

Clamper/Damper Glass Passivated Rectifier



FEATURES

- Superrectifier structure for high reliability application
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Typical I_R less than 0.1 μ A
- 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.

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.5 A
V_{RRM}	1500 V
I_{FSM}	50 A
I_R	5.0 μ A
V_F	1.6 V
T_J max.	150 °C

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

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 _{θJA} ⁽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)

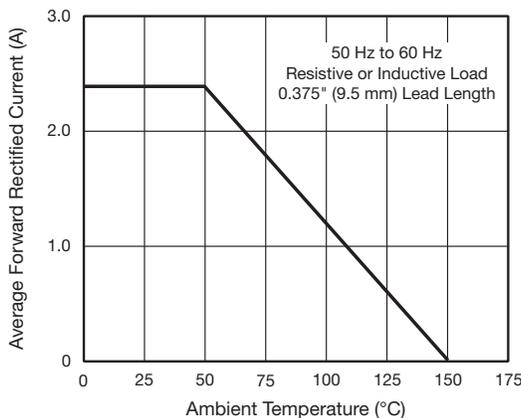


Fig. 1 - Forward Current Derating Curve

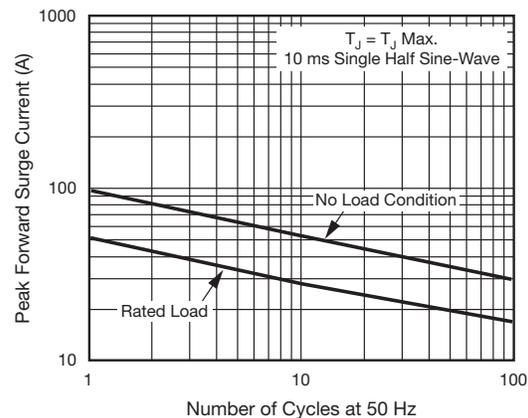


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

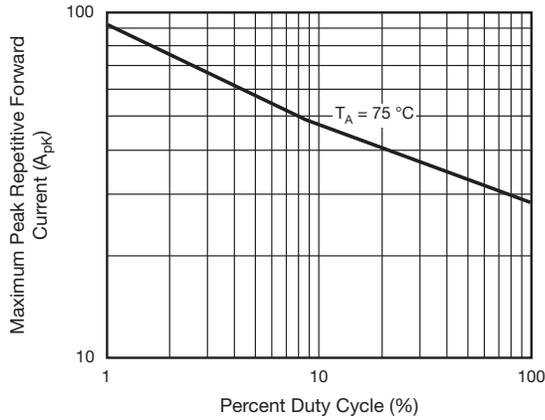


Fig. 3 - Maximum Peak Repetitive Forward Surge Current

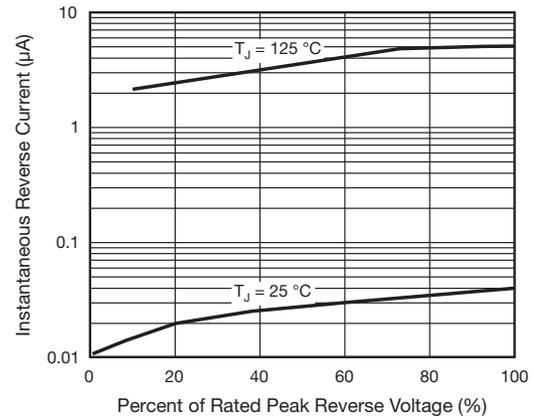


Fig. 5 - Typical Reverse Characteristics

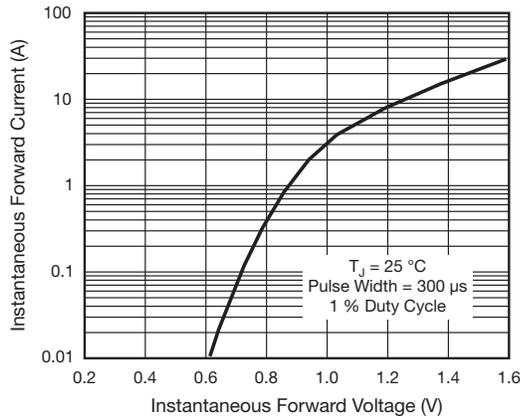


Fig. 4 - Typical Instantaneous Forward Characteristics

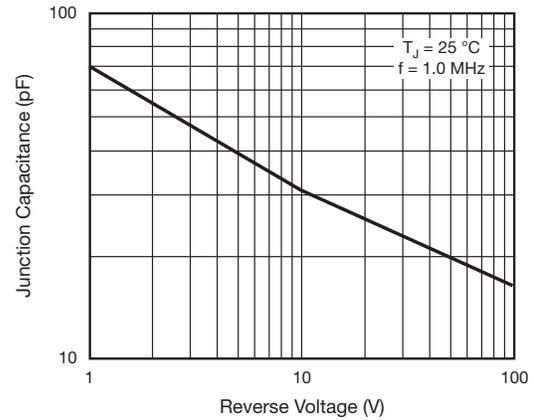
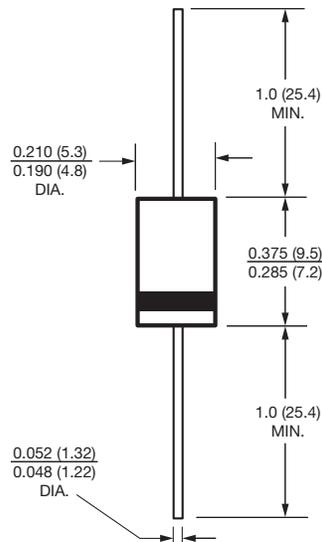


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD




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