



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

- Superelectifier 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-020C, LF max peak of 250 °C
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and free-wheeling 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-002B and JESD22-B102D
E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

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 μ A
E_{AS}		5 mJ
V_F		1.1 V, 1.2 V
$T_j \text{ max.}$		175 °C

MAXIMUM RATINGS ($T_A = 25 \text{ }^\circ\text{C}$ 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	
STANDARD RECOVERY DEVICE: 1ST BAND IS WHITE											
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 (see Fig. 1)	$I_{F(AV)}$	1.0									A

BYM10-50 thru BYM10-1000, GL41A thru GL41Y



Vishay General Semiconductor

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

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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	at 1.0 A	V_F	1.1					1.2				V	
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	I_R	10 50										μA
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	8.0										pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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	$R_{\theta JA}$ $R_{\theta JT}$	75 ⁽¹⁾ 30 ⁽²⁾										$^\circ\text{C/W}$

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 & Reel
BYM10-600-E3/97	0.114	97	5000	13" Diameter Plastic Tape & Reel
GL41J-E3/96	0.114	96	1500	7" Diameter Plastic Tape & Reel
GL41J-E3/97	0.114	97	5000	13" Diameter Plastic Tape & Reel
BYM10-600HE3/96 ⁽¹⁾	0.114	96	1500	7" Diameter Plastic Tape & Reel
BYM10-600HE3/97 ⁽¹⁾	0.114	97	5000	13" Diameter Plastic Tape & Reel
GL41JHE3/96 ⁽¹⁾	0.114	96	1500	7" Diameter Plastic Tape & Reel
GL41JHE3/97 ⁽¹⁾	0.114	97	5000	13" Diameter Plastic Tape & Reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

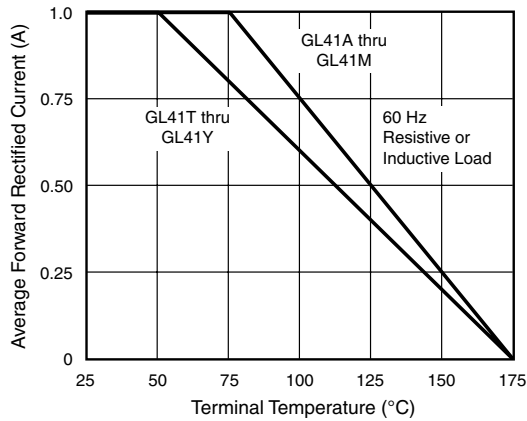


Figure 1. Forward Current Derating Curve

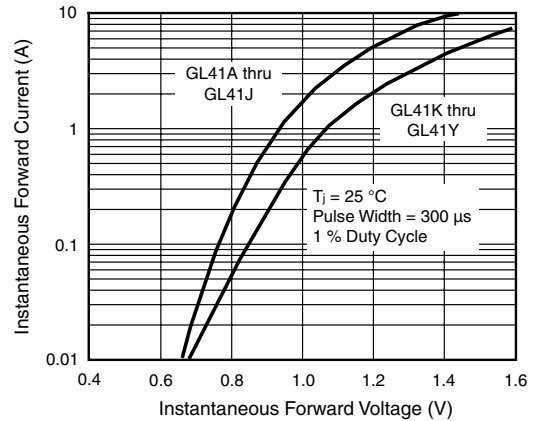


Figure 3. Typical Instantaneous Forward Characteristics

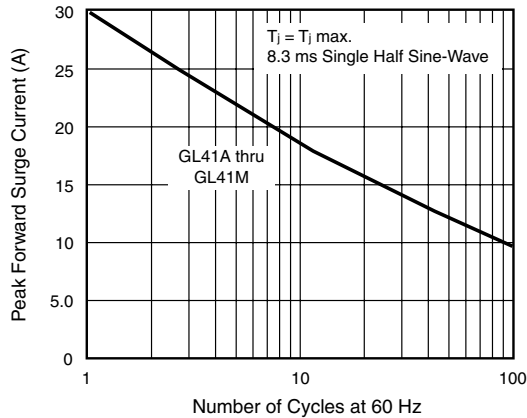


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

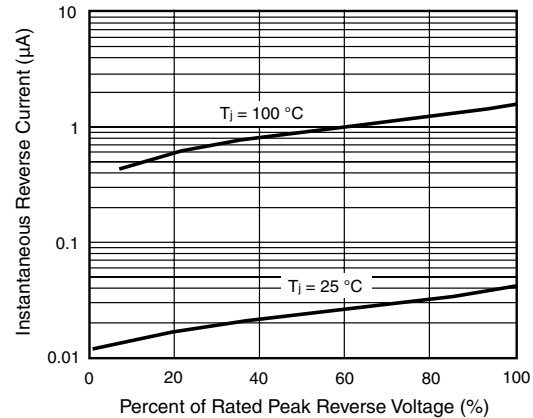


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current

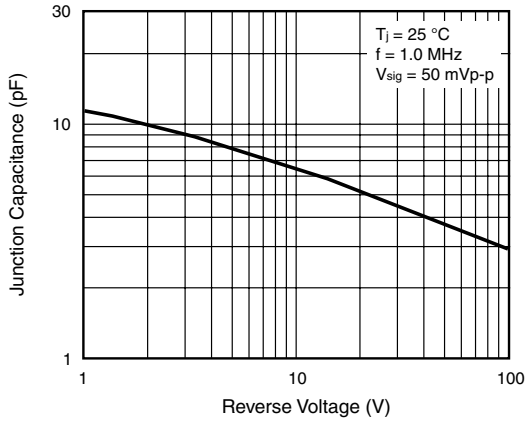


Figure 5. Typical Junction Capacitance

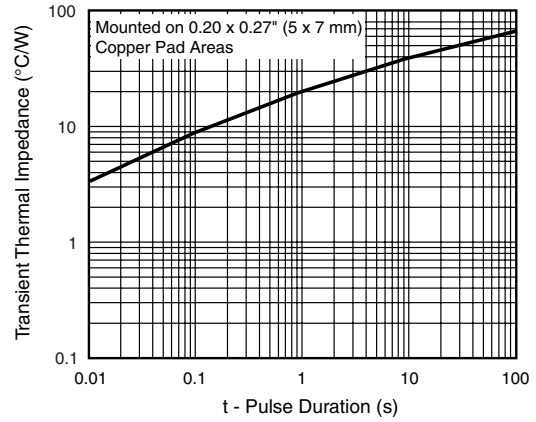
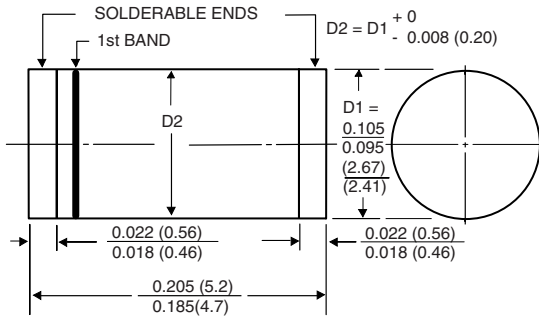


Figure 6. Typical Transient Thermal Impedance

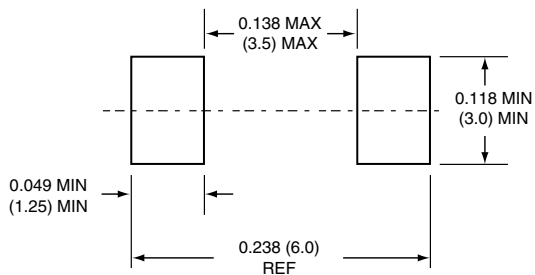
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AB



1st band denotes type and positive end (cathode)

Mounting Pad Layout





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