

Surface Mount Glass Passivated Junction Fast Switching Rectifier


DO-213AA (GL34)

Patented*

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

FEATURES

- Superrectifier structure for high reliability condition
- Patented glass-plastic encapsulation technique
- Ideal for automated placement
- Fast switching for high efficiency
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and free-wheeling 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-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

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

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	0.5 V
V_{RRM}	50 V to 800 V
I_{FSM}	10 A
t_{rr}	150 ns, 250 ns
V_F	1.3 V
T_j max.	175 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
FAST SWITCHING DEVICE: 1ST BAND IS RED								
Polarity color bands (2nd Band)		Gray	Red	Orange	Yellow	Green	Blue	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	V
Max. average forward rectified current at $T_T = 55\text{ °C}$	$I_{F(AV)}$	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 $T_A = 55\text{ °C}$	$I_{R(AV)}$	30						μ A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175						°C



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	RGL34	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
Maximum instantaneous forward voltage	at 0.5 A	V_F	1.3						V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	I_R	5.0 50						μA
Maximum reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	150				250		ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	4						pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
FAST SWITCHING DEVICE: 1ST BAND IS RED	SYMBOL	RGL34	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT	
Maximum thermal resistance	$R_{\theta JA}$ $R_{\theta JT}$	150 ⁽¹⁾ 70 ⁽²⁾				$^\circ\text{C/W}$			

Note:

- (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				
PREFERRED P/N	UNIT WEIGHT (g)	REFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RGL34J-E3/98	0.036	98	2500	7" Diameter Plastic Tape & Reel
RGL34J-E3/83	0.036	83	9000	13" Diameter Plastic Tape & Reel

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

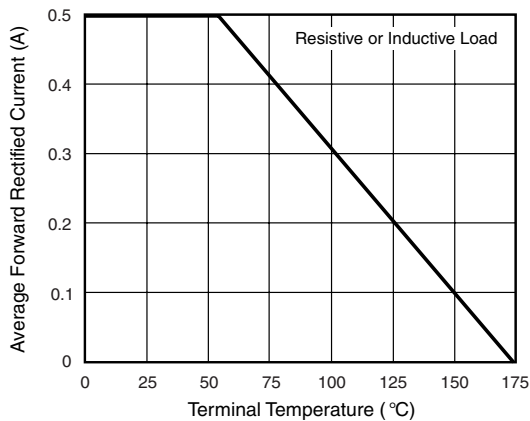


Figure 1. Forward Current Derating Curve

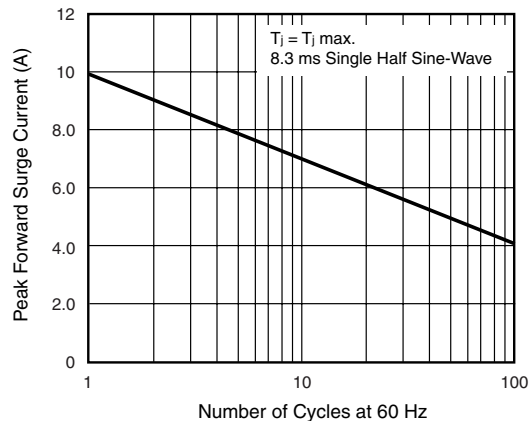


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

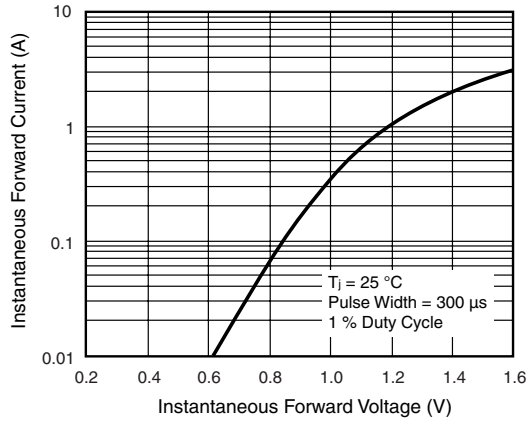


Figure 3. Typical Instantaneous Forward Characteristics

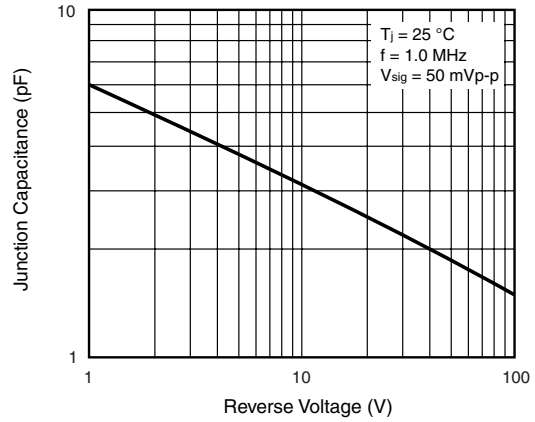


Figure 5. Typical Junction Capacitance

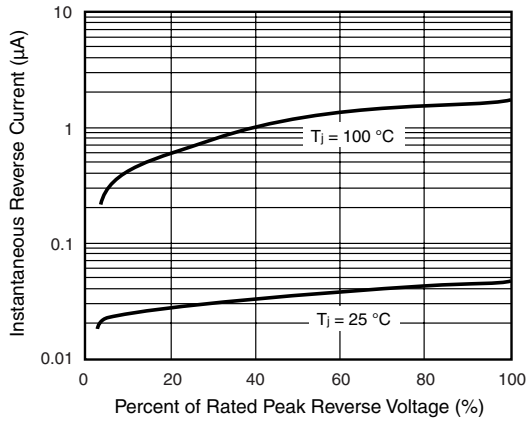
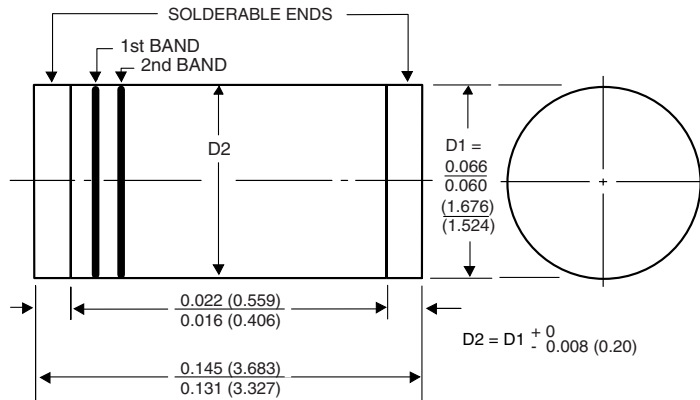


Figure 4. Typical Reverse Characteristics

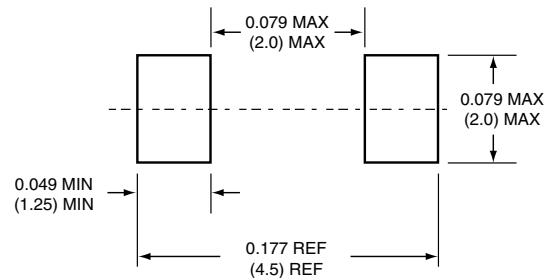
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AA (GL34)



1st band denotes type and polarity
2nd band denotes voltage type

Mounting Pad Layout





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