

## 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
- 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

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	$I_{FSM}$	30									A
Maximum full load reverse current full cycle average at $T_A = 75\text{ °C}$	$I_{R(AV)}$	30									$\mu$ A
Non-repetitive peak reverse avalanche energy at $T_J = 25\text{ °C}$ , $I_{AS} = 1\text{ A}$ , $L = 10\text{ mH}$	$E_{AS}$	5							-		mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175									°C



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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	$V_F$	1.1					1.2				V	
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	10									$\mu\text{A}$	
	$T_A = 125\text{ }^\circ\text{C}$		50										
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	8.0										pF

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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	
		GL41A	GL41B	GL41D	GL41G	GL41J	GL41K	GL41M	GL41T	GL41Y		
Typical thermal resistance	$R_{\theta JA}^{(1)}$	75									$^\circ\text{C/W}$	
	$R_{\theta JT}^{(2)}$	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

<b>ORDERING INFORMATION</b> (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)

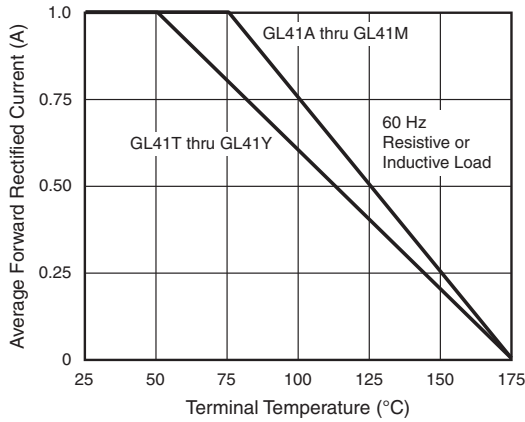


Fig. 1 - Forward Current Derating Curve

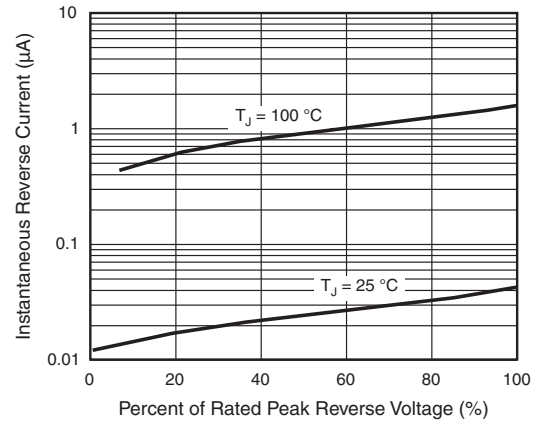


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current

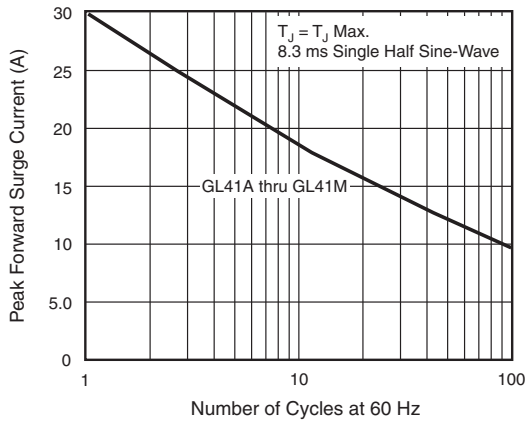


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

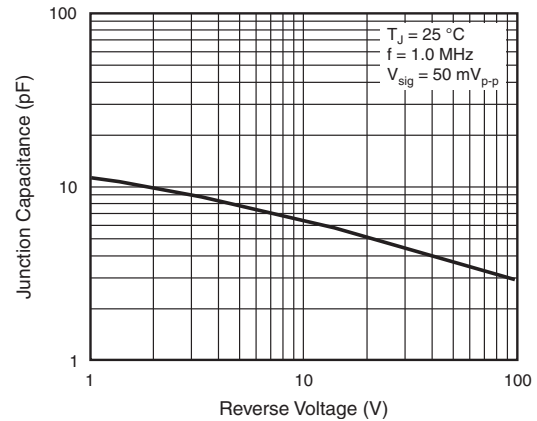


Fig. 5 - Typical Junction Capacitance

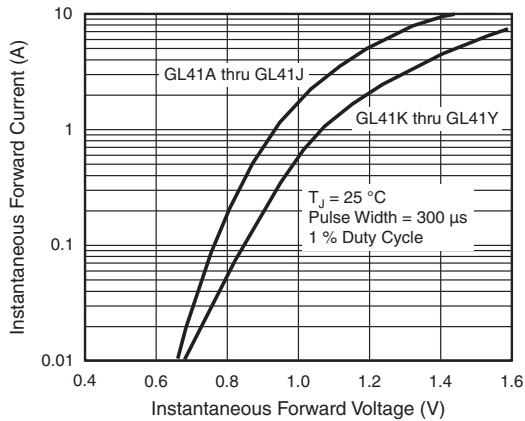


Fig. 3 - Typical Instantaneous Forward Characteristics

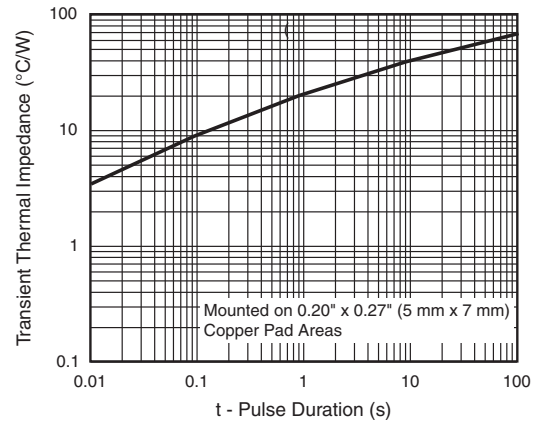
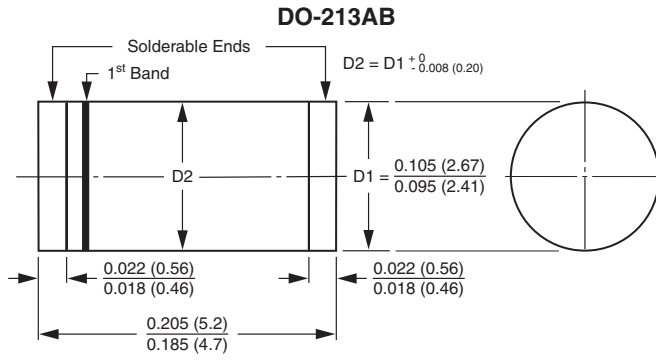


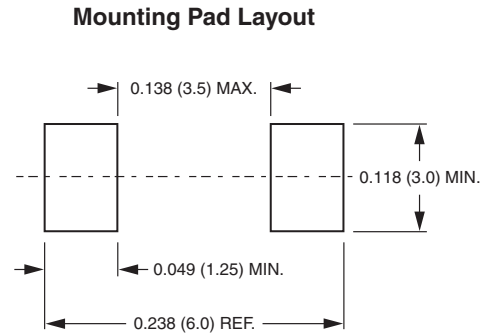
Fig. 6 - Typical Transient Thermal Impedance



### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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





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