

RGP30A thru RGP30M

Vishay General Semiconductor

Glass Passivated Junction Fast Switching Rectifier



3.0 A

50 V to 1000 V

125 A

1.3 V

5.0 µA

175 °C

PRIMARY CHARACTERISTICS

I_{F(AV)}

 V_{RRM}

 I_{FSM}

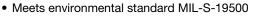
 V_{F}

 I_{R}

T_J max.

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



- 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

For use in fast switching rectification of power supply, inverters, converters and freewheeling diodes for consumer, automotive, and telecommunication.

MECHANICAL DATA

Case: DO-201AD, 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	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V _{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55 \text{ °C}$	I _{F(AV)}	I _{F(AV)} 3.0						А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	I _{FSM} 125					А		
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55$ °C	I _{R(AV)}	I _{R(AV)} 100					μA		
Operating junction and storage temperature range	TJ, T _{STG}	, T _{STG} - 65 to + 175						°C	

Document Number: 88704 For technical questions within your region, please contact one of the following: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

COMPLIANT

RoHS

Revision: 15-Mar-11 This datasheet is subject to change without notice.

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)											
PARAMETER	TEST CONDITIONS		SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT
Maximum instantaneous forward voltage	3.0 A		V _F	1.3				v			
Maximum DC reverse current		T _A = 25 °C	- I _B	5.0							
at rated DC blocking voltage		T _A = 125 °C	IR	100							- μΑ
Maximum reverse recovery time	I _F = 0.5 I _{rr} = 0.2	A, I _R = 1.0 A, 5 A	t _{rr}	150 250 500				ns			
Typical junction capacitance	4.0 V, 1	MHz	CJ	60				pF			

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	20				°C/W			

Note

⁽¹⁾ Thermal resistance from junction to ambient 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					
RGP30J-E3/54	1.28	54	1400	13" diameter paper tape and reel					
RGP30J-E3/73	1.28	73	1000	Ammo pack packaging					
RGP30JHE3/54 (1)	1.28	54	1400	13" diameter paper tape and reel					
RGP30JHE3/73 (1)	1.28	73	1000	Ammo pack packaging					

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

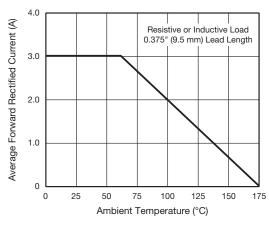


Fig. 1 - Forward Current Derating Curve

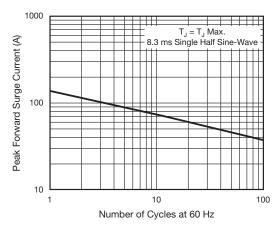


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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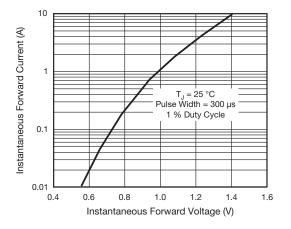


Fig. 3 - Typical Instantaneous Forward Characteristics

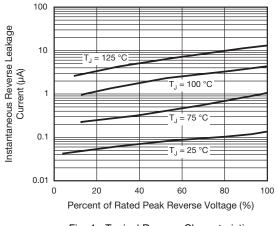
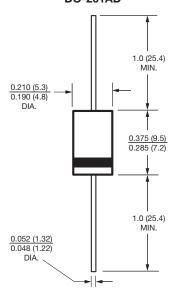


Fig. 4 - Typical Reverse Characteristics







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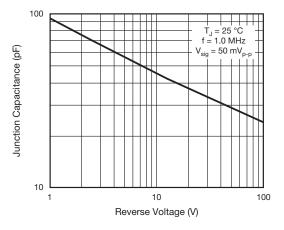


Fig. 5 - Typical Junction Capacitance



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