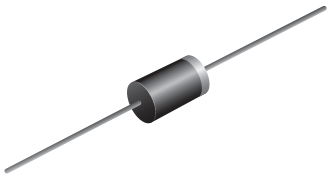
Clamper/Damper Glass Passivated Rectifier

SUPERECTIFIER®



DO-201AD

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

RoHS COMPLIANT

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.

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

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 °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 °C	$I_{F(AV)}$	2.5	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
Working peak forward current at T_A = 75 °C	I_{FWM}	5.0	A
Peak repetitive forward surge current at T_A = 75 °C	I_{FRM}	10	A
Operating junction temperature range	T_J	- 65 to + 150	°C
Storage temperature range	T_{STG}	- 65 to + 200	°C

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

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, I_{rr} = 0.25 A	typical	t_{rr}	0.5	μs
		maximum		2.0	
Maximum forward recovery time	I_F = 5.0 A with t_r = 0.1 μs		t_{fr}	1.0	μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	40	pF

Note

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

THERMAL CHARACTERISTICS (T_A = 25 °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)

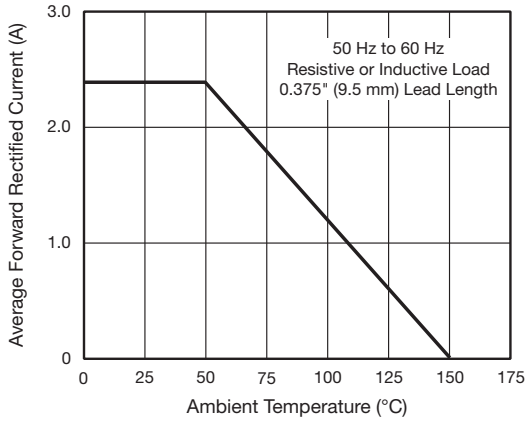


Fig. 1 - Forward Current Derating Curve

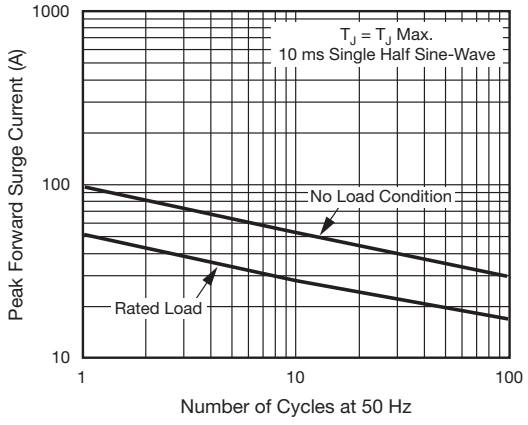


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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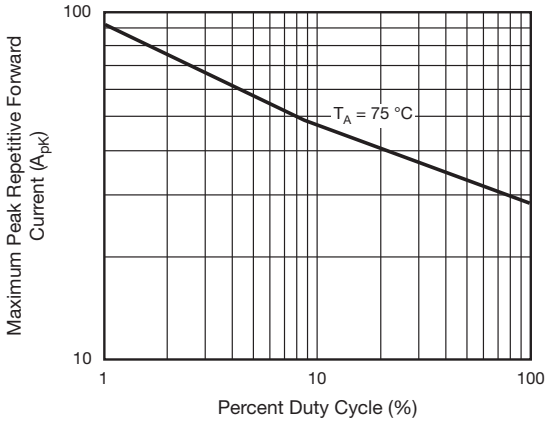


Fig. 3 - Maximum Peak Repetitive Forward Surge Current

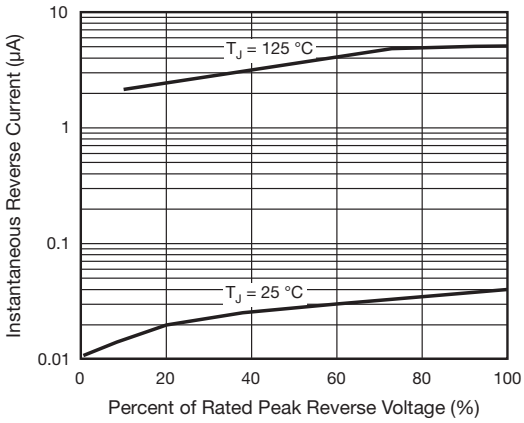


Fig. 5 - Typical Reverse Characteristics

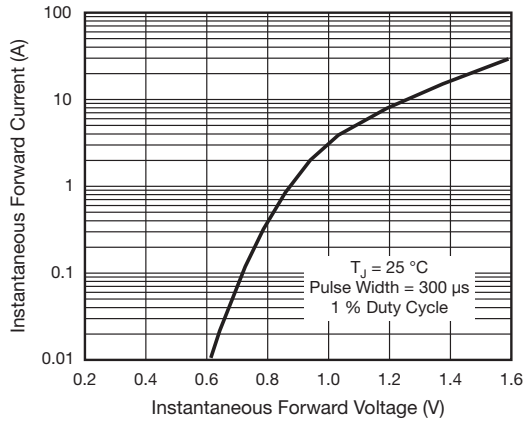


Fig. 4 - Typical Instantaneous Forward Characteristics

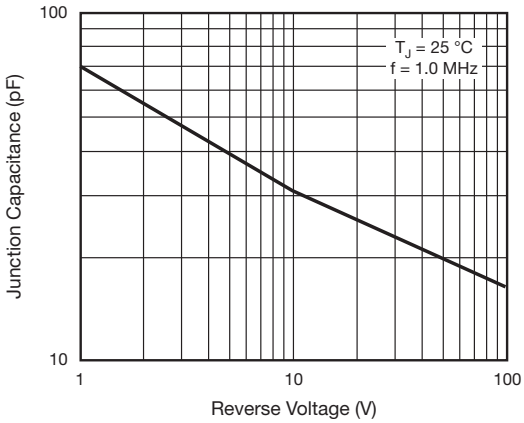
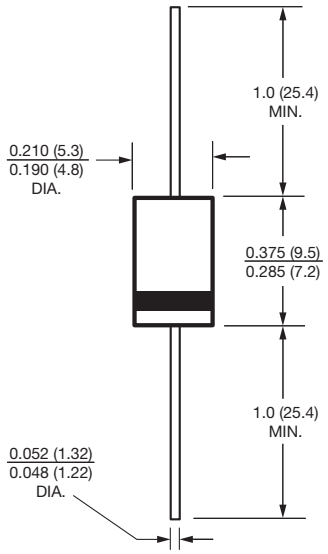


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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