Surface-Mount Glass Passivated Ultrafast Rectifier

Superectifier®



GL34 (DO-213AA)

FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- 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 www.vishay.com/doc?99912

RoHS COMPLIANT

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-HE3_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
HE3 suffix meets JESD 201 class 2 whisker test

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.5 A
V_{RRM}	50 V to 400 V
I_{FSM}	10 A
t_{rr}	50 ns
V_F	1.25 V, 1.35 V
T_J max.	175 °C
Package	GL34 (DO-213AA)
Circuit configuration	Single

MAXIMUM RATINGS RATINGS (T_A = 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 (2nd band)		Gray	Red	Pink	Orange	Brown	Yellow	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	V
Maximum RMS voltage	V_{RMS}	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_T = 75 °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 at T_A = 55 °C	$I_{R(AV)}$	50						µA
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +175						°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	BYM07-50 / EGL34A	BYM07-100 / EGL34B	BYM07-150 / EGL34C	BYM07-200 / EGL34D	BYM07-300 / EGL34F	BYM07-400 / EGL34G	UNIT
Maximum DC reverse current at rated DC blocking voltage	T_A = 25 °C	I_R (1)	5.0						µA
	T_A = 125 °C		50						
Maximum instantaneous forward voltage	0.5 A	V_F (1)	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_{rr}	50						ns
Typical junction capacitance	4.0 V, 1 MHz	C_J	7.0						pF

Note

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BYM07-50 / EGL34A	BYM07-100 / EGL34B	BYM07-150 / EGL34C	BYM07-200 / EGL34D	BYM07-300 / EGL34F	BYM07-400 / EGL34G	UNIT
Maximum thermal resistance	$R_{\theta JA}$ (1)	150						°C/W
	$R_{\theta JT}$ (2)	70						

Notes

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

(2) 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
EGL34DHE3_B/H (1)	0.036	H	2500	7" diameter plastic tape and reel
EGL34DHE3_B/I (1)	0.036	I	9000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

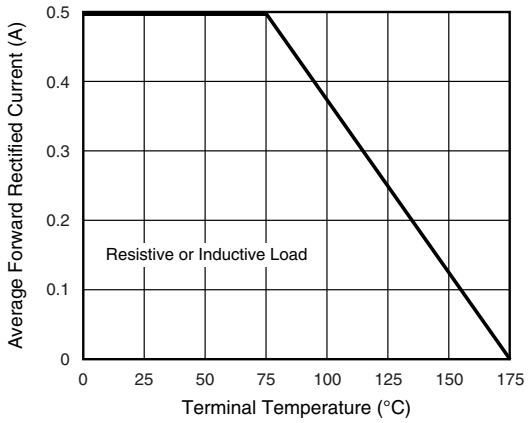


Fig. 1 - Forward Current Derating Curve

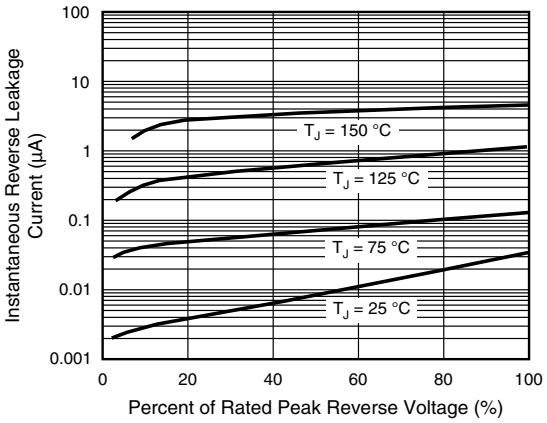


Fig. 4 - Typical Reverse Characteristics

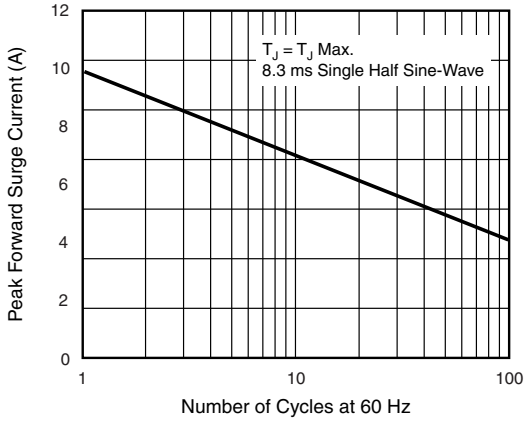


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

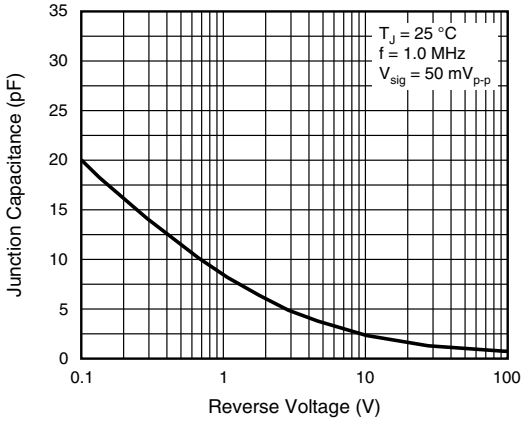


Fig. 5 - Typical Junction Capacitance

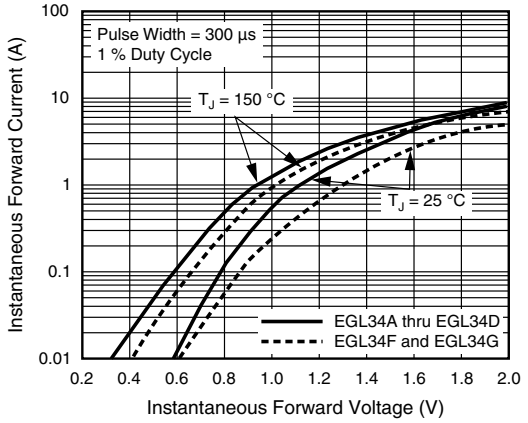


Fig. 3 - Typical Instantaneous Forward Characteristics

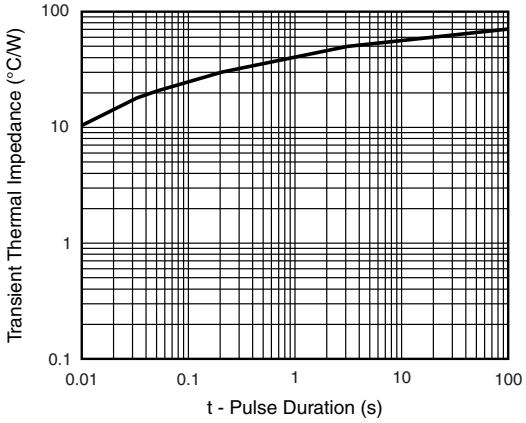


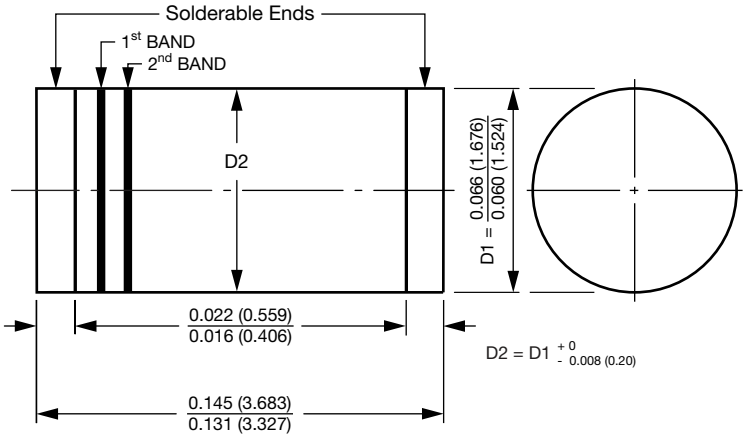
Fig. 6 - Typical Transient Thermal Impedance

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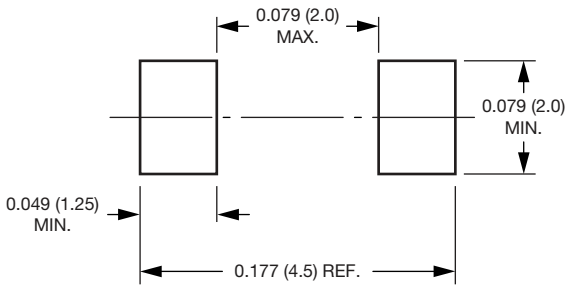
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GL34 (DO-213AA)



Mounting Pad Layout



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

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