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BYM12-xxx, EGL41x

Vishay General Semiconductor

Surface Mount Glass Passivated Ultrafast Rectifier

SUPERRECTIFIER®



DO-213AB (GL41)

FEATURES

- Superrectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
- 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: DO-213AB, 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 - 1st band denotes device type and 2nd band denotes repetitive peak reverse voltage rating

PRIMARY 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
Package	DO-213AB (GL41)
Diode variations	Single die

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)								UNIT
PARAMETER	SYMBOL	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	
FAST EFFICIENT DEVICE: 1 ST BAND IS GREEN		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Polarity color bands (2 nd 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



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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	UNIT
			EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Max. instantaneous forward voltage	1.0 A	V_F (1)			1.0		1.25		V
Max. DC reverse current at rated DC blocking voltage	$T_A = 25^\circ\text{C}$	I_R (1)			5.0				μA
	$T_A = 125^\circ\text{C}$				50				
Max. reverse recovery time	$I_F = 0.5 \text{ A}$, $I_R = 1.0 \text{ A}$, $I_{rr} = 0.25 \text{ A}$	t_{rr}			50				ns
Typical junction capacitance	4.0 V, 1 MHz	C_J			20		14		pF

Note

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

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)								
PARAMETER	SYMBOL	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	UNIT
		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Maximum thermal resistance	R_{0JA} (1)			60				$^\circ\text{C}/\text{W}$
	R_{0JT} (2)			30				

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
EGL41D-E3/96	0.114	96	1500	7" diameter plastic tape and reel
EGL41D-E3/97	0.114	97	5000	13" diameter plastic tape and reel
EGL41DHE3/96 (1)	0.114	96	1500	7" diameter plastic tape and reel
EGL41DHE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

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

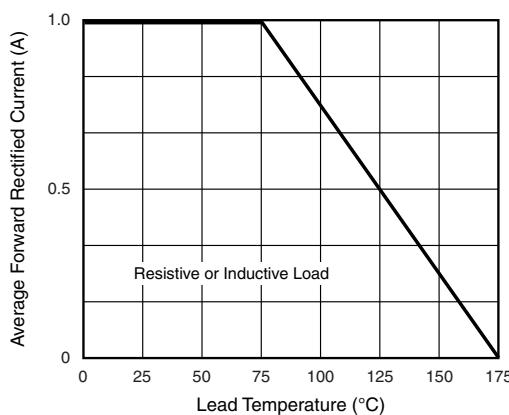


Fig. 1 - Maximum Forward Current Derating Curve

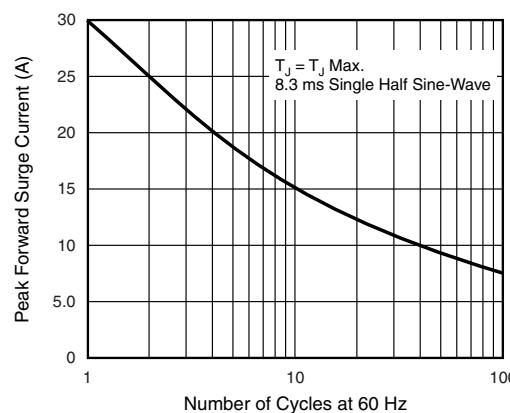


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

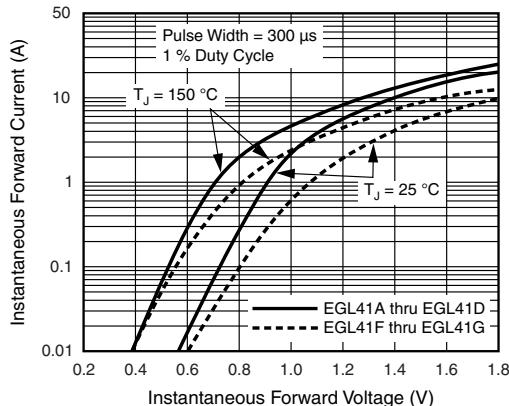


Fig. 3 - Typical Instantaneous Forward Characteristics

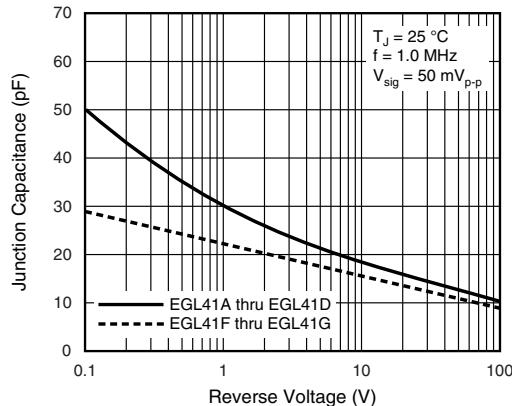


Fig. 5 - Typical Junction Capacitance

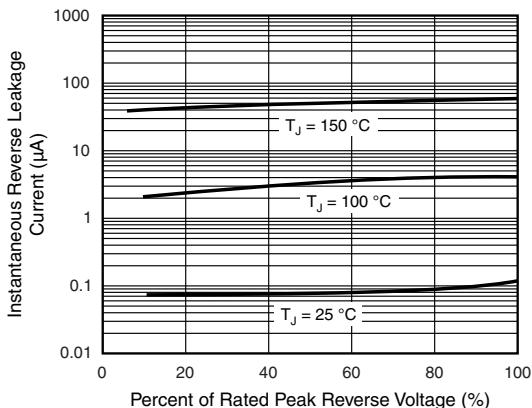


Fig. 4 - Typical Reverse Leakage Characteristics

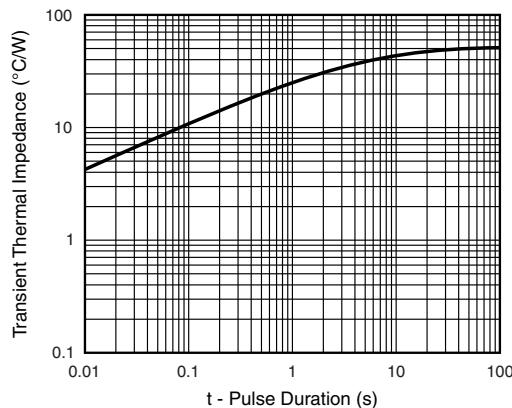
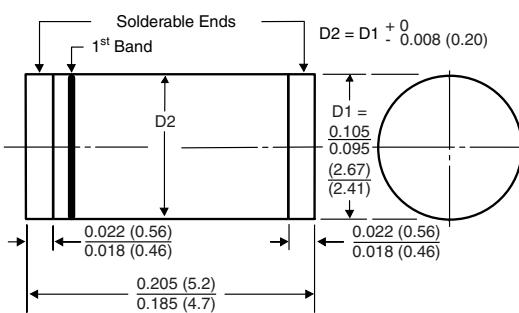


Fig. 6 - Typical Transient Thermal Impedance

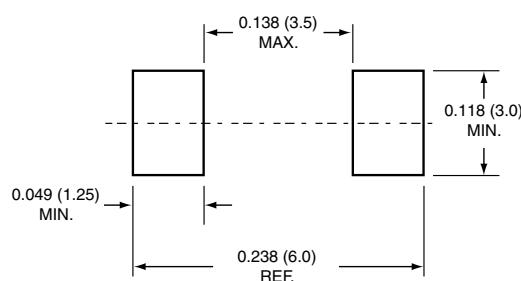
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AB (GL41)



1st Band Denotes Type and Positive End (Cathode)

Mounting Pad Layout





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