

## Surface Mount Glass Passivated Junction Rectifier

**SUPERECTIFIER®**



**DO-213AB**

### FEATURES

- Superectifier structure for high reliability condition
- 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
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to 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  
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 - 1<sup>st</sup> band denotes device type and 2<sup>nd</sup> band denotes repetitive peak reverse voltage rating

PRIMARY CHARACTERISTICS		
$I_{F(AV)}$		1.0 A
$V_{RRM}$	BYM-50-1000	50 V to 1000 V
	GL41A-Y	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: 1 <sup>ST</sup> BAND IS WHITE		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
Polarity color bands (2 <sup>nd</sup> 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
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30									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: 1 <sup>ST</sup> BAND IS WHITE		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
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							-		mJ
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	I <sub>R</sub>	10									μA
	T <sub>A</sub> = 125 °C		50									
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 10-1000			UNIT
		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y	
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	75									°C/W
	R <sub>θJT</sub> <sup>(2)</sup>	30									

## Notes

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

<sup>(2)</sup> 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
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**

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

## RATINGS AND CHARACTERISTICS CURVES

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

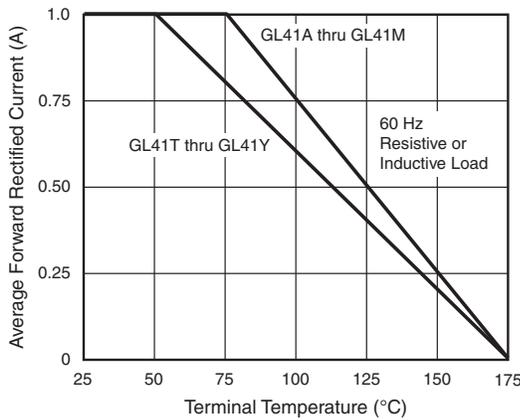


Fig. 1 - Forward Current Derating Curve

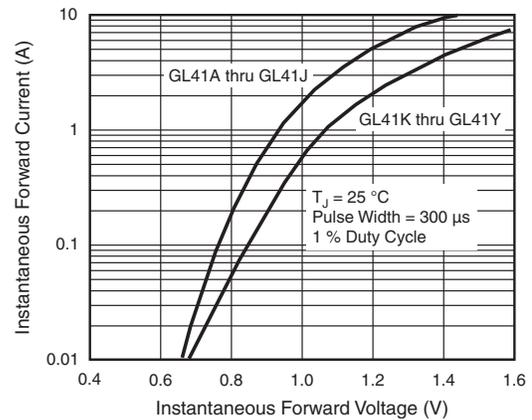


Fig. 3 - Typical Instantaneous Forward Characteristics

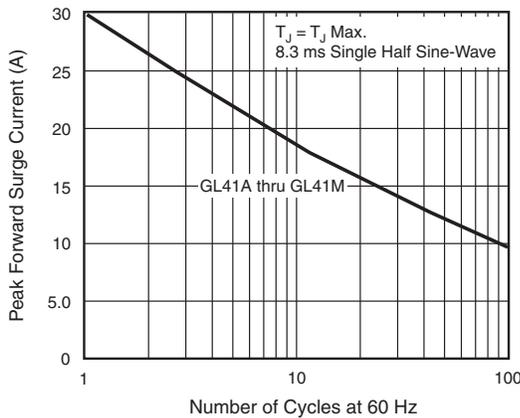


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

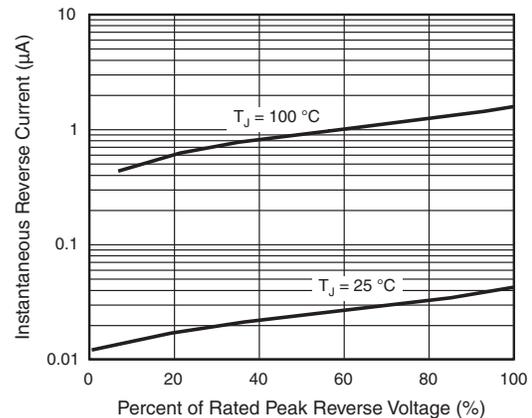


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current

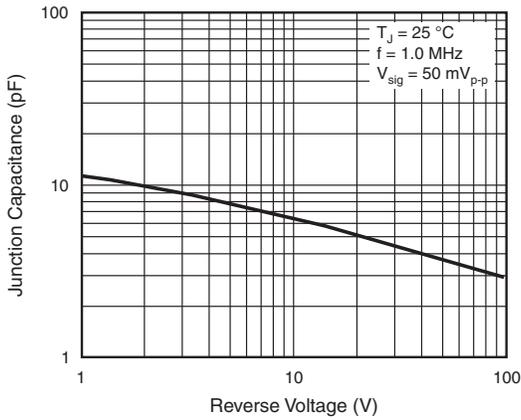


Fig. 5 - Typical Junction Capacitance

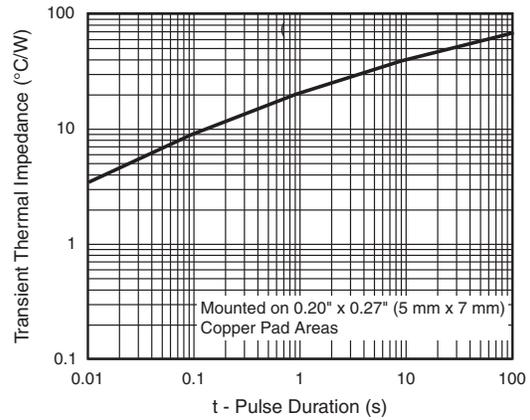
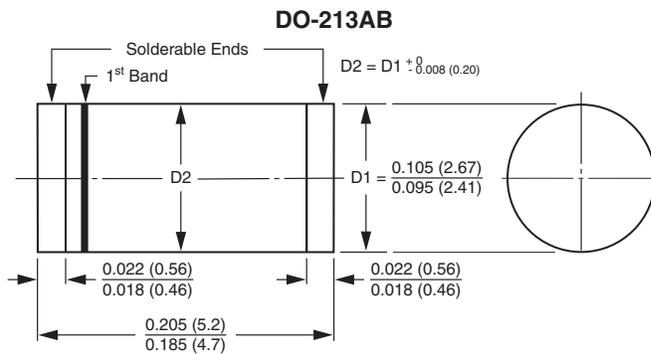


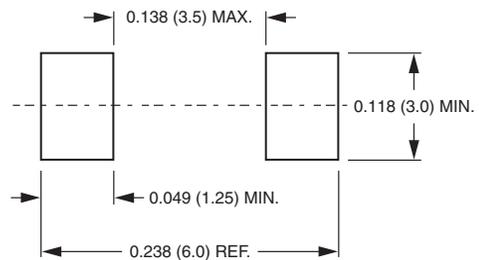
Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



1<sup>st</sup> band denotes type and positive end (cathode)

## Mounting Pad Layout





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