

## Surface Mount Glass Passivated Junction Fast Switching Rectifier

### SUPERECTIFIER®



DO-213AA (GL34)

### FEATURES

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Fast switching for high efficiency
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- 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-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 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:** 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 800 V
$I_{FSM}$	10 A
$t_{rr}$	150 ns, 250 ns
$V_F$	1.3 V
$T_J \text{ max.}$	175 °C

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

PARAMETER	SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
<b>FAST SWITCHING DEVICE: 1<sup>st</sup> BAND IS RED</b>								
Polarity color bands (2 <sup>nd</sup> 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
Maximum average forward rectified current at $T_J = 55^\circ\text{C}$	$I_{F(AV)}$	0.5						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	10						A
Maximum full load reverse current, full cycle average $T_A = 55^\circ\text{C}$	$I_{R(AV)}$	30						$\mu\text{A}$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175						°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
Maximum instantaneous forward voltage	0.5 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			50						
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		ns
Typical junction capacitance	4.0 V, 1 MHz		C <sub>J</sub>	4						pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	RGL34A	RGL34B	RGL34D	RGL34G	RGL34J	RGL34K	UNIT
Maximum thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	150						°C/W
	R <sub>θJT</sub> <sup>(2)</sup>	70						

**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

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

<b>ORDERING INFORMATION</b> (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 <sup>(1)</sup>	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

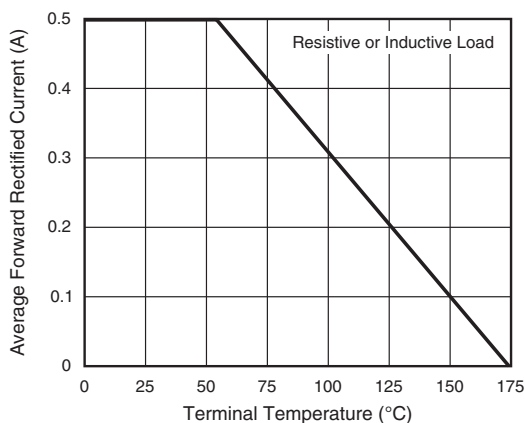
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

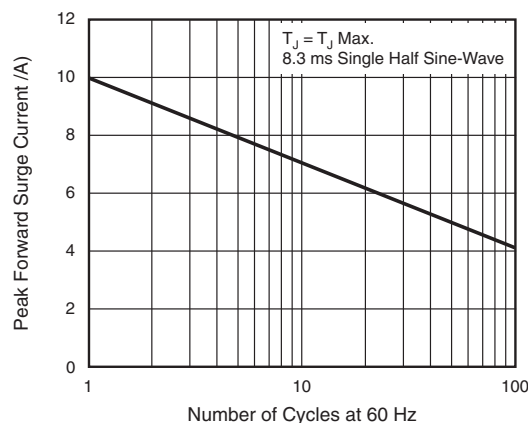


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

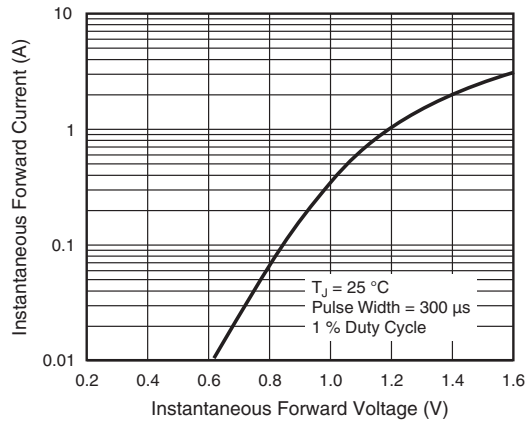


Fig. 3 - Typical Instantaneous Forward Characteristics

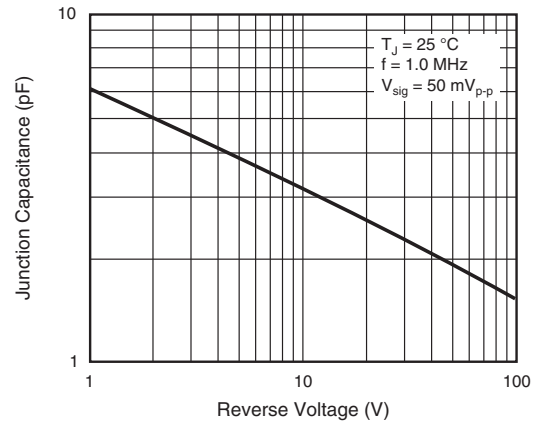


Fig. 5 - Typical Junction Capacitance

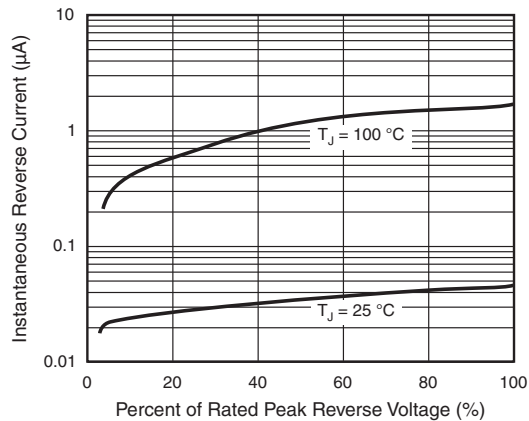
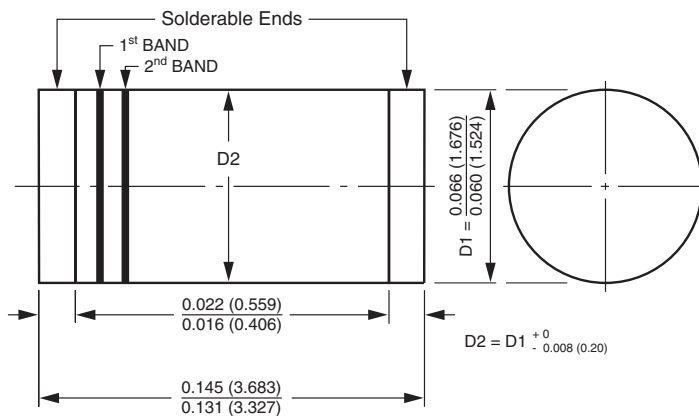


Fig. 4 - Typical Reverse Characteristics

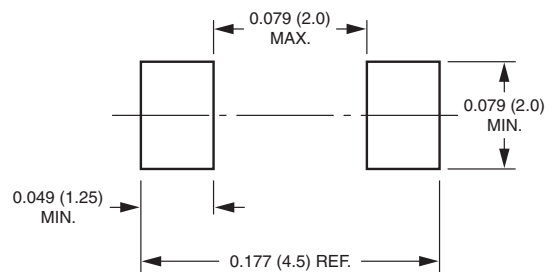
## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-213AA (GL34)



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

### Mounting Pad Layout





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