

Surface Mount Glass Passivated Rectifier

SUPERECTIFIER®



DO-214BA (GF1)

FEATURES

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- High forward surge 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



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

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 μ A
T_J max.	175 °C
Package	DO-214BA (GF1)
Diode variations	Single die

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							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175							°C

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ 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 rated DC blocking voltage		T _A = 25 °C	I _R	5.0							μA
		T _A = 125 °C		50							
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	2.0							μs
Typical junction capacitance	4.0 V, 1 MHz		C _J	15							pF

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

PARAMETER	SYMBOL	GF1A	GF1B	GF1D	GF1G	GF1J	GF1K	GF1M	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}	80							°C/W
	R _{θJL}	26							

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

⁽¹⁾ AEC-Q101 qualified

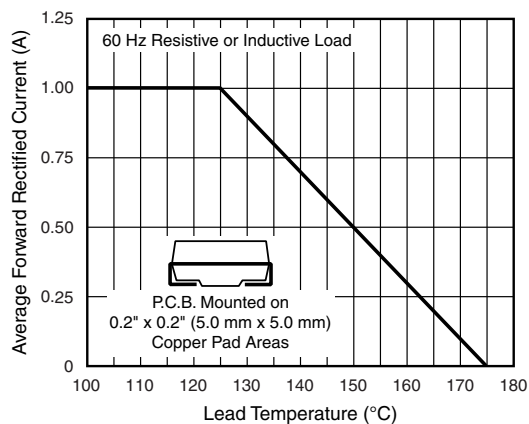
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

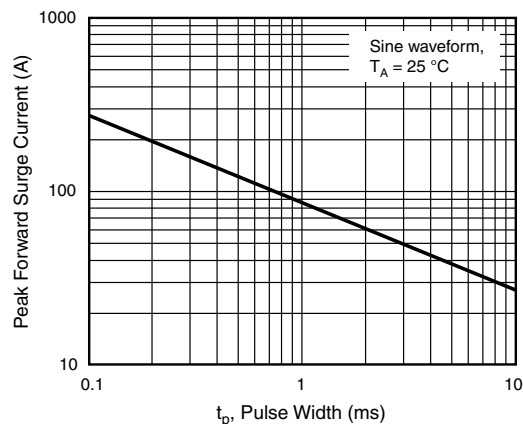


Fig. 2 - Non-Repetitive Peak Forward Surge Current

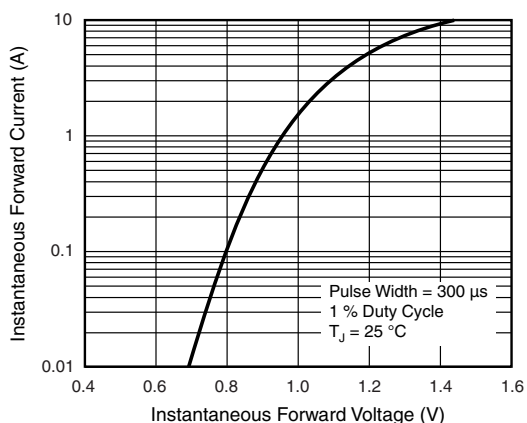


Fig. 3 - Typical Instantaneous Forward Characteristics

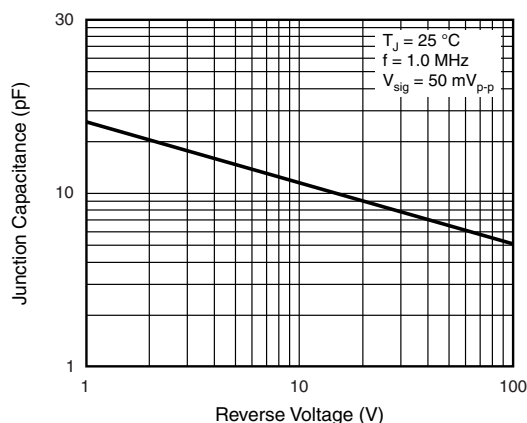


Fig. 5 - Typical Junction Capacitance

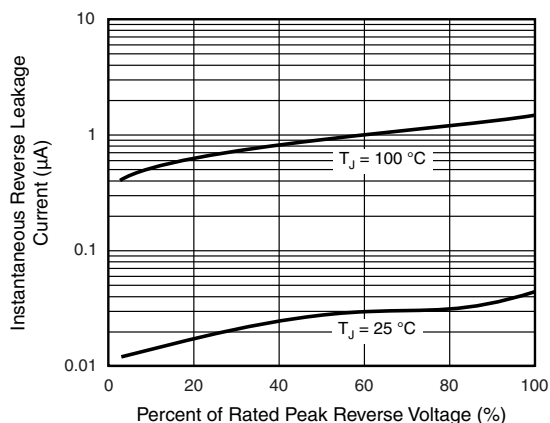


Fig. 4 - Typical Reverse Characteristics

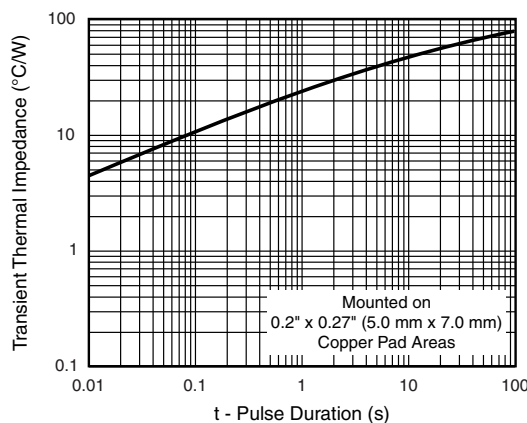
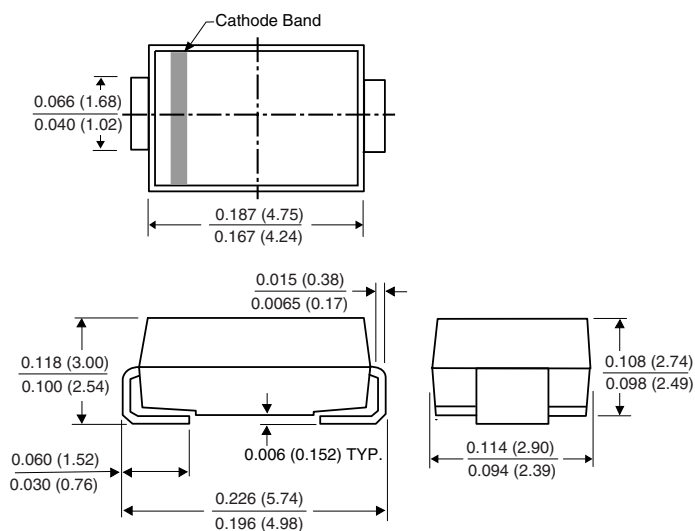
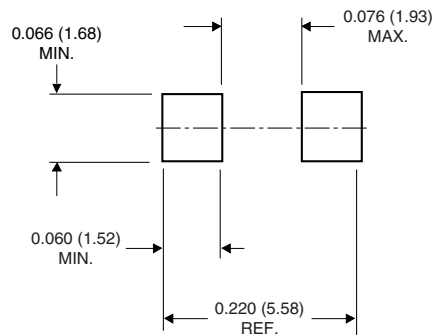


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214BA (GF1)

Mounting Pad Layout




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