

GF1A, GF1B, GF1D, GF1G, GF1J, GF1K, GF1M

Vishay Semiconductors

Surface Mount Glass Passivated Rectifier

EE

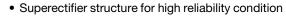
SUPERECTIFIER®



DO-214BA (GF1)

PRIMARY CHARACTERISTICS								
$I_{F(AV)}$	1.0 A							
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V 800 V, 1000 V							
I _{FSM}	30 A							
V_{F}	1.1 V, 1.2 V							
I _R	5.0 μA							
T_{J} max.	175 °C							
Package	DO-214BA (GF1)							
Diode variations	Single die							

FEATURES





- Ideal for automated placement
- Low forward voltage drop
- · Low leakage current



- High forward surge capability
- 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

MECHANICAL DATA

Case: DO-214BA, molded epoxy 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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	GF1A	GF1B	GF1D	GF1G	GF1J	GF1K	GF1M	UNIT
Device marking code		GA	GB	GD	GG	GJ	GK	GM	
Max. repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Max. DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified current at T _L = 125 °C	I _{F(AV)}	1.0						Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30					Α		
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 175						°C	

Typical reverse recovery time

Typical junction capacitance

GF1A, GF1B, GF1D, GF1G, GF1J, GF1K, GF1M

2.0

15

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μs

рF

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)											
PARAMETER	TEST (CONDITIONS	SYMBOL	GF1A	GF1B	GF1D	GF1G	GF1J	GF1K	GF1M	UNIT
Max. instantaneous forward voltage	1.0 A		V _F	1.1					1.2		V
Max. DC reverse current at		T _A = 25 °C	5.0				μA				
rated DC blocking voltage	C blocking voltage $T_A = 125 ^{\circ}\text{C}$		I _R	50							μΑ
Typical reverse recovery time	$I_F = 0.5$	A, I _R = 1.0 A,	+	2.0					116		

 t_{rr}

 C_J

 $I_{rr}=0.25\;A$ 4.0 V, 1 MHz

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER SYMBOL GF1A GF1B GF1D GF1G GF1J GF1K GF1M U							UNIT		
Typical thermal resistance (1)	$R_{\theta JA}$	80							°C/W
Typical thermal resistance (*)	$R_{\theta JL}$	26							C/VV

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				
GF1J-E3/67A	0.104	67A	1500	7" diameter plastic tape and reel				
GF1J-E3/5CA	0.104	5CA	6500	13" diameter plastic tape and reel				
GF1JHE3/67A (1)	0.104	67A	1500	7" diameter plastic tape and reel				
GF1JHE3/5CA (1)	0.104	5CA	6500	13" diameter plastic tape and reel				

Note

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

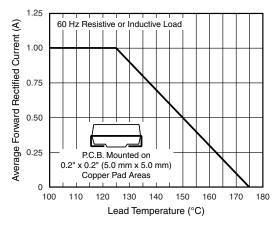


Fig. 1 - Forward Current Derating Curve

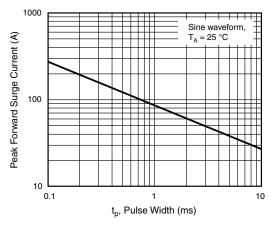


Fig. 2 - Non-Repetitive Peak Forward Surge Current

⁽¹⁾ AEC-Q101 qualified

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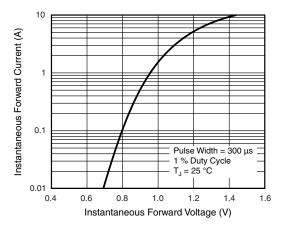


Fig. 3 - Typical Instantaneous Forward Characteristics

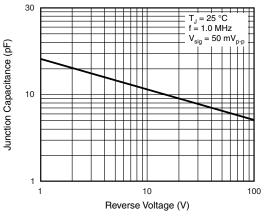


Fig. 5 - Typical Junction Capacitance

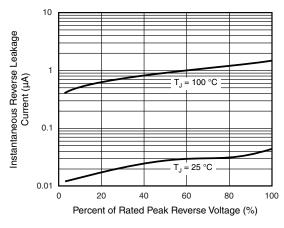


Fig. 4 - Typical Reverse Characteristics

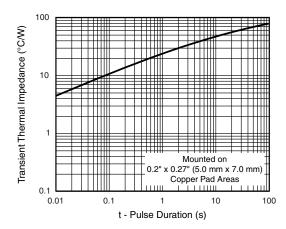


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214BA (GF1) **Mounting Pad Layout** 0.066 (1.68) 0.076 (1.93) 0.066 (1.68) MAX. 0.040 (1.02) MIN. 0.187 (4.75) 0.167 (4.24) 0.015 (0.38) 0.0065 (0.17) 0.060 (1.52) MIN. 0.108 (2.74) 0.118 (3.00) 0.100 (2.54) 0.098 (2.49) 0.220 (5.58) REF. 0.114 (2.90) 0.006 (0.152) TYP 0.060 (1.52) 0.094 (2.39) 0.030 (0.76) 0.226 (5.74) 0.196 (4.98)



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