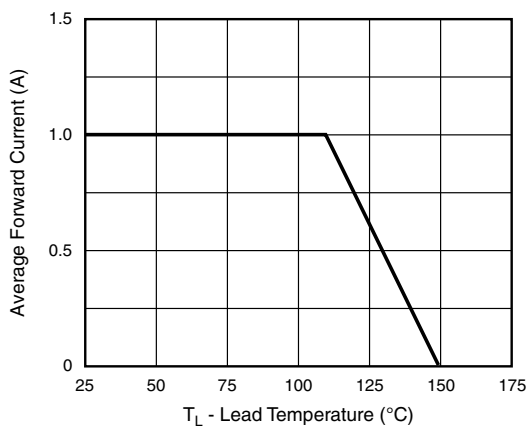


Fig. 1 - Maximum Forward Current Derating Curve

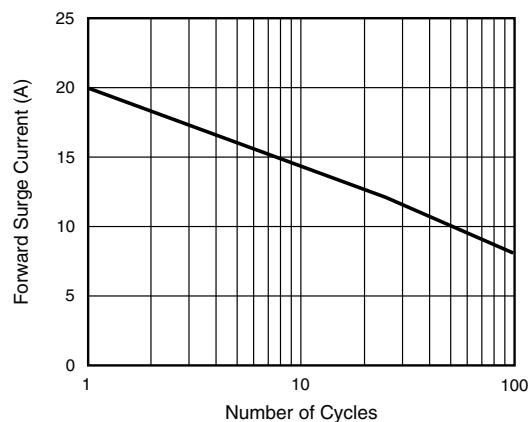


Fig. 2 - Maximum Non-Repetitive Forward Surge Current

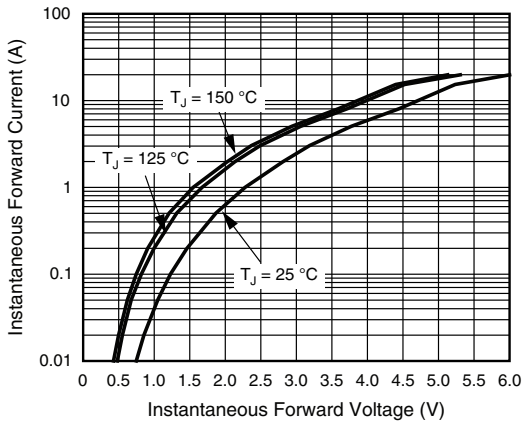


Fig. 3 - Typical Instantaneous Forward Characteristics

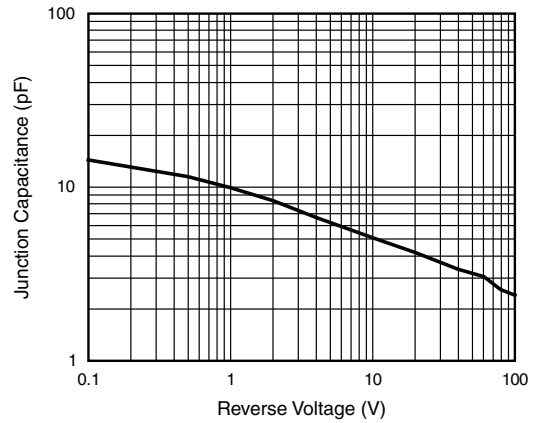


Fig. 5 - Typical Junction Capacitance Per Leg

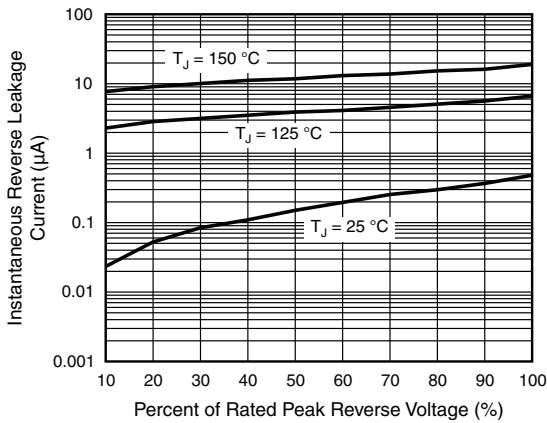


Fig. 4 - Typical Reverse Leakage Characteristics

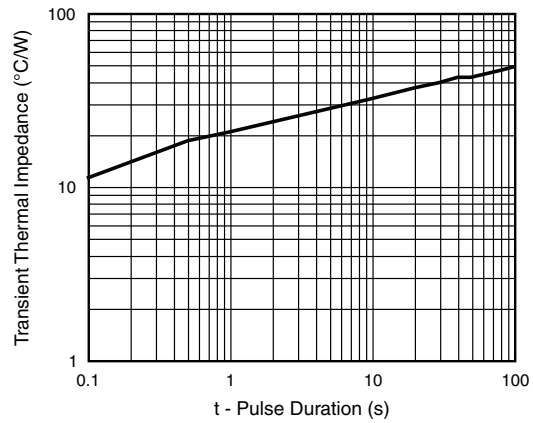
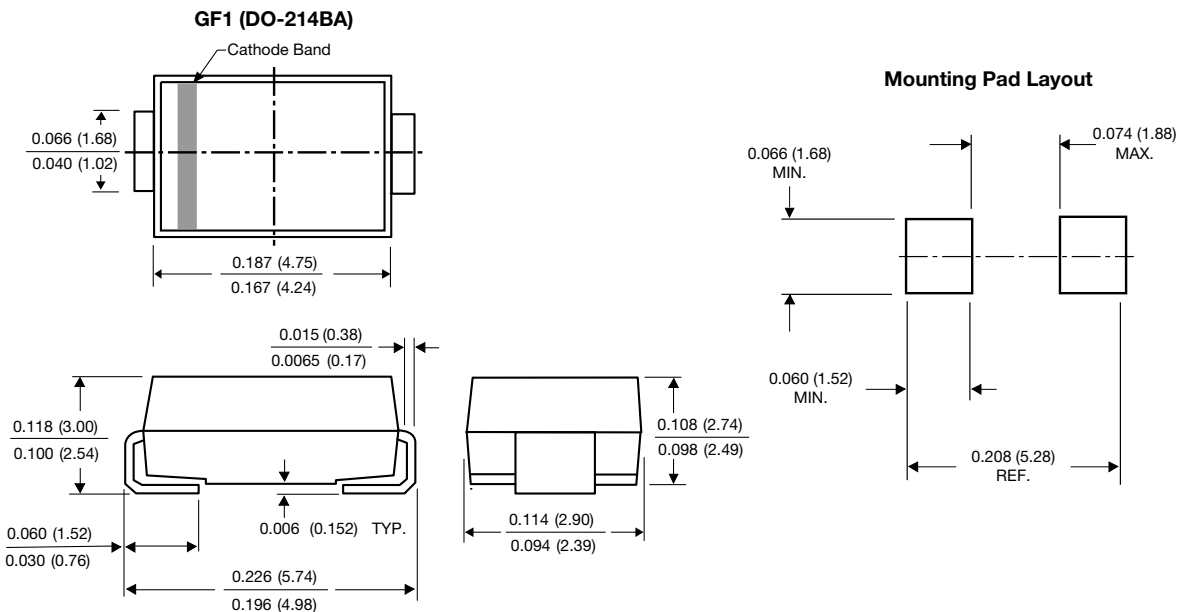


Fig. 6 - Typical Transient Thermal Impedance

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





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