Surface Mount Glass Passivated Ultrafast Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 400 V
I_{FSM}	30 A
t_{rr}	50 ns
V_F	1.0 V, 1.25 V
T_j max.	175 °C

Patented*

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

DO-213AB (GL41)

Features

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds

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: DO-213AB, 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

Maximum Ratings

T_A = 25 °C unless otherwise specified

Parameter	Symbol	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	Unit
Fast efficient device: 1st band is Green		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
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	$I_{F(AV)}$	1.0						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30						A
Operating junction and storage temperature range	T_J,T_{STG}	- 65 to + 175						°C

Electrical Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Test condition	Symbol	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	Unit
			EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Maximum instantaneous forward voltage(1)	at 1.0 A	V_F	1.0				1.25		V
Maximum DC reverse current at rated DC blocking voltage(1)	T_A = 25 °C T_A = 125 °C	I_R	5.0 50						µA
Max. reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	50						ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	20				14		pF

Notes:

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

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	Unit
		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Maximum thermal resistance (1, 2)	$R_{\theta JA}$ $R_{\theta JT}$	60 30						°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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise specified)

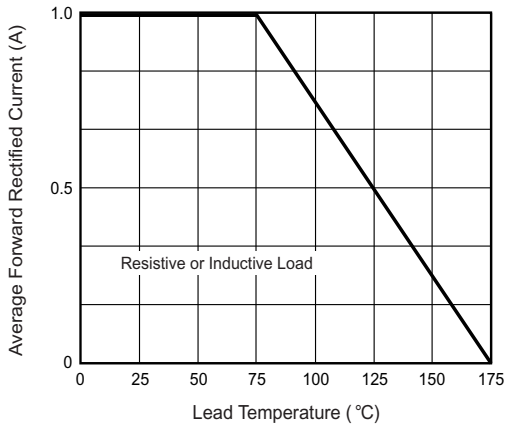


Figure 1. Maximum Forward Current Derating Curve

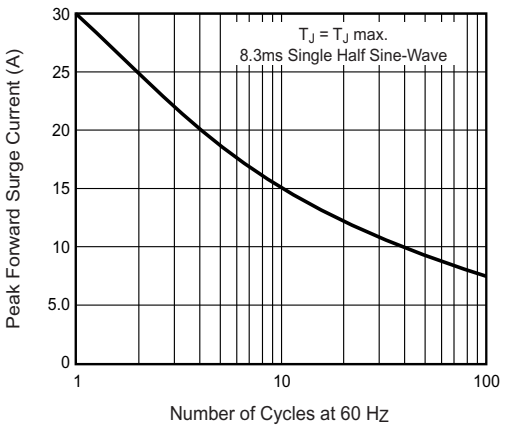


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

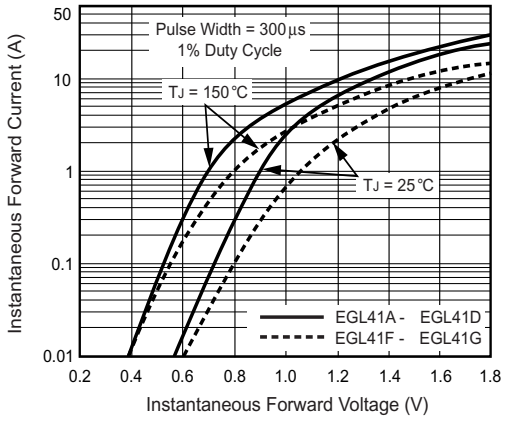


Figure 3. Typical Instantaneous Forward Characteristics

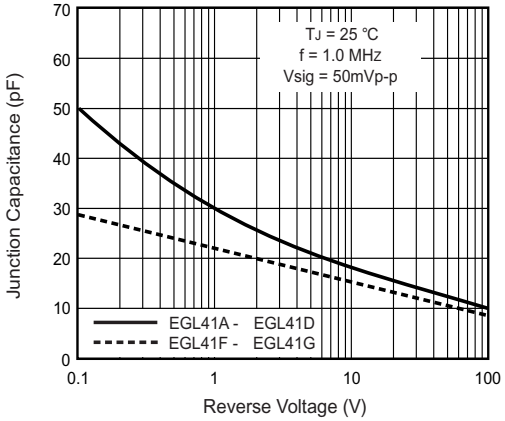


Figure 5. Typical Junction Capacitance

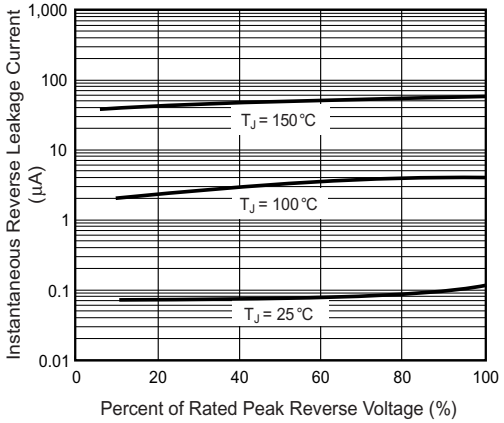


Figure 4. Typical Reverse Leakage Characteristics

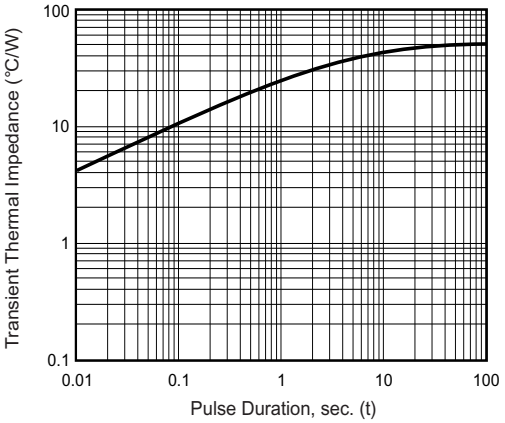
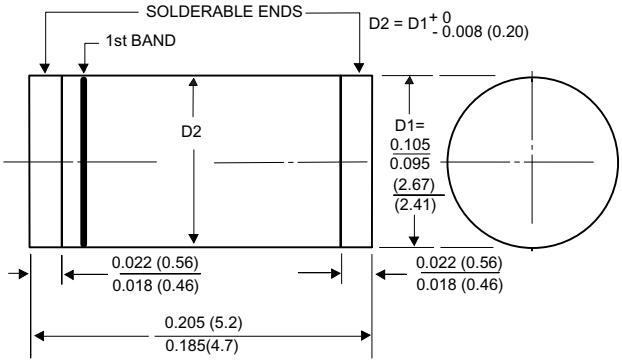


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)

DO-213AB (GL41)



1st band denotes type and positive end (cathode)

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