Surface Mount Glass Passivated Ultrafast 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

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- 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 high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and telecommunication.

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

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 - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

MAXIMUM 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**	**BYM07-100**	**BYM07-150**	**BYM07-200**	**BYM07-300**	**BYM07-400**	**UNIT**
			EGL34A	EGL34B	EGL34C	EGL34D	EGL34F	EGL34G	
Maximum DC reverse current at rated DC blocking voltage (1)	T_A = 25 °C T_A = 125 °C	I_R	5.0 50						µA
Maximum instantaneous forward voltage (1)	0.5 A	V_F	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**	**BYM07-100**	**BYM07-150**	**BYM07-200**	**BYM07-300**	**BYM07-400**	**UNIT**
		EGL34A	EGL34B	EGL34C	EGL34D	EGL34F	EGL34G	
Maximum thermal resistance (1)(2)	$R_{\theta JA}$ $R_{\theta JT}$	150 70						°C/W

Notes:

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

(2) Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 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
EGL34DHE3/98 (1)	0.036	98	2500	7" diameter plastic tape and reel
EGL34DHE3/83 (1)	0.036	83	9000	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

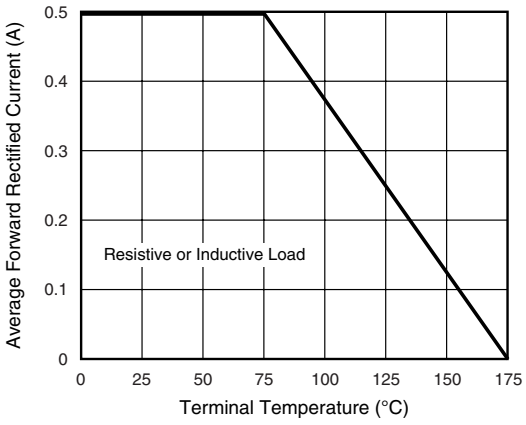


Figure 1. Forward Current Derating Curve

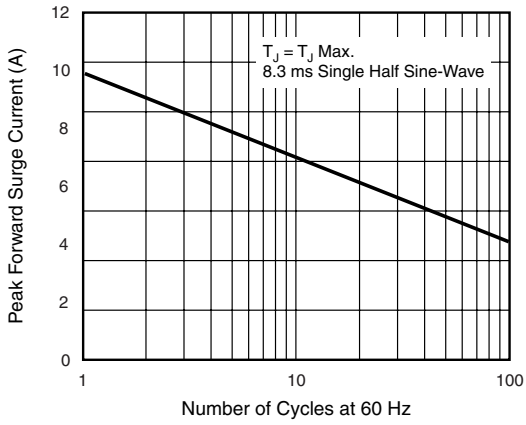


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

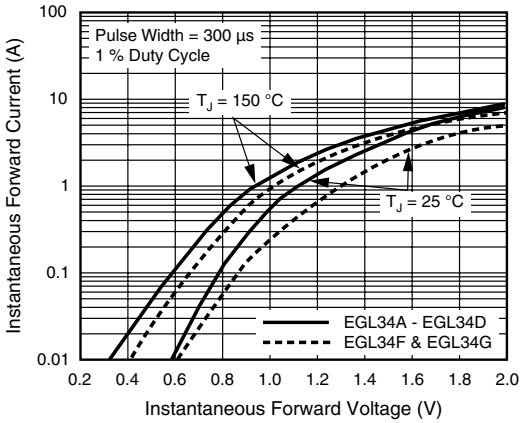


Figure 3. Typical Instantaneous Forward Characteristics

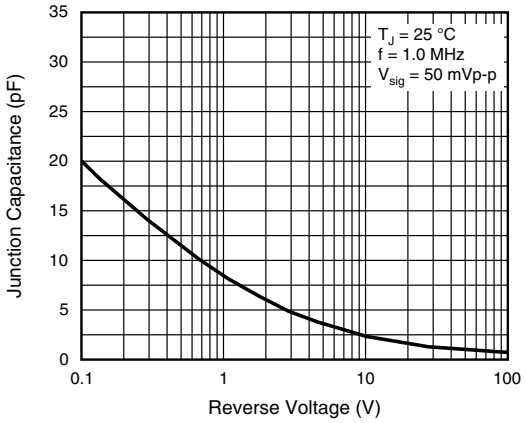


Figure 5. Typical Junction Capacitance

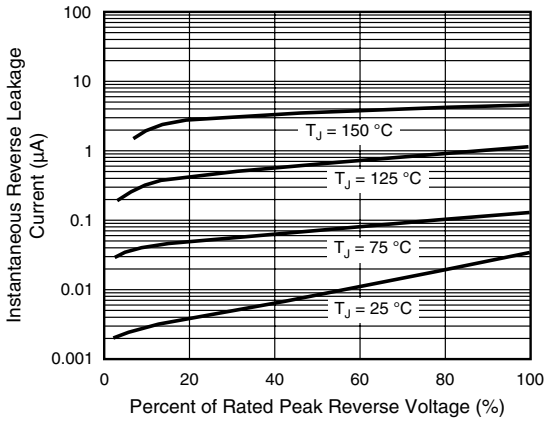


Figure 4. Typical Reverse Characteristics

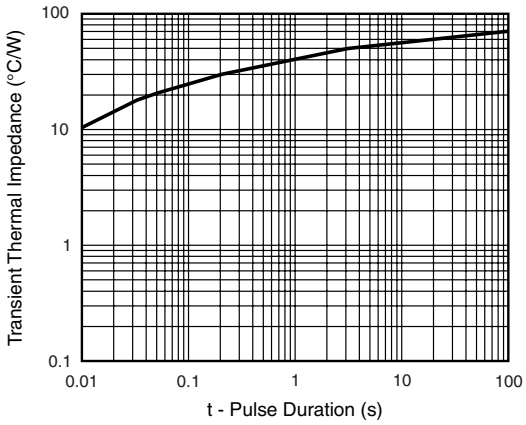
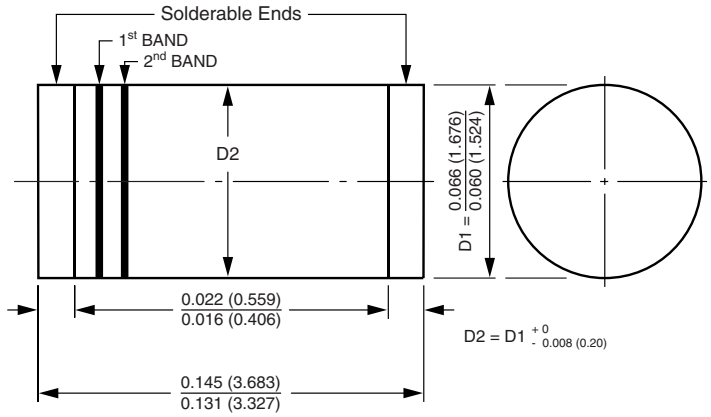


Figure 6. Typical Transient Thermal Impedance

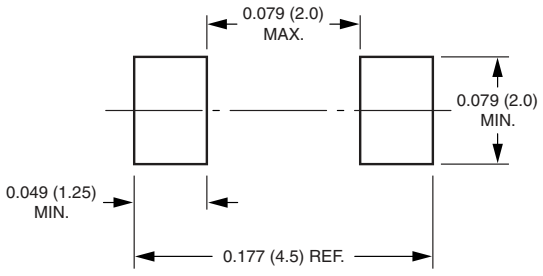
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AA (GL34)



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

Mounting Pad Layout



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