

# Vishay General Semiconductor

## **Surface Mount Glass Passivated Ultrafast Rectifier**

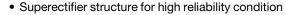
### SUPERECTIFIER®



DO-213AB (GL41)

PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	1.0 A					
$V_{RRM}$	50 V to 400 V					
I <sub>FSM</sub>	30 A					
t <sub>rr</sub>	50 ns					
$V_{F}$	1.0 V, 1.25 V					
T <sub>J</sub> max.	175 °C					
Package	DO-213AB (GL41)					
Diode variations	Single die					

#### **FEATURES**





RoHS

- · 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.vishav.com/doc?99912

## 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 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	
FAST EFFICIENT DEVICE: 1 <sup>ST</sup> BAND IS GREEN		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	UNIT
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	V
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>	1.0						Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30						А
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 CONDITIONS	TEST	SYMBOL	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	UNIT	
	CONDITIONS		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	UNII	
Max. instantaneous forward voltage	1.0 A	V <sub>F</sub> <sup>(1)</sup>		1.0 1.25				25	٧	
Max. DC reverse	T <sub>A</sub> = 25 °C	. (1)	5.0							
current at rated DC blocking voltage	T <sub>A</sub> = 125 °C	I <sub>R</sub> <sup>(1)</sup>	50						μΑ	
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	20 14			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	BYM12-50	BYM12-100	BYM12-150	BYM12-200	BYM12-300	BYM12-400	UNIT
		EGL41A	EGL41B	EGL41C	EGL41D	EGL41F	EGL41G	
Maximum thermal resistance	R <sub>0JA</sub> (1)	60						°C/W
Maximum thermal resistance	R <sub>0</sub> JT (2)		30					C/VV

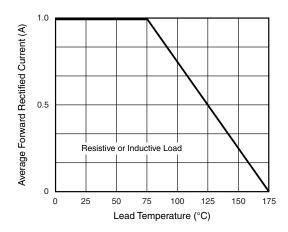
#### **Notes**

- (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

## RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)





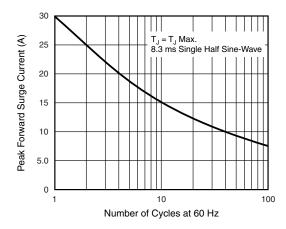


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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



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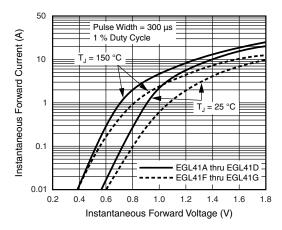


Fig. 3 - Typical Instantaneous Forward Characteristics

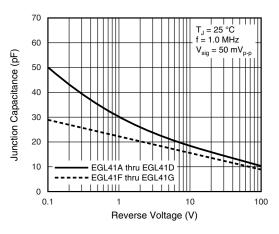


Fig. 5 - Typical Junction Capacitance

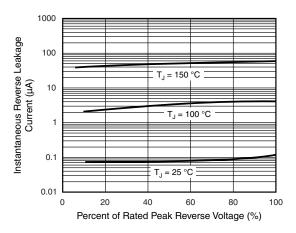


Fig. 4 - Typical Reverse Leakage Characteristics

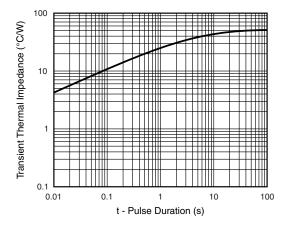
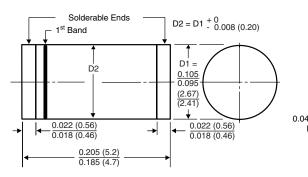


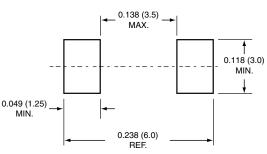
Fig. 6 - Typical Transient Thermal Impedance

# PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-213AB (GL41)



## 1st Band Denotes Type and Positive End (Cathode)

## **Mounting Pad Layout**





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