

# Surface Mount Glass Passivated Junction Rectifier

**SUPERECTIFIER®**

**DO-213AB**

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
$V_{RRM}$ (BYM10-xxx, GL41x)	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
Package	DO-213AB
Diode variations	Single die

**FEATURES**

- Superectifier structure for high reliability condition
- Ideal for automated placement
- Low forward voltage drop
- Low leakage current
- 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](http://www.vishay.com/doc?99912)


**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

MAXIMUM RATINGS ( $T_A = 25$ °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	
Polarity color bands (2 <sup>nd</sup> band)		Gray	Red	Orange	Yellow	Green	Blue	Violet	White	Brown	
Max. repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	1300	1600	V
Max. RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	910	1120	V
Max. DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	1300	1600	V
Max. average forward rectified current (fig. 1)	$I_{F(AV)}$	1.0									A
Peak forward surge current 8.3 ms single half sine-wave	$I_{FSM}$	30									A
Max. full load reverse current full cycle average at $T_A = 75$ °C	$I_{R(AV)}$	30									$\mu$ A
Non-repetitive peak reverse avalanche energy at $T_J = 25$ °C, $I_{AS} = 1$ A, $L = 10$ mH	$E_{AS}$	5						-			mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	- 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		
Max. instantaneous forward voltage	1.0 A	V <sub>F</sub>	1.1					1.2					V
Max. 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**

- (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
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) AEC-Q101 qualified



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

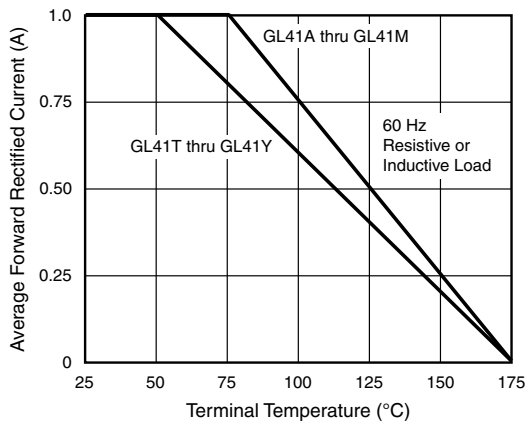


Fig. 1 - Forward Current Derating Curve

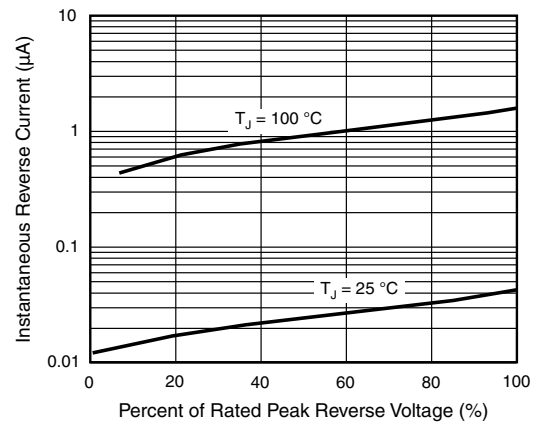


Fig. 4 - Typical Reverse Characteristics

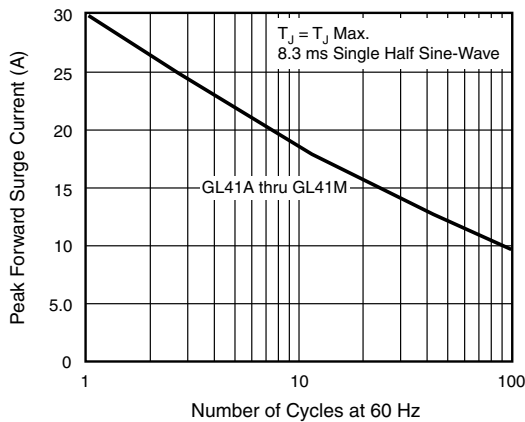


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

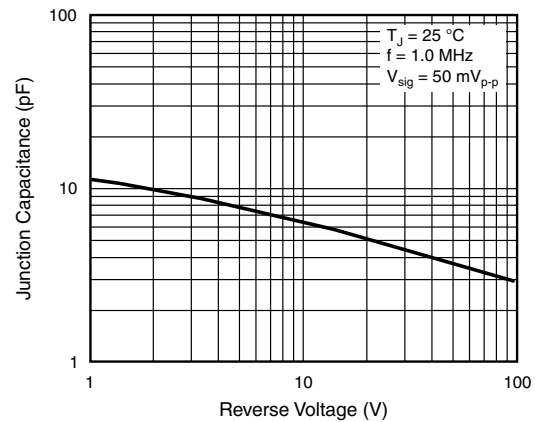


Fig. 5 - Typical Junction Capacitance

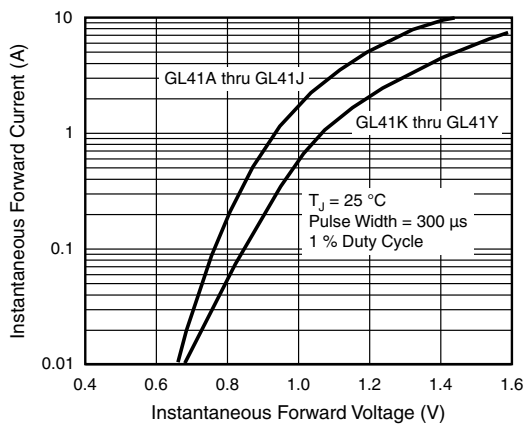


Fig. 3 - Typical Instantaneous Forward Characteristics

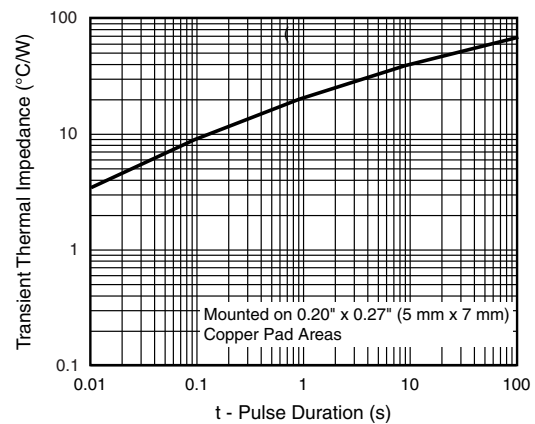
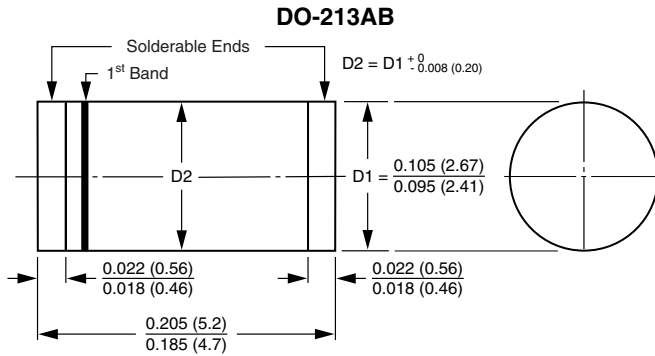


Fig. 6 - Typical Transient Thermal Impedance

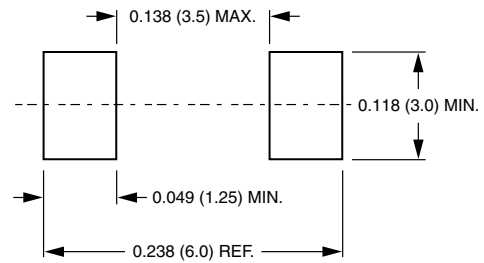


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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

**Mounting Pad Layout**





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