



## Surface Mount Glass Passivated Junction Fast Switching Rectifier



DO-213AB

Patented\*

\*Glass-plastic encapsulation is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

### FEATURES

- Superrectifier structure for high reliability condition
- Patented glass-plastic encapsulation technique
- Ideal for automated placement
- Fast switching for high efficiency
- 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS COMPLIANT

### TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and freewheeling 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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), 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
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	30 A
$t_{rr}$	150 ns, 250 ns, 500 ns
$V_F$	1.3 V
$T_J \text{ max.}$	175 °C

MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	BYM 11-50	BYM 11-100	BYM 11-200	BYM 11-400	BYM 11-600	BYM 11-800	BYM 11-1000	UNIT
		RGL41A	RGL41B	RGL41D	RGL41G	RGL41J	RGL41K	RGL41M	
FAST SWITCHING TIME DEVICE: 1ST BAND IS RED									
Polarity color bands (2nd band)		Gray	Red	Orange	Yellow	Green	Blue	Violet	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_J = 55\text{ °C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	30							A
Maximum full load reverse current, full cycle average at $T_A = 55\text{ °C}$	$I_{R(AV)}$	50							$\mu\text{A}$
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 11-50	BYM 11-100	BYM 11-200	BYM 11-400	BYM 11-600	BYM 11-800	BYM 11-1000	UNIT
Maximum instantaneous forward voltage	1.0 A	$V_F$	1.3							V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	$I_R$	5.0 50							$\mu\text{A}$
Maximum reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$	$t_{rr}$	150				250	500		ns
Typical junction capacitance	4.0 V, 1 MHz	$C_J$	15							pF

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	BYM 11-50	BYM 11-100	BYM 11-200	BYM 11-400	BYM 11-600	BYM 11-800	BYM 11-1000	UNIT
Maximum thermal resistance	$R_{\theta JA}$ $R_{\theta JT}$	75 <sup>(1)</sup> 30 <sup>(2)</sup>							$^\circ\text{C/W}$

**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

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	REFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RGL41J-E3/96	0.114	96	1500	7" diameter plastic tape and reel
RGL41J-E3/97	0.114	97	5000	13" diameter plastic tape and reel
BYM11-600-E3/96	0.114	96	1500	7" diameter plastic tape and reel
BYM11-600-E3/97	0.114	97	5000	13" diameter plastic tape and reel
RGL41JHE3/96 <sup>(1)</sup>	0.114	96	1500	7" diameter plastic tape and reel
RGL41JHE3/97 <sup>(1)</sup>	0.114	97	5000	13" diameter plastic tape and reel
BYM11-600HE3/96 <sup>(1)</sup>	0.114	96	1500	7" diameter plastic tape and reel
BYM11-600HE3/97 <sup>(1)</sup>	0.114	97	5000	13" diameter plastic tape and reel

**Note:**

- (1) Automotive grade AEC Q101 qualified



## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

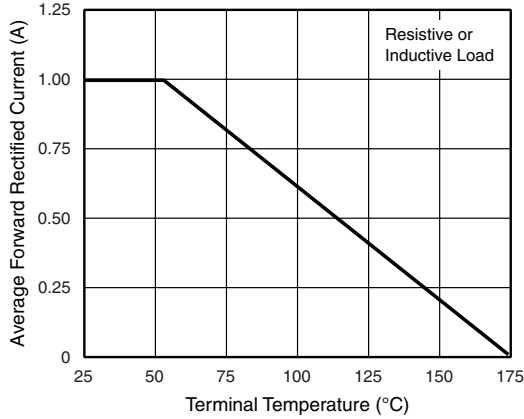


Figure 1. Forward Current Derating Curve

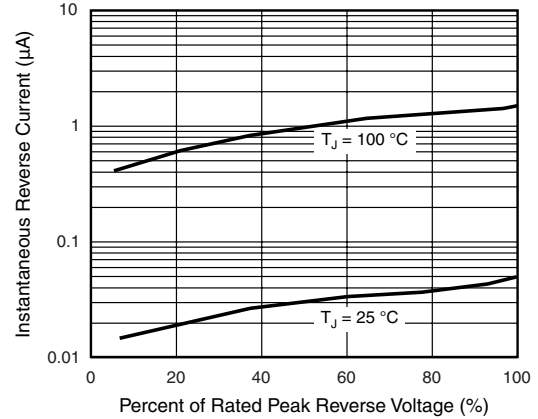


Figure 4. Typical Reverse Characteristics

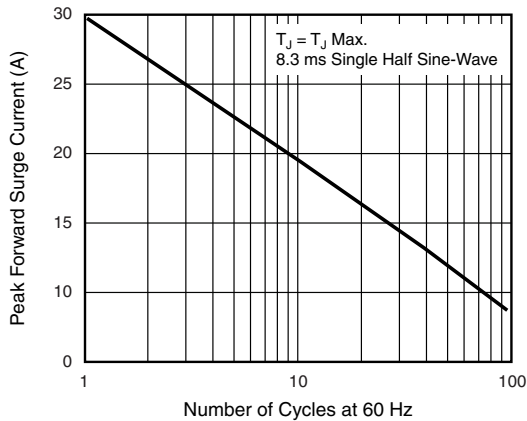


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

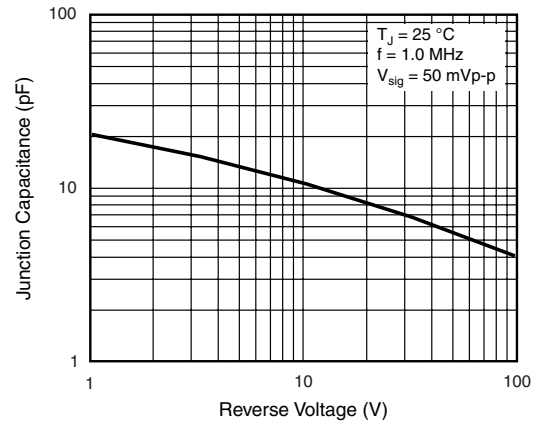


Figure 5. Typical Junction Capacitance

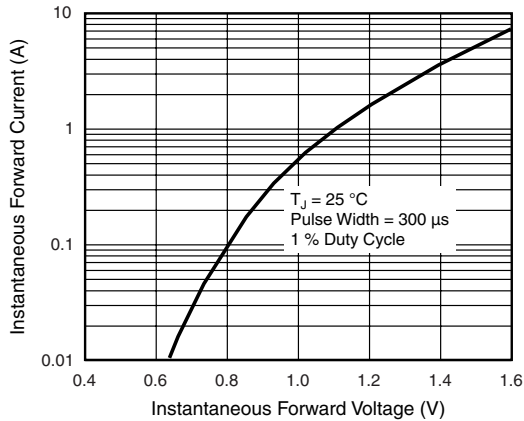


Figure 3. Typical Instantaneous Forward Characteristics

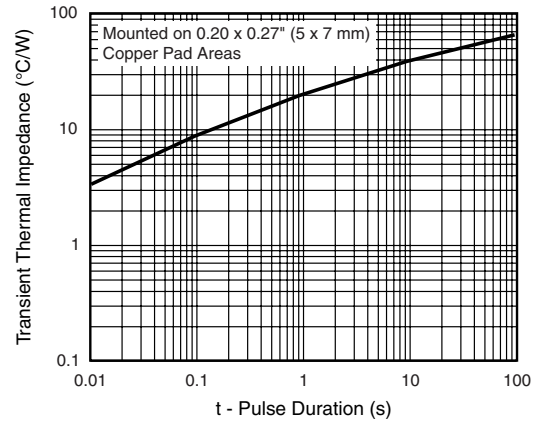
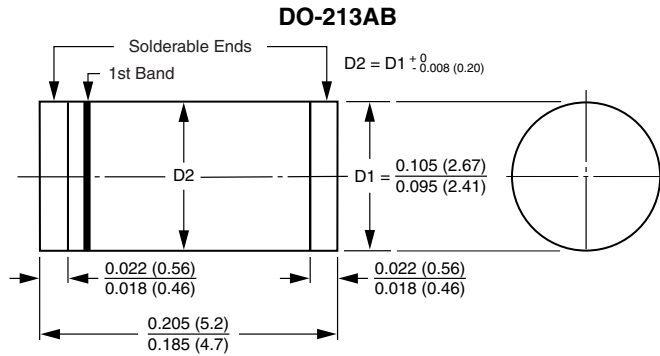


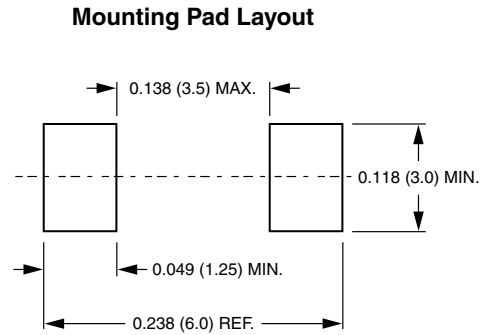
Figure 6. Typical Transient Thermal Impedance



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



1st band denotes type and positive end (cathode)





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