RGL34A, RGL34B, RGL34D, RGL34G, RGL34J, RGL34K



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Vishay General Semiconductor

# Surface Mount Glass Passivated Junction Fast Switching Rectifier

## SUPERECTIFIER<sup>®</sup>



DO-213AA (GL34)

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub>	0.5 A						
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V						
I <sub>FSM</sub>	10 A						
t <sub>rr</sub>	150 ns, 250 ns						
VF	1.3 V						
T <sub>J</sub> max.	175 °C						
Package	DO-213AA (GL34)						
Diode variation	Single die						

### **FEATURES**

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Fast switching for high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum RoHS peak of 260 °C COMPLIANT
- AEC-Q101 qualified
- · Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

## **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-213AA, 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: Two bands indicate cathode end - 1st band denotes device type and 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
FAST SWITCHING DEVICE: 1st BAND IS RED	OTTIDOL							
Polarity color bands (2 <sup>nd</sup> band)		Gray	Red	Orange	Yellow	Green	Blue	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	V
Maximum average forward rectified current at $T_T = 55$ °C	I <sub>F(AV)</sub>	0.5						А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	10						А
Maximum full load reverse current, full cycle average $T_A = 55 \ ^\circ C$	I <sub>R(AV)</sub>	30					μA	
Operating junction and storage temperature range	$T_J, T_STG$	- 65 to + 175						°C

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<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
Maximum instantaneous forward voltage	0.5 A	0.5 A V <sub>F</sub>			1.3					
Maximum DC reverse current at rated DC		T <sub>A</sub> = 25 °C	1-	5.0						- μΑ
blocking voltage		T <sub>A</sub> = 125 °C	I <sub>R</sub>	50						
Maximum reverse recovery time	I <sub>F</sub> = 0.5 I <sub>rr</sub> = 0.2	A, I <sub>R</sub> = 1.0 A, 5 A	t <sub>rr</sub>	150 250				50	ns	
Typical junction capacitance	4.0 V, 1	MHz	CJ	4					pF	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL RGL34A RGL34B RGL34D RGL34G RGL34J RGL34K U						UNIT	
Maximum thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	150						°C/W
	R <sub>0JT</sub> <sup>(2)</sup>	70						0/11

#### Notes

(1) Thermal resistance from junction to ambient, 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal

<sup>(2)</sup> Thermal resistance from junction to terminal, 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
RGL34J-E3/98	0.036	98	2500	7" diameter plastic tape and reel					
RGL34J-E3/83	0.036	83	9000	13" diameter plastic tape and reel					
RGL34JHE3/98 (1)	0.036	98	2500	7" diameter plastic tape and reel					
RGL34JHE3/83 <sup>(1)</sup>	0.036	83	9000	13" diameter plastic tape and reel					

Note

(1) AEC-Q101 qualified

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

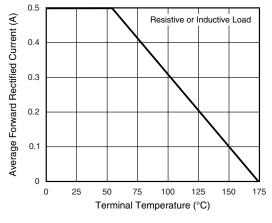


Fig. 1 - Forward Current Derating Curve

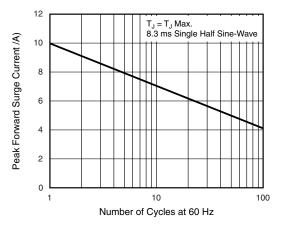


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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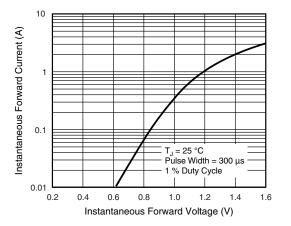


Fig. 3 - Typical Instantaneous Forward Characteristics

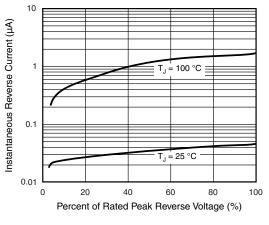
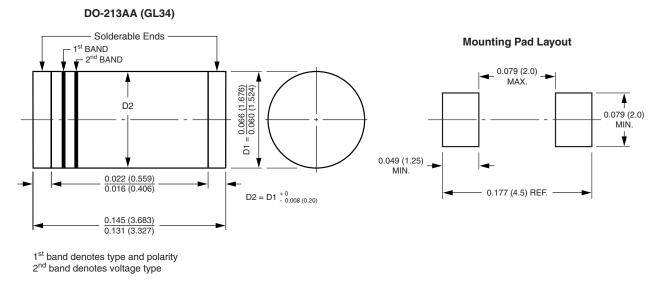


Fig. 4 - Typical Reverse Characteristics

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



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10 T<sub>J</sub> = 25 °C f = 1.0 MHz Junction Capacitance (pF)  $V_{sig} = 50 \text{ mV}$ 1 10 100 Reverse Voltage (V)

Fig. 5 - Typical Junction Capacitance



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