

Vishay General Semiconductor

Surface Mount Glass Passivated Junction Fast Switching Rectifier

SUPERECTIFIER[®]



DO-213AB

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 max.	175 °C							

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.

FEATURES

- Superectifier structure for high reliability condition
- 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 $^{\circ}\mathrm{C}$
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

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

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		
FAST SWITCHING TIME DEVICE: 1 ST BAND IS RED	STNIBOL	RGL41A	RGL41B	RGL41D	RGL41G	RGL41J	RGL41K	RGL41M	UNIT	
Polarity color bands (2 nd 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 $T_T = 55 \ ^\circ C$	I _{F(AV)}	=(AV) 1.0						А		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	I _{FSM} 30						А		
Maximum full load reverse current, full cycle average at $T_A = 55$ °C	I _{R(AV)}	I _{R(AV)} 50						μA		
Operating junction and storage temperature range	T _J , T _{STG}	T _J , T _{STG} - 65 to + 175							°C	

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ROHS COMPLIANT

BYM11-50 thru BYM11-1000, RGL41A thru RGL41M

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ELECTRICAL CHARACTERISTICS (T _A = 25 °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		T _A = 25 °C	1	5.0							
blocking voltage		T _A = 125 °C	I _R	50						μA	
Maximum reverse recovery time	I _F = 0.5 I _{rr} = 0.2	A, I _R = 1.0 A, 5 A	t _{rr}	150 250 500				ns			
Typical junction capacitance	4.0 V, 1	MHz	CJ	15				pF			

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	BYM BYM <th>UNIT</th>					UNIT		
Maximum thermal resistance	R _{0JA} ⁽¹⁾	75							°C/W
$R_{\theta JT}^{(2)}$ 30						0/11			

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

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED 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 (1)	0.114	96	1500	7" diameter plastic tape and reel					
RGL41JHE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel					
BYM11-600HE3/96 (1)	0.114	96	1500	7" diameter plastic tape and reel					
BYM11-600HE3/97 (1)	0.114	97	5000	13" diameter plastic tape and reel					

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

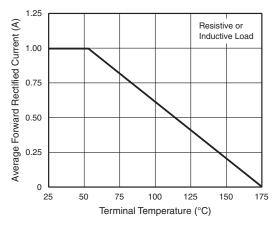


Fig. 1 - Forward Current Derating Curve

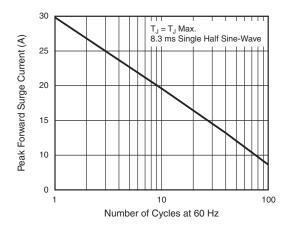
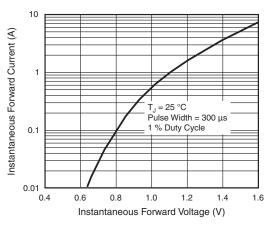
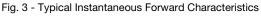


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current





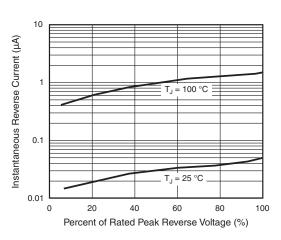


Fig. 4 - Typical Reverse Characteristics

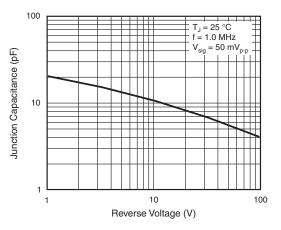
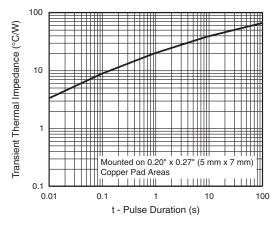


Fig. 5 - Typical Junction Capacitance





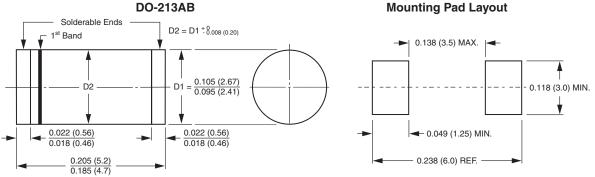
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1st band denotes type and positive end (cathode)

Mounting Pad Layout



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