

Vishay General Semiconductor

Clamper/Damper Glass Passivated Rectifier



FEATURES

- Superectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- 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

TYPICAL APPLICATIONS

For use in high voltage rectification of power supplies, inverters, converters and freewheeling diodes specially designed for clamping circuits, horizontal deflection systems and damper applications.

MECHANICAL DATA

Case: DO-201AD, 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 ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	BY228GP	UNIT	
Maximum non repetitive peak reverse voltage	V _{RSM}	1650	V	
Maximum repetitive peak reverse voltage	V _{RRM}	1500	V	
Maximum RMS voltage	V _{RMS}	1050	V	
Maximum DC blocking voltage	V _{DC}	1500	V	
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 50 \text{ °C}$	I _{F(AV)}	2.5	A	
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	50	А	
Working peak forward current at $T_A = 75 \text{ °C}$	I _{FWM}	5.0	A	
Peak repetitive forward surge current at $T_A = 75 \text{ °C}$	I _{FRM}	10	A	
Operating junction temperature range	TJ	- 65 to + 150	°C	
Storage temperature range	T _{STG}	- 65 to + 200	°C	

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(Pb) (e3)

ROHS

PRIMARY CHARACTERISTICS			
I _{F(AV)}	2.5 A		
V _{RRM}	1500 V		
I _{FSM}	50 A		
I _R	5.0 µA		
V _F	1.6 V		
T _J max.	150 °C		



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ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)					
PARAMETER	TEST CONDITIONS		SYMBOL	BY228GP	UNIT
Maximum instantaneous forward voltage	I _F = 2.5 A		V _F ⁽¹⁾	1.6	V
Maximum reverse current	V _R = 1500 V	T _A = 25 °C	- I _R	5.0	μA
		T _J = 140 °C		200	
Maximum reverse recovery time	I _F = 1.0 A, I _R = 50 mA, dI/dt = 50 mA/μs		t _{rr}	20	μs
Reverse recovery time	I _F = 0.5 A, I _R = 1.0 A,	typical	+	0.5	μs
	I _{rr} = 0.25 A	maximum	t _{rr}	2.0	
Maximum forward recovery time	$I_F = 5.0 \text{ A with } t_r = 0.1 \mu\text{s}$		t _{fr}	1.0	μs
Typical junction capacitance	4.0 V, 1 MHz		CJ	40	pF

Note

 $^{(1)}$ Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	BY228GP	UNIT	
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	20	°C/W	

Note

⁽¹⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

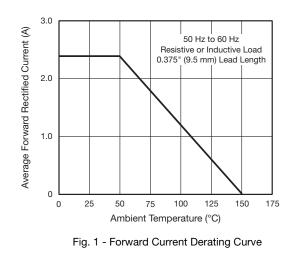
ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BY228GP-E3/54	1.28	54	1400	13" diameter paper tape and reel
BY228GP-E3/73	1.28	73	1000	Ammo pack packaging
BY228GPHE3/54 (1)	1.28	54	1400	13" diameter paper tape and reel
BY228GPHE3/73 (1)	1.28	73	1000	Ammo pack packaging

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)



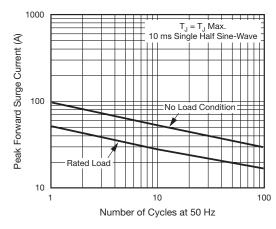


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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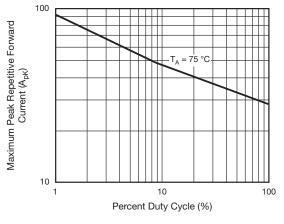


Fig. 3 - Maximum Peak Repetitive Forward Surge Current

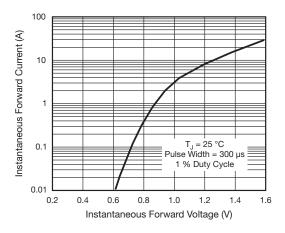


Fig. 4 - Typical Instantaneous Forward Characteristics

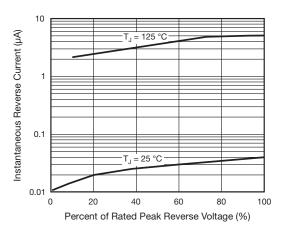
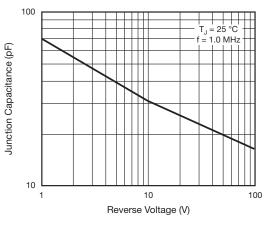
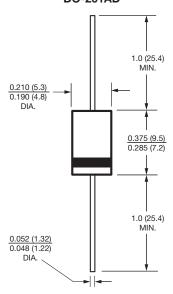


Fig. 5 - Typical Reverse Characteristics





PACKAGE OUTLINE DIMENSIONS in inches (millimeters) DO-201AD



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