

# Vishay General Semiconductor

# **Surface Mount Glass Passivated Ultrafast Rectifier**

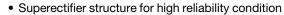
## Superectifier®



GL34 (DO-213AA)

PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	0.5 A					
V <sub>RRM</sub>	50 V to 400 V					
I <sub>FSM</sub>	10 A					
t <sub>rr</sub>	50 ns					
V <sub>F</sub>	1.25 V, 1.35 V					
T <sub>J</sub> max.	175 °C					
Package	GL34 (DO-213AA)					
Diode variation	Single					

#### **FEATURES**





· Cavity-free glass-passivated junction

RoHS

· Ideal for automated placement

- · Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
  - Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see <a href="https://www.vishav.com/doc?99912"><u>www.vishav.com/doc?99912</u></a>

### **TYPICAL APPLICATIONS**

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

#### **MECHANICAL DATA**

**Case:** GL34 (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\_X - RoHS-compliant and AEC-Q101 qualified ("X" denotes revision code e.g. A, B, ...)

**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

MAXIMUM RATINGS RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BYM07-50	BYM07-100	BYM07-150	BYM07-200	BYM07-300	BYM07-400	UNIT
Fast efficient device: 1st band is green		EGL34A	EGL34B	EGL34C	EGL34D	EGL34F	EGL34G	
Polarity color bands (2 <sup>nd</sup> band)		Gray	Red	Pink	Orange	Brown	Yellow	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	٧
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	V
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	V
Maximum average forward rectified current at T <sub>T</sub> = 75 °C	I <sub>F(AV)</sub>	0.5					Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	10						Α
Maximum full load reverse current, full cycle average at T <sub>A</sub> = 55 °C	I <sub>R(AV)</sub>	50					μA	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175					°C	



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER TEST CONDITION	TEST	SYMBOL	BYM07-50	BYM07-100	BYM07-150	BYM07-200	BYM07-300	BYM07-400	UNIT
	CONDITIONS	STWIDOL	EGL34A	EGL34B	EGL34C	EGL34D	EGL34F	EGL34G	ONIT
Maximum DC reverse current at rated DC	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>	5.0					μА	
blocking voltage	T <sub>A</sub> = 125 °C	'R\'	50						
Maximum instantaneous forward voltage	0.5 A	V <sub>F</sub> <sup>(1)</sup>	1.25 1.35				V		
Max. reverse recovery time	$I_F = 0.5 A,$ $I_R = 1.0 A,$ $I_{rr} = 0.25 A$	t <sub>rr</sub>	50				ns		
Typical junction capacitance	4.0 V, 1 MHz	CJ	7.0			pF			

#### Note

 $<sup>^{(1)}\,</sup>$  Pulse test: 300  $\mu s$  pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BYM07-50	BYM07-100	BYM07-150	BYM07-200	BYM07-300	BYM07-400	UNIT
		EGL34A	EGL34B	EGL34C	EGL34D	EGL34F	EGL34G	
Maximum thermal resistance	R <sub>0JA</sub> (1)	150					°C/W	
Maximum thermal resistance	R <sub>0</sub> JT (2)		70					

### Notes

<sup>(2)</sup> Thermal resistance from junction to terminal, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
EGL34D-E3/98	0.036	98	2500	7" diameter plastic tape and reel				
EGL34D-E3/83	0.036	83	9000	13" diameter plastic tape and reel				
EGL34DHE3_A/I (1)	0.036	I	9000	13" diameter plastic tape and reel				

#### Note

# **RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25$ °C unless otherwise noted)

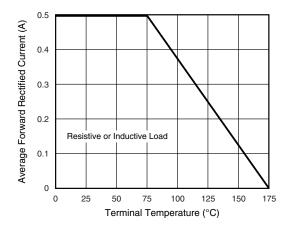


Fig. 1 - Forward Current Derating Curve

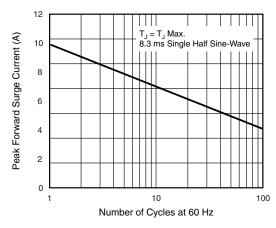


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

<sup>(1)</sup> Thermal resistance from junction to ambient, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

<sup>(1)</sup> AEC-Q101 qualified



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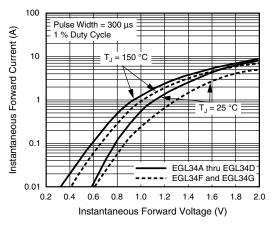


Fig. 3 - Typical Instantaneous Forward Characteristics

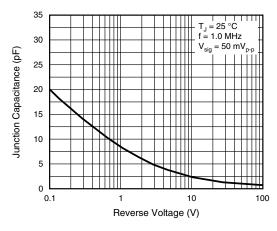


Fig. 5 - Typical Junction Capacitance

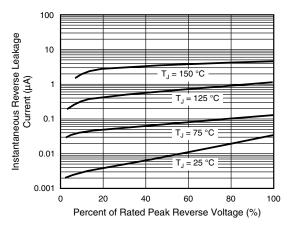


Fig. 4 - Typical Reverse Characteristics

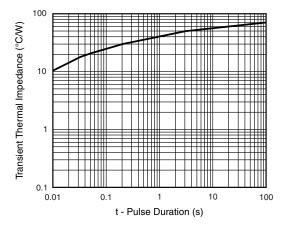
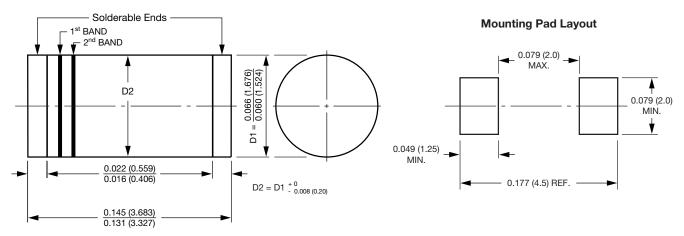


Fig. 6 - Typical Transient Thermal Impedance

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

## GL34 (DO-213AA)



<sup>1</sup>st band denotes type and polarity

<sup>2&</sup>lt;sup>nd</sup> band denotes voltage type



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