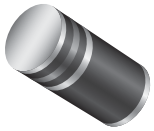
Surface Mount Glass Passivated Junction Rectifier

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 - 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	50 V to 1000 V
	GL41A-Y	50 V to 1600 V
I_{FSM}		30 A
I_R		10 µA
E_{AS}		5 mJ
V_F		1.1 V, 1.2 V
T_J max.		175 °C

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: 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
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30									A

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: 1ST BAND IS WHITE		**GL41A**	**GL41B**	**GL41D**	**GL41G**	**GL41J**	**GL41K**	**GL41M**	**GL41T**	**GL41Y**	
Maximum full load reverse current full cycle average at T_A = 75 °C	$I_{R(AV)}$	30									µA
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_A = 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_F	1.1					1.2				V
Maximum DC reverse current at rated DC blocking voltage	T_A = 25 °C	I_R	10									µA
	T_A = 125 °C		50									
Typical junction capacitance	4.0 V, 1 MHz	C_J	8.0									pF

THERMAL CHARACTERISTICS (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**
		GL41A	**GL41B**	**GL41D**	**GL41G**	**GL41J**	**GL41K**	**GL41M**	**GL41T**	**GL41Y**	
Typical thermal resistance	$R_{\theta JA}$ (1)	75									°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

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Document Number: 88546
Revision: 15-Mar-11

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 (1)	0.114	96	1500	7" diameter plastic tape and reel
BYM10-600HE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel
GL41JHE3/96 (1)	0.114	96	1500	7" diameter plastic tape and reel
GL41JHE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

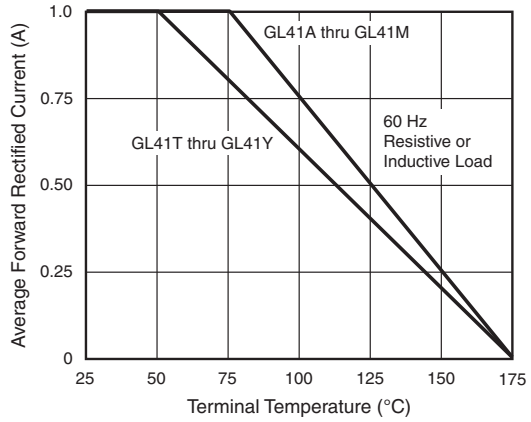


Fig. 1 - Forward Current Derating Curve

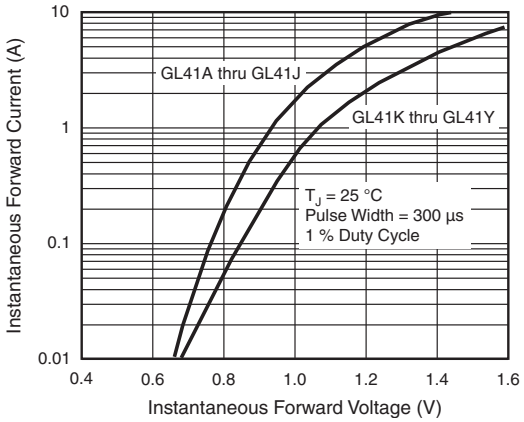


Fig. 3 - Typical Instantaneous Forward Characteristics

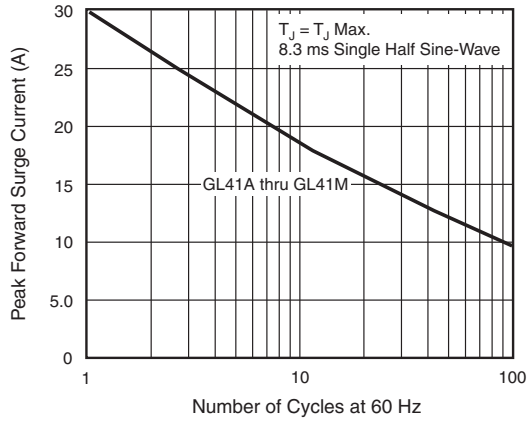


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

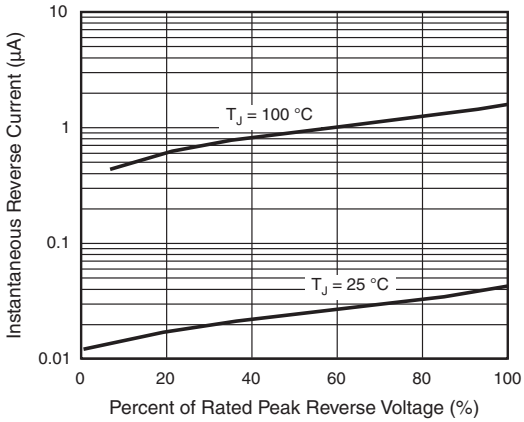


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

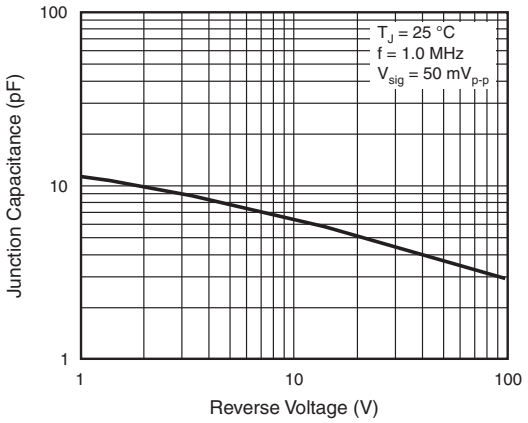


Fig. 5 - Typical Junction Capacitance

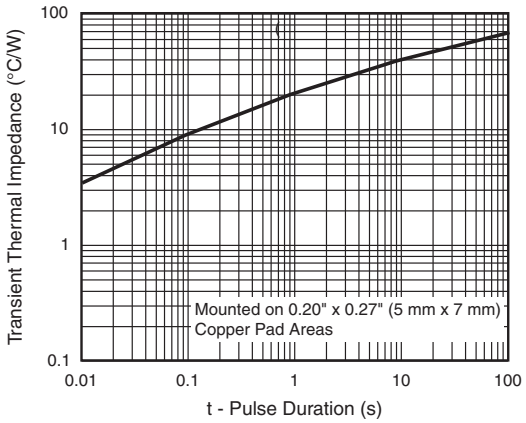
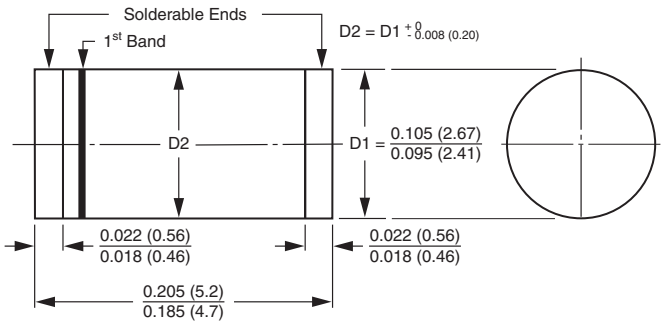


Fig. 6 - Typical Transient Thermal Impedance

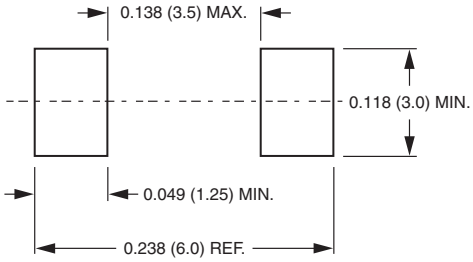
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-213AB



1st band denotes type and positive end (cathode)

Mounting Pad Layout



For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Document Number: 88546
Revision: 15-Mar-11

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.