Not for New Designs

EGF1A, EGF1B, EGF1C, EGF1D

Vishay General Semiconductor

Surface-Mount Glass Passivated Ultrafast Rectifier

- Superectifier structure for high reliability condition
 Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- · Low switching losses, high efficiency
- · High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 $^\circ\mathrm{C}$
- AEC-Q101 qualified

FEATURES

- Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

MECHANICAL DATA

Case: GF1 (DO-214BA), molded epoxy 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	EGF1A	EGF1B	EGF1C	EGF1D	UNIT	
Device marking code		EA	EB	EC	ED		
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	V	
Maximum RMS voltage	V _{RMS}	35	70	105	140	V	
Maximum DC blocking voltage	V _{DC}	50	100	150	200	V	
Maximum average forward rectified current at T_L = 125 °C	I _{F(AV)}		А				
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}		А				
Operating junction and storage temperature range	TJ, T _{STG}	-65 to +175				°C	





Superectifier[®]

www.vishay.com

Cathode O Anode

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS						
I _{F(AV)}	1.0 A					
V _{RRM}	50 V, 100 V, 150 V, 200 V					
I _{FSM}	30 A					
t _{rr}	50 ns					
V _F	1.0 V					
T _J max.	175 °C					
Package	GF1 (DO-214BA)					
Circuit configuration	Single					





COMPLIANT

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	EGF1A	EGF1B	EGF1C	EGF1D	UNIT
Maximum instantaneous forward voltage	1.0 A		V _F ⁽¹⁾	1.0				V
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C	I _R ⁽¹⁾	5.0			μA	
		T _A = 125 °C	'R ` ′	50				
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t _{rr}	50			ns	
Typical junction capacitance	4.0 V, 1 MHz		CJ	15			pF	

Note

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

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	EGF1A	EGF1B	EGF1C	EGF1D	UNIT		
Typical thermal resistance	R _{0JA} ⁽¹⁾	85				°C/W		
	R _{0JL} ⁽¹⁾	30				0/10		

Note

(1) Thermal resistance from junction to ambient and from junction to lead, PCB mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
EGF1DHE3_B/H ⁽¹⁾	0.104	Н	1500	7" diameter plastic tape and reel			
EGF1DHE3_B/I (1)	0.104	I	6500	13" diameter plastic tape and reel			

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise specified)

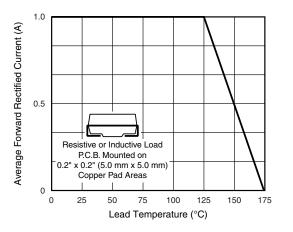


Fig. 1 - Maximum Forward Current Derating Curve

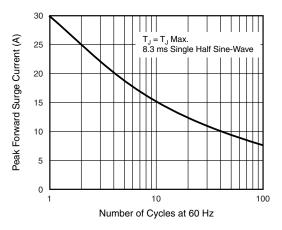


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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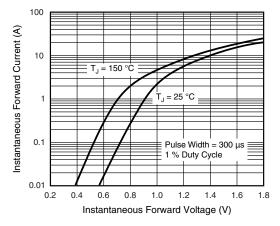


Fig. 3 - Typical Instantaneous Forward Characteristics

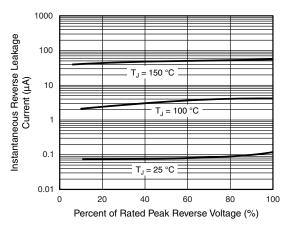


Fig. 4 - Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

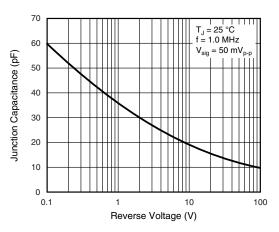


Fig. 5 - Typical Junction Capacitance

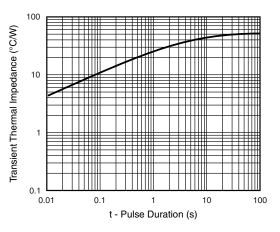
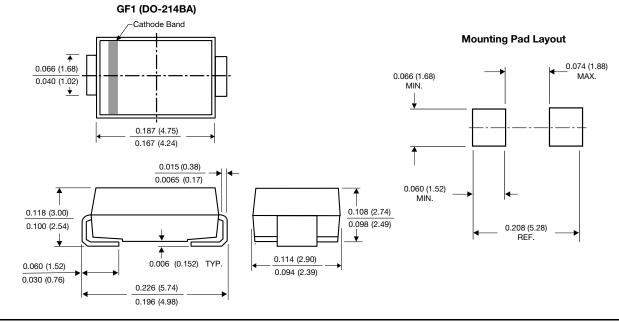


Fig. 6 - Typical Transient Thermal Impedance



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