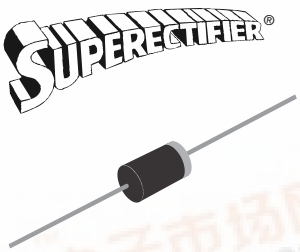
Clamper/Damper Glass Passivated Rectifier



DO-201AD

* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602, and brazed-lead assembly by Patent No. 3,930,306

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 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), 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 µA
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 lengths 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 (1)	I_F = 2.5 A		V_F	1.6	V
Maximum reverse current	V_R = 1500 V	T_A = 25 °C T_J = 140 °C	I_R	5.0 200	μA
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 maximum	t_{rr}	0.5 2.0	μs
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 (1)	$R_{\theta JA}$	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) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

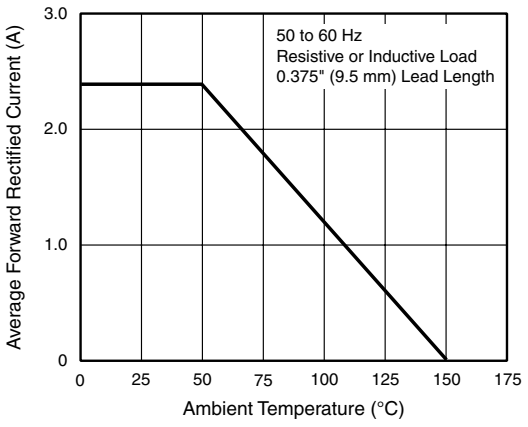


Figure 1. Forward Current Derating Curve

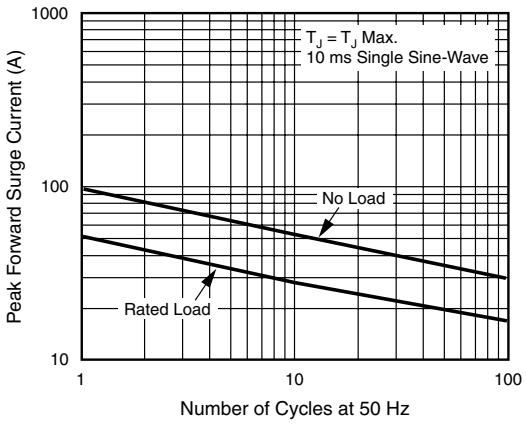


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

For technical questions within your region, please contact one of the following:
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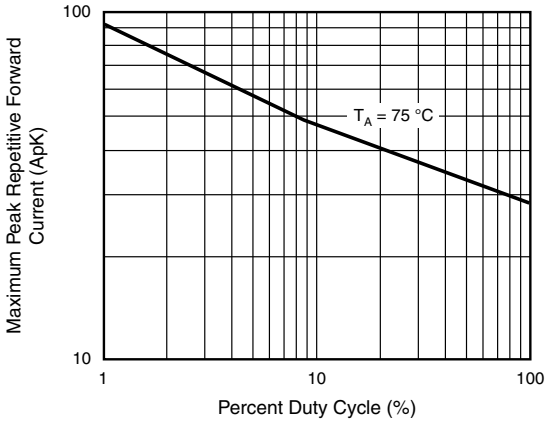


Figure 3. Maximum Peak Repetitive Forward Surge Current

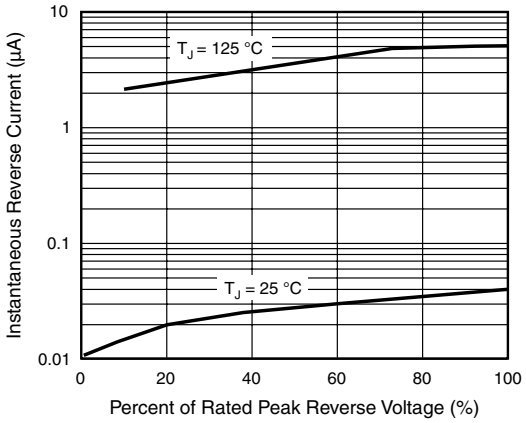


Figure 5. Typical Reverse Characteristics

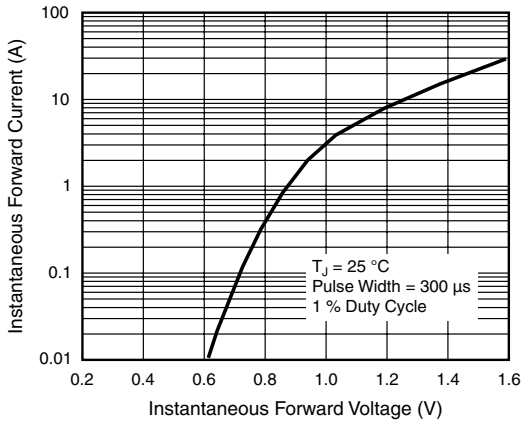


Figure 4. Typical Instantaneous Forward Characteristics

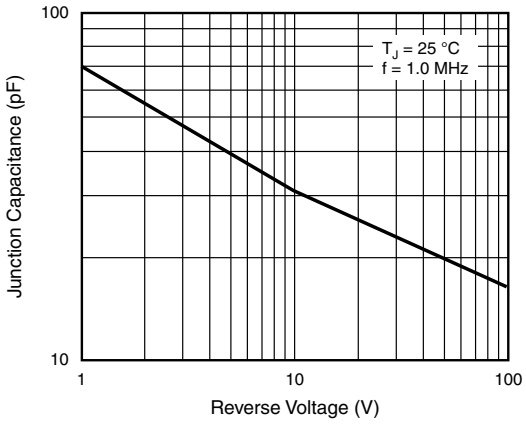
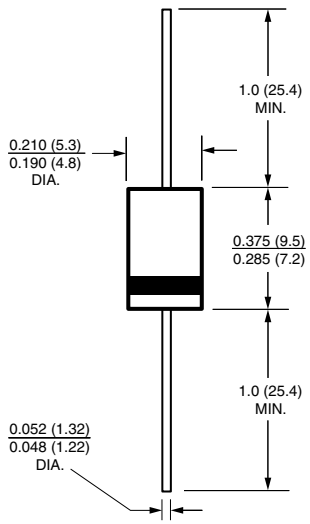


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD



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