

## Surface Mount Glass Passivated Junction Rectifier



Patented\*

\*Glass-plastic encapsulation is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306



DO-213AA (GL34)

### FEATURES

- Superrectifier structure for high reliability condition
- Patented glass-plastic encapsulation technique
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

### MECHANICAL DATA

**Case:** DO-213AA, molded epoxy over glass body  
Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC-Q101 qualified), meets JESD 201 class 2 whisker test

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.5 A
$V_{RRM}$	50 V to 600 V
$I_{FSM}$	10 A
$V_F$	1.2 V, 1.3 V
$I_R$	5.0 $\mu$ A
$T_J$ max.	175 °C

MAXIMUM RATINGS ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	GL34A	GL34B	GL34D	GL34G	GL34J	UNIT
STANDARD RECOVERY DEVICE: 1 <sup>st</sup> BAND IS WHITE							
Polarity color bands (2 <sup>nd</sup> band)		Gray	Red	Orange	Yellow	Green	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	V
Maximum average forward rectified current at $T_T = 75\text{ }^\circ\text{C}$	$I_{F(AV)}$	0.5					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	10					A
Max. full load reverse current, full cycle average $T_A = 55\text{ }^\circ\text{C}$	$I_{R(AV)}$	30					$\mu$ A
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175					$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	GL34A	GL34B	GL34D	GL34G	GL34J	UNIT	
Maximum instantaneous forward voltage	0.5 A	V <sub>F</sub>	1.2				1.3		V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	5.0 50						μA
Typical 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>	1.5						μs
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>	4.0						pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	GL34A	GL34B	GL34D	GL34G	GL34J	UNIT	
Maximum thermal resistance	R <sub>θJA</sub> R <sub>θJT</sub>	150 <sup>(1)</sup> 70 <sup>(2)</sup>						°C/W

**Notes:**

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

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	REFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GL34G-E3/98	0.036	98	2500	7" diameter plastic tape and reel
GL34G-E3/83	0.036	83	9000	13" diameter plastic tape and reel
GL34GHE3/98 <sup>(1)</sup>	0.036	98	2500	7" diameter plastic tape and reel
GL34GHE3/83 <sup>(1)</sup>	0.036	83	9000	13" diameter plastic tape and reel

**Note:**

- (1) Automotive grade AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

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

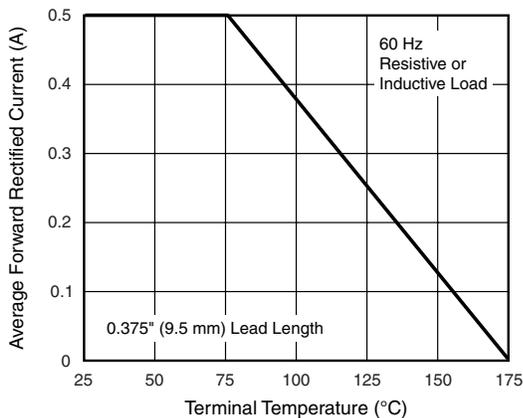


Figure 1. Forward Current Derating Curve

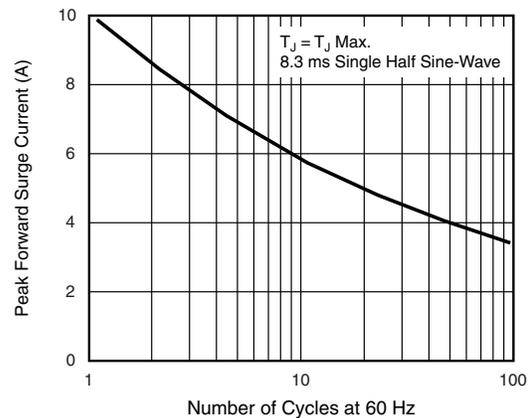


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

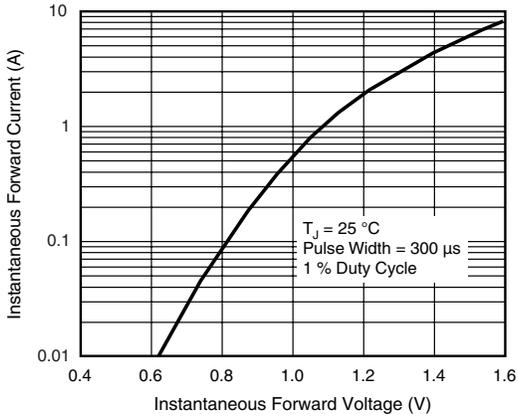


Figure 3. Typical Instantaneous Forward Characteristics

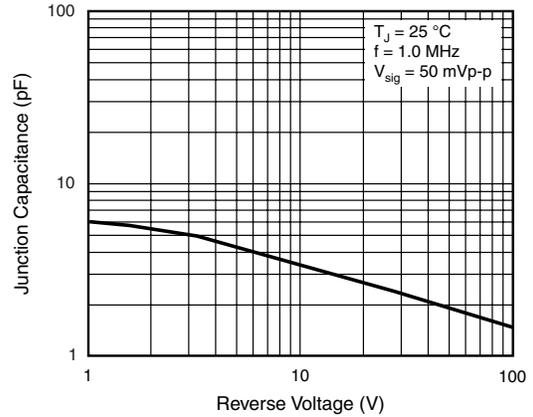


Figure 5. Typical Junction Capacitance

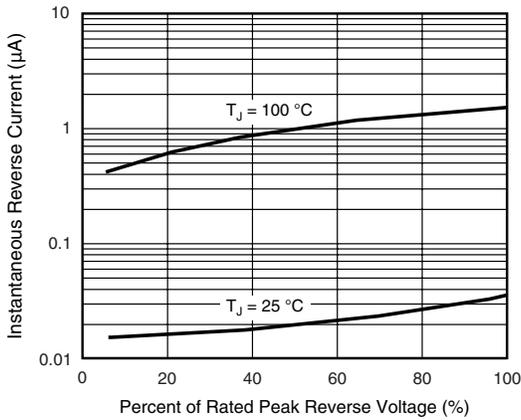
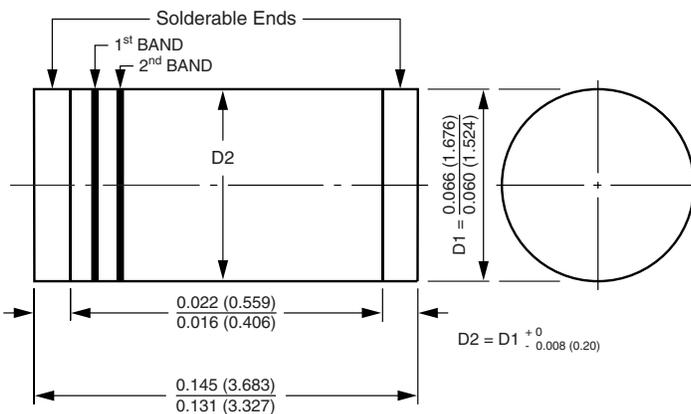


Figure 4. Typical Reverse Characteristics

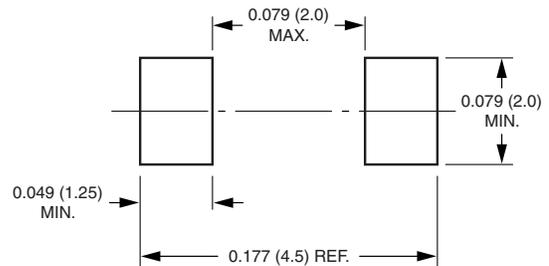
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-213AA (GL34)



1<sup>st</sup> band denotes type and polarity  
2<sup>nd</sup> band denotes voltage type

### Mounting Pad Layout





## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.