

# Surface-Mount Glass Passivated Junction Rectifier

### Superectifier®



MELF (DO-213AB)

PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub>	1.0 A							
V <sub>RRM</sub> (BYM10-xxx, GL41x)	50 V to 1000 V, 50 V to 1600 V							
I <sub>FSM</sub>	30 A							
I <sub>R</sub>	10 μΑ							
E <sub>AS</sub>	5 mJ							
V <sub>F</sub>	1.1 V, 1.2 V							
T <sub>J</sub> max.	175 °C							
Package	MELF (DO-213AB)							
Circuit configuration	Single							

#### **FEATURES**

• Superectifier structure for high reliability condition



- · Ideal for automated placement
- Low forward voltage drop
- Low leakage current

High forward surge capability

RoHS

- Meets MSL level 1, per J-STD-020, LF maximum peak
- of 250 °C

   Material categorization: for definitions of compliance
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### **TYPICAL APPLICATIONS**

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

#### **MECHANICAL DATA**

**Case:** MELF (DO-213AB), molded epoxy over glass body Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A 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 <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	UNIT
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	٧
Max. RMS voltage	V <sub>RMS</sub>	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 <sub>F(AV)</sub>		1.0						Α		
Peak forward surge current 8.3 ms single half sine-wave	I <sub>FSM</sub>		30							Α	
Max. full load reverse current full cycle average at T <sub>A</sub> = 75 °C	I <sub>R(AV)</sub>		30							μΑ	
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 +17	<b>'</b> 5				°C



<b>ELECTRICAL CHARACTERISTICS</b> (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	T <sub>A</sub> = 25 °C			10									
reverse current at rated DC blocking voltage	T <sub>A</sub> = 125 °C	I <sub>R</sub>		50							μA		
Typical junction capacitance	4.0 V, 1 MHz	CJ		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>0JA</sub> (1)		75								°C/W
Typical thermal resistance	R <sub>0JT</sub> (2)					30					C/VV

#### Notes

<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						

<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

## RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

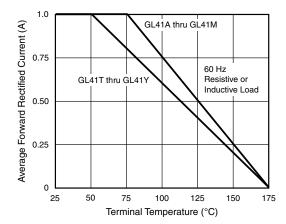


Fig. 1 - Forward Current Derating Curve

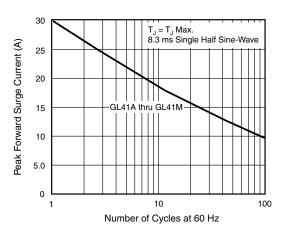


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

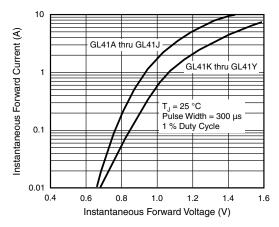


Fig. 3 - Typical Instantaneous Forward Characteristics

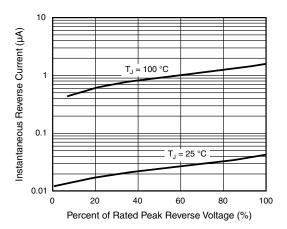


Fig. 4 - Typical Reverse Characteristics

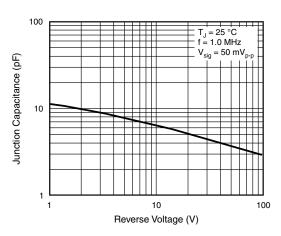


Fig. 5 - Typical Junction Capacitance

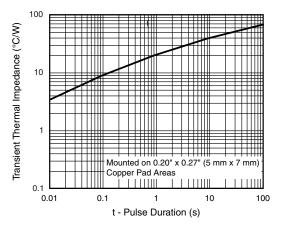


Fig. 6 - Typical Transient Thermal Impedance

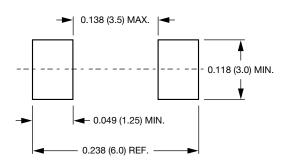


## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

# Solderable Ends D2 = D1 + 0.008 (0.20) D1 = 0.105 (2.67) D1 = 0.022 (0.56) 0.018 (0.46) 0.205 (5.2) 0.185 (4.7)

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

## **Mounting Pad Layout**





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