

## RGP15A, RGP15B, RGP15D, RGP15G, RGP15J, RGP15K, RGP15M

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Vishay General Semiconductor

## **Glass Passivated Junction Fast Switching Plastic Rectifier**



PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub>	1.5 A							
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I <sub>FSM</sub>	50 A							
t <sub>rr</sub>	150 ns, 250 ns, 500 ns							
I <sub>R</sub>	5.0 μA							
V <sub>F</sub>	1.3 V							
T <sub>J</sub> max.	175 °C							
Package	DO-15 (DO-204AC)							
Circuit configuration	Single							

#### **FEATURES**

Superectifier structure for high reliability condition



COMPLIANT

· Cavity-free glass-passivated junction

- Fast switching for high efficiency
- Low leakage current, typical I<sub>R</sub> less than 0.1 μA
- · High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### TYPICAL APPLICATIONS

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

### **MECHANICAL DATA**

**Case:** DO-15 (DO-204AC), molded epoxy over glass body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	RGP15A	RGP15B	RGP15D	RGP15G	RGP15J	RGP15K	RGP15M	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	٧
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 °C	I <sub>F(AV)</sub>	I <sub>F(AV)</sub> 1.5						Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub> 50						Α		
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at T <sub>A</sub> = 55 °C	I <sub>R(AV)</sub>	I <sub>R(AV)</sub> 100						μΑ	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub> -65 to +175						°C		

### **Not for New Designs**



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	TEST	CONDITIONS	SYMBOL	RGP15A RGP15B RGP15D RGP15G RGP15J RGP15K RGP1							UNIT
Maximum instantaneous forward voltage	1.5 A		V <sub>F</sub>	1.3						V	
Maximum DC reverse current at		T <sub>A</sub> = 25 °C	I <sub>R</sub>	5.0							μA
rated DC blocking voltage		T <sub>A</sub> = 150 °C	I <sub>R</sub>	200					μΑ		
Maximum reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	5 A, I <sub>R</sub> = 1.0 A, 25 A	t <sub>rr</sub>	150 250 500				00	ns		
Typical junction capacitance	4.0 V,	1 MHz	СЛ	25				pF			

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER SYMBOL RGP15A RGP15B RGP15D RGP15G RGP15J RGP15K RGP15M U						UNIT		
Typical thermal resistance	R <sub>0JA</sub> (1)	45				°C/W		

#### Note

 $<sup>^{(1)}</sup>$  Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	JNIT WEIGHT (g) PREFERRED PACKAGE CODE BASE QUANTITY DELIVERY MODE							
RGP15J-E3/54	0.425	54	4000	13" diameter paper tape and reel					
RGP15J-E3/73	0.425	73	2000	Ammo pack packaging					



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### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

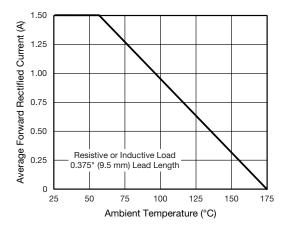


Fig. 1 - Forward Current Derating Curve

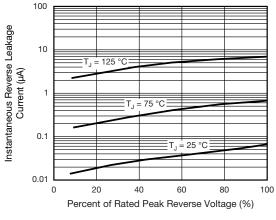


Fig. 4 - Typical Reverse Characteristics

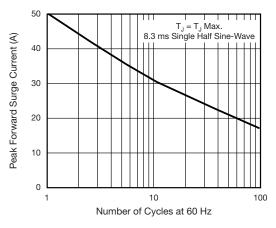


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

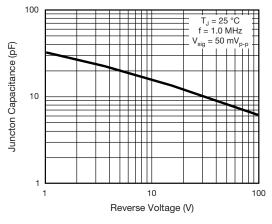


Fig. 5 - Typical Junction Capacitance

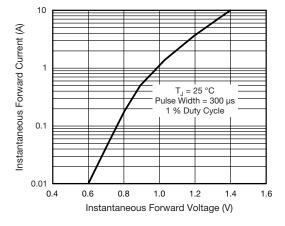


Fig. 3 - Typical Instantaneous Forward Characteristics

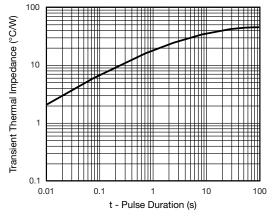


Fig. 6 - Typical Transient Thermal Impedance



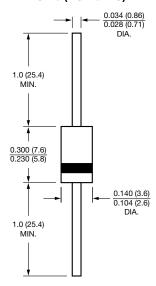
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### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### DO-15 (DO-204AC)





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