



## Surface Mount Glass Passivated Junction Rectifier

**SUPERRECTIFIER®**



**DO-213AB**

Patented\*

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

### FEATURES

- Superrectifier structure for high reliability condition
- Patented glass-plastic encapsulation technique
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, 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-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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	BYM-50-1000 GL41A-Y 50 V to 1000 V 50 V to 1600 V
$I_{FSM}$	30 A
$I_R$	10 $\mu$ A
$E_{AS}$	5 mJ
$V_F$	1.1 V, 1.2 V
$T_J$ max.	175 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)											
PARAMETER	SYMBOL	BYM 10-50	BYM 10-100	BYM 10-200	BYM 10-400	BYM 10-600	BYM 10-800	BYM 10-1000			UNIT
STANDARD RECOVERY DEVICE: 1ST BAND IS WHITE		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
Polarity color bands (2nd band)		Gray	Red	Orange	Yellow	Green	Blue	Violet	White	Brown	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	1300	1600	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	910	1120	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	1300	1600	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	1.0									A

# BYM10-50 thru BYM10-1000, GL41A thru GL41Y



Vishay General Semiconductor

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER	SYMBOL	BYM 10-50	BYM 10-100	BYM 10-200	BYM 10-400	BYM 10-600	BYM 10-800	BYM 10-1000			UNIT
STANDARD RECOVERY DEVICE: 1ST BAND IS WHITE		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30									A
Maximum full load reverse current full cycle average at T <sub>A</sub> = 75 °C	I <sub>R(AV)</sub>	30									μA
Non-repetitive peak reverse avalanche energy at T <sub>J</sub> = 25 °C, I <sub>AS</sub> = 1 A, L = 10 mH	E <sub>AS</sub>	5						-			μA
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175									°C

ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)													
PARAMETER	TEST CONDITIONS	SYMBOL	BYM 10-50	BYM 10-100	BYM 10-200	BYM 10-400	BYM 10-600	BYM 10-800	BYM 10-1000			UNIT	
			GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y		
Maximum instantaneous forward voltage	1.0 A	V <sub>F</sub>	1.1					1.2				V	
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>							10	50			μA
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>							8.0				pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)												
PARAMETER	SYMBOL	BYM 10-50	BYM 10-100	BYM 10-200	BYM 10-400	BYM 10-600	BYM 10-800	BYM 10-			UNIT	
		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y		
Typical thermal resistance	R <sub>θJA</sub> R <sub>θJT</sub>							75 <sup>(1)</sup> 30 <sup>(2)</sup>				°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)	REFERRED PACKAGE	BASE QUANTITY	DELIVERY MODE
BYM10-600-E3/96	0.114	96	1500	7" diameter plastic tape and reel
BYM10-600-E3/97	0.114	97	5000	13" diameter plastic tape and reel
GL41J-E3/96	0.114	96	1500	7" diameter plastic tape and reel
GL41J-E3/97	0.114	97	5000	13" diameter plastic tape and reel
BYM10-600HE3/96 <sup>(1)</sup>	0.114	96	1500	7" diameter plastic tape and reel
BYM10-600HE3/97 <sup>(1)</sup>	0.114	97	5000	13" diameter plastic tape and reel
GL41JHE3/96 <sup>(1)</sup>	0.114	96	1500	7" diameter plastic tape and reel
GL41JHE3/97 <sup>(1)</sup>	0.114	97	5000	13" diameter plastic tape and reel

**Note:**

(1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

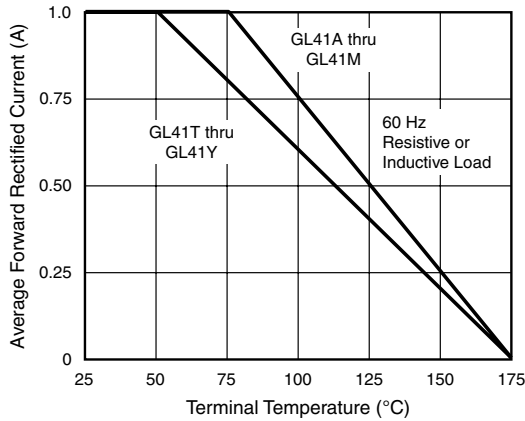


Figure 1. Forward Current Derating Curve

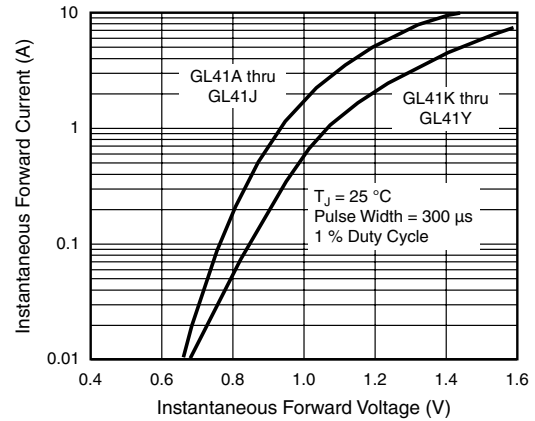


Figure 3. Typical Instantaneous Forward Characteristics

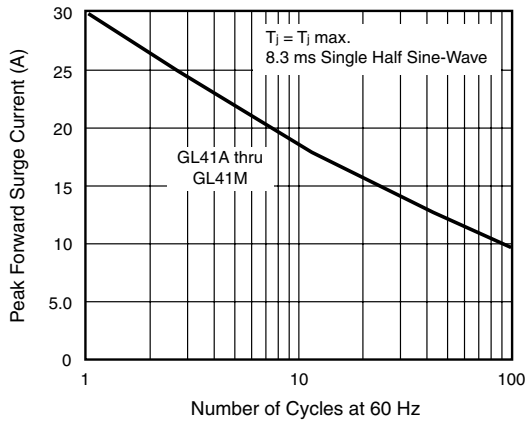


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

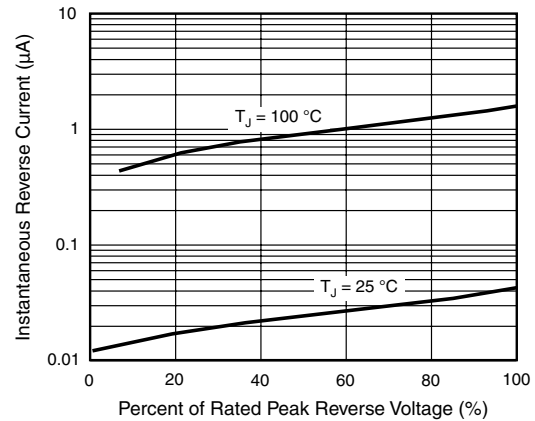


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

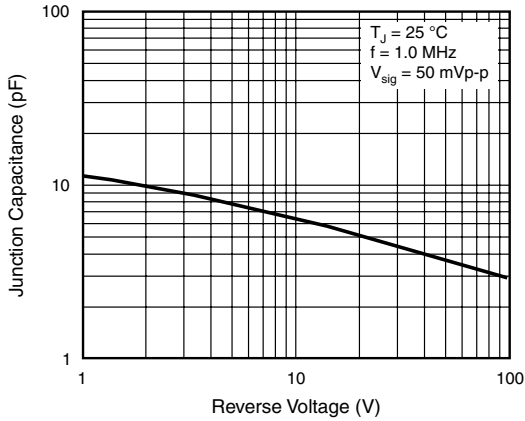


Figure 5. Typical Junction Capacitance

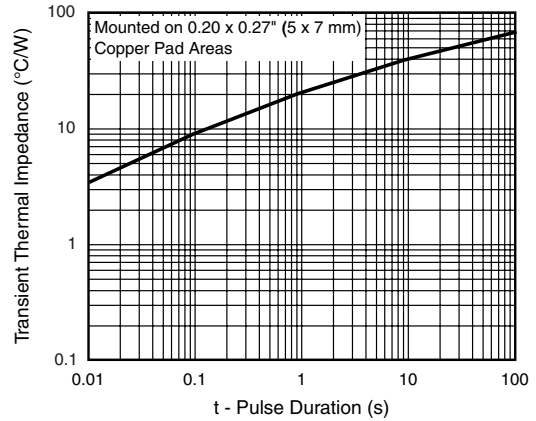
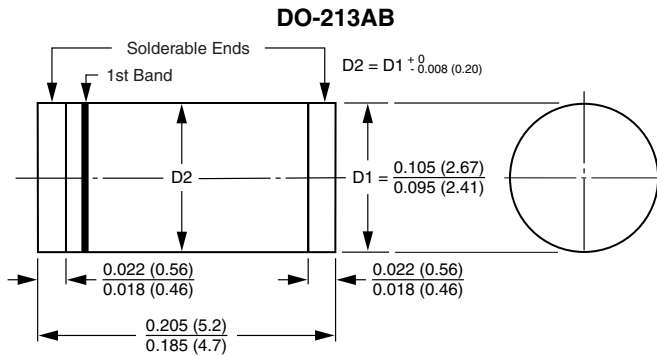


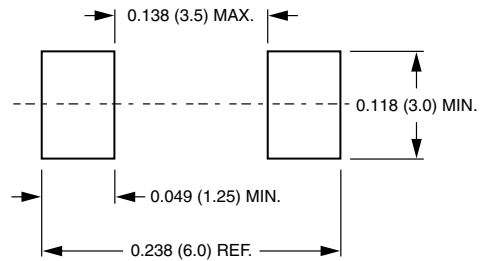
Figure 6. Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



1st band denotes type and positive end (cathode)

## Mounting Pad Layout





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