

Revision: 15-Mar-11

RGP02-12E thru RGP02-20E

Vishay General Semiconductor

Glass Passivated Junction Fast Switching Rectifier



FEATURES

- Superectifier structure for high reliability condition
- · Cavity-free glass-passivated junction
- · Fast switching for high efficiency
- Low leakage current, typical I_B less than 0.2 µA
- · High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 gualified
- · Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

TYPICAL APPLICATIONS

High voltage rectification of G2 grid CRT and TV, snubber circuit of camera flash, snubber circuit of automotive ignition module.

MECHANICAL DATA

Case: DO-204AL, 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 gualified

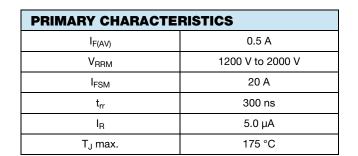
Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102 E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix

meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RGP02- 12E	RGP02- 14E	RGP02- 15E	RGP02- 16E	RGP02- 17E	RGP02- 18E	RGP02- 20E	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	1200	1400	1500	1600	1700	1800	2000	v
Maximum RMS voltage	V _{RMS}	840	980	1050	1120	1190	1260	1400	V
Maximum DC blocking voltage	V _{DC}	1200	1400	1500	1600	1700	1800	2000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55 ^\circ\text{C}$	I _{F(AV)}				0.5				А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated	I _{FSM}	20					А		
Operating junction and storage temperature range	T _J , T _{STG}	- 65 to + 175					°C		

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RoHS

COMPLIANT



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)											
PARAMETER	TEST (CONDITIONS	SYMBOL	RGP02- 12E	RGP02- 14E	RGP02- 15E	RGP02- 16E	RGP02- 17E	RGP02- 18E	RGP02- 20E	UNIT
Maximum instantaneous forward voltage	0.1 A		V _F	1.8					v		
Maximum DC reverse current at		T _A = 25 °C		5.0						– μΑ	
rated DC blocking voltage		T _A = 125 °C	I _R	50							
Maximum reverse recovery time	I _F = 0.5 I _{rr} = 0.2	A, I _R = 1.0 A, 5 A	t _{rr}	300					ns		

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RGP02- 12E	RGP02- 14E	RGP02- 15E	RGP02- 16E	RGP02- 17E	RGP02- 18E	RGP02- 20E	UNIT
	R _{0JA} ⁽¹⁾	65							°C/W
Typical thermal resistance	$R_{\theta JL}^{(1)}$	30							0/10

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
RGP02-12E-E3/54	0.24	54	5500	13" diameter paper tape and reel					
RGP02-12E-E3/73	0.24	73	3000	Ammo pack packaging					
RGP02-12EHE3/54 (1)	0.24	54	5500	13" diameter paper tape and reel					
RGP02-12EHE3/73 ⁽¹⁾	0.24	73	3000	Ammo pack packaging					

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

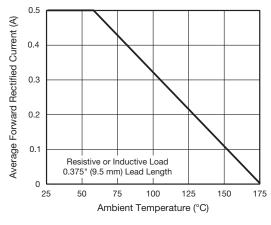


Fig. 1 - Forward Current Derating Curve

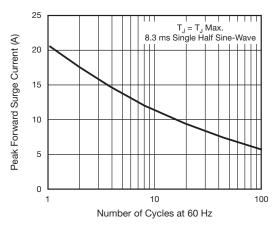


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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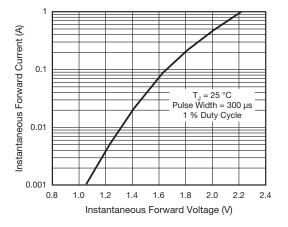


Fig. 3 - Typical Instantaneous Forward Characteristics

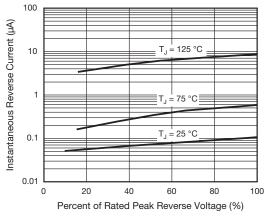
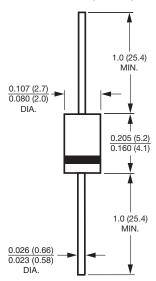


Fig. 4 - Typical Reverse Characteristics





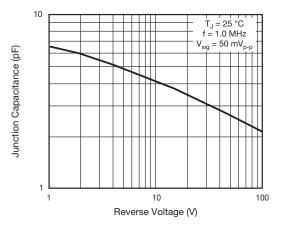


Fig. 5 - Typical Junction Capacitance

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