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Vishay Semiconductor/Diodes Division
BYD13DGP-E3/73

For any questions, you can email us directly:
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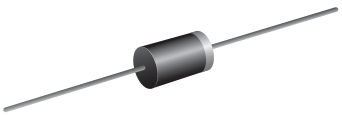
New Product

BYD13DGP thru BYD13MGP

Vishay General Semiconductor

Avalanche Glass Passivated Junction Rectifier

SUPERECTIFIER®



DO-204AL (DO-41)

FEATURES

- Superectifier structure for high reliability condition
- Cavity-free glass-passivated junction
- Avalanche surge capability guaranteed
- Low forward voltage drop
- Low leakage current, typical I_R less than 0.1 µA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	200 V to 1000 V
I_{FSM}	30 A
E_{RSM}	7 mJ
V_F	1.1 V, 1.2 V
I_R	5.0 µA
T_J max.	175 °C

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-204AL, 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: Color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	BYD13DGP	BYD13GGP	BYD13JGP	BYD13KGP	BYD13MGP	UNIT
Device marking code		13DGP	13GGP	13JGP	13KGP	13MGP	
Maximum repetitive peak reverse voltage	V_{RRM}	200	400	600	800	1000	V
Maximum DC blocking voltage	V_{DC}	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length (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
Non-repetitive peak reverse avalanche energy at L = 120 mH, $T_J = T_J$ maximum prior to surge	E_{RSM}	7					mJ
Maximum full load reverse current, full cycle average, 0.375" (9.5 mm) lead lengths at T_A = 75 °C	$I_{R(AV)}$	30					µA
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175					°C

New Product

BYD13DGP thru BYD13MGP

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**BYD13DGP**	**BYD13GGP**	**BYD13JGP**	**BYD13KGP**	**BYD13MGP**	**UNIT**
Maximum instantaneous forward voltage	1.0 A		V_F (1)	1.1			1.2		V
Maximum DC reverse current at rated DC blocking voltage		T_A = 25 °C	I_R	5.0					μA
		T_A = 125 °C		50					
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	3.0					μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	8.0			7.0		pF

Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**BYD13DGP**	**BYD13GGP**	**BYD13JGP**	**BYD13KGP**	**BYD13MGP**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	55					°C/W

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB mounted

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
BYD13JGP-E3/54	0.335	54	5500	13" diameter paper tape and reel
BYD13JGP-E3/73	0.335	73	3000	Ammo pack packaging
BYD13JGPHE3/54 (1)	0.335	54	5500	13" diameter paper tape and reel
BYD13JGPHE3/73 (1)	0.335	73	3000	Ammo pack packaging

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

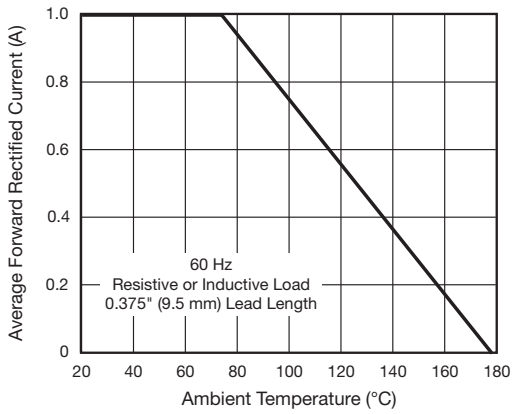

Fig. 1 - Forward Current Derating Curve

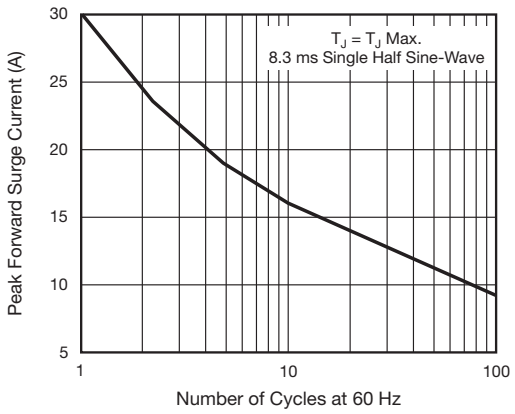

Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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New Product

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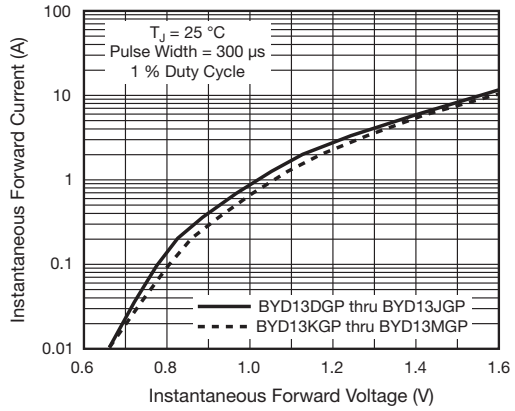


Fig. 3 - Typical Instantaneous Forward Characteristics

BYD13DGP.....200 V

BYD13GGP.....400 V

BYD13JGP.....600 V

BYD13KGP.....800 V

BYD13MGP.....1000 V

Fig. 5 - Maximum Repetitive Peak Reverse Voltage, V_{RRM}

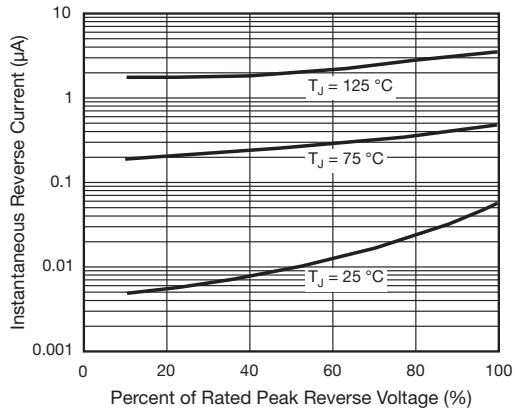


Fig. 4 - Typical Reverse Characteristics

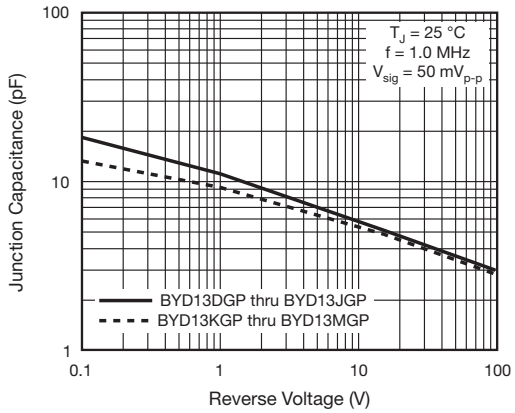
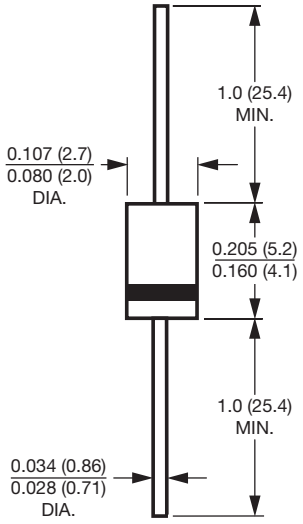


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)



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