

## 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  $I_R$  less than  $0.2 \mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip  $275^\circ C$  max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS  
COMPLIANT

### 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 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

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	3.0 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	125 A
$V_F$	1.3 V
$I_R$	$5.0 \mu A$
$T_J$ max.	$175^\circ C$

### MAXIMUM RATINGS ( $T_A = 25^\circ C$ 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 $T_A = 55^\circ C$	$I_{F(AV)}$	3.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	125							A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$	$I_{R(AV)}$	100							$\mu A$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175							$^\circ C$

# RGP30A thru RGP30M

Vishay General Semiconductor



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST CONDITIONS	SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT	
Maximum instantaneous forward voltage	3.0 A	V <sub>F</sub>	1.3								V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0								μA
	T <sub>A</sub> = 125 °C		100								
Maximum reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>	150				250	500		ns	
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>	60								pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	RGP30A	RGP30B	RGP30D	RGP30G	RGP30J	RGP30K	RGP30M	UNIT	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	20								°C/W

**Note**

<sup>(1)</sup> 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 <sup>(1)</sup>	1.28	54	1400	13" diameter paper tape and reel
RGP30JHE3/73 <sup>(1)</sup>	1.28	73	1000	Ammo pack packaging

**Note**

<sup>(1)</sup> AEC-Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

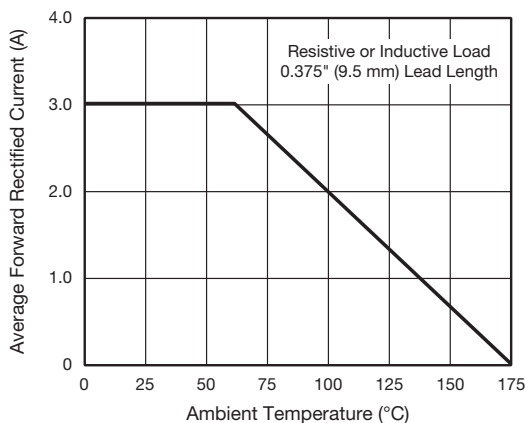


Fig. 1 - Forward Current Derating Curve

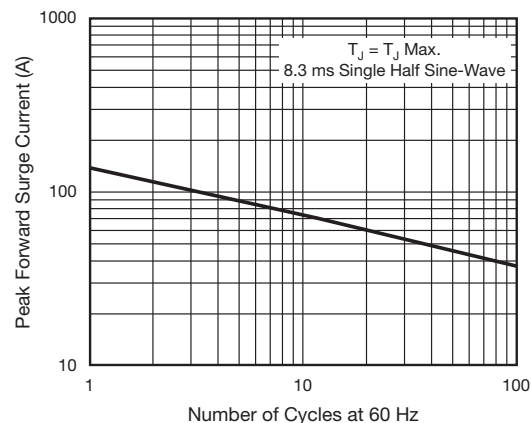


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

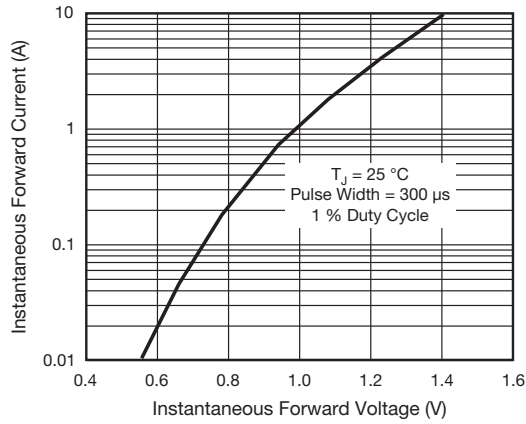


Fig. 3 - Typical Instantaneous Forward Characteristics

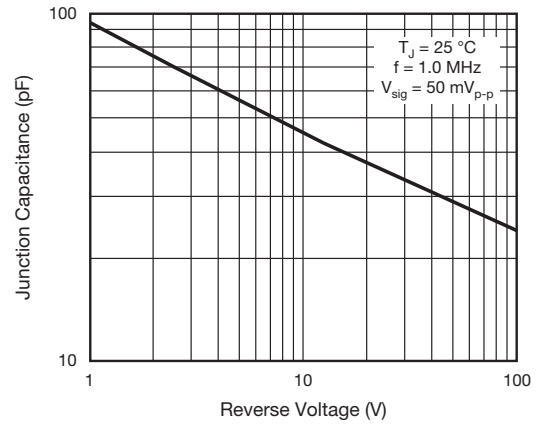


Fig. 5 - Typical Junction Capacitance

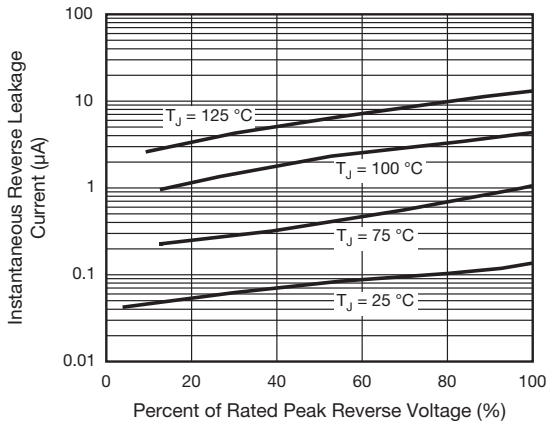
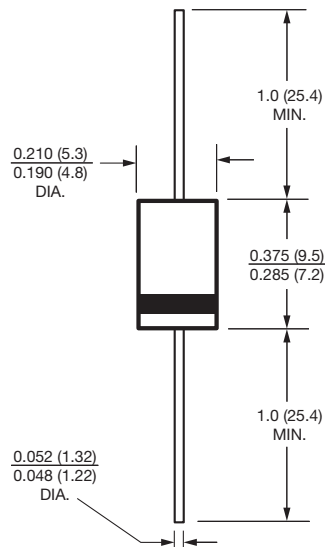


Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-201AD





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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)