

Clamper/Damper Glass Passivated Rectifier



DO-201AD

Patented*

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

FEATURES

- Superelectifier structure for High Reliability 
- 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 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in high voltage rectification of power supplies, inverters, converters and free-wheeling 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-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

MAJOR RATINGS AND 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 ($T_A = 25\text{ °C}$ 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 lengths 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	A
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	T_J	- 65 to + 150	°C
Storage temperature range	T_{STG}	- 65 to + 200	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	BY228GP	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at $I_F = 2.5\text{ A}$	V_F	1.6	V
Maximum reverse current ⁽¹⁾	at $V_R = 1500\text{ V}$ $T_A = 25\text{ }^\circ\text{C}$ $T_j = 140\text{ }^\circ\text{C}$	I_R	5.0 200	μA
Maximum reverse recovery time	$I_F = 1.0\text{ A}$, $I_R = 50\text{ mA}$, $di/dt = 50\text{ mA}/\mu\text{s}$	t_{rr}	20	μs
Reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ typical maximum	t_{rr}	0.5 2.0	μs
Maximum forward recovery time	$I_F = 5.0\text{ A}$ with $t_r = 0.1\text{ }\mu\text{s}$	t_{fr}	1.0	μs
Typical junction capacitance	at 4.0 V , 1 MHz	C_J	40	pF

Note:

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

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

Note:

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

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
BY228GP-E3/54	1.28	54	1400	13" Diameter Paper Tape & Reel
BY228GP-E3/73	1.28	73	1000	Ammo Pack Packaging

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

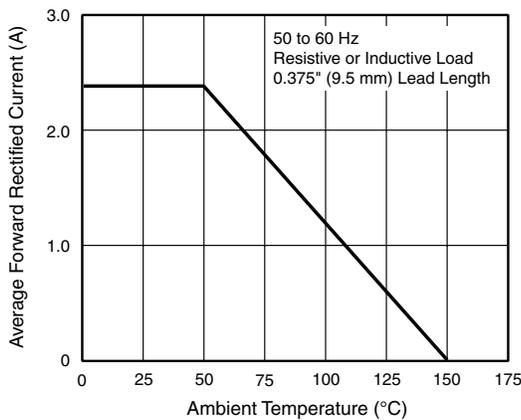


Figure 1. Forward Current Derating Curve

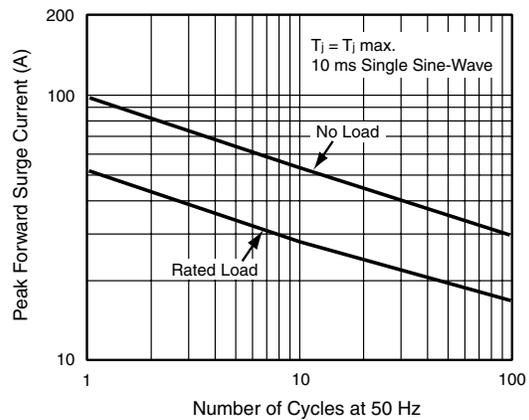


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

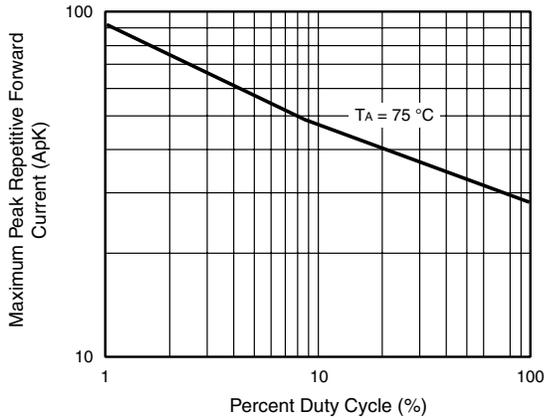


Figure 3. Maximum Peak Repetitive Forward Surge Current

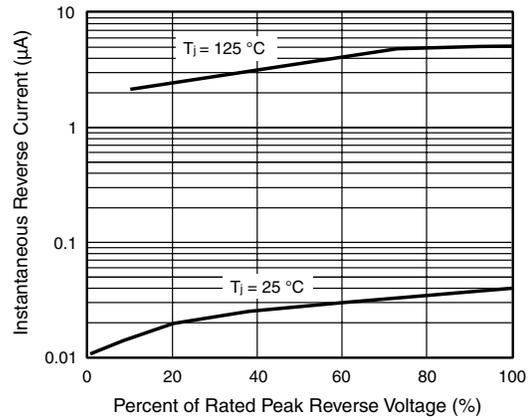


Figure 5. Typical Reverse Characteristics

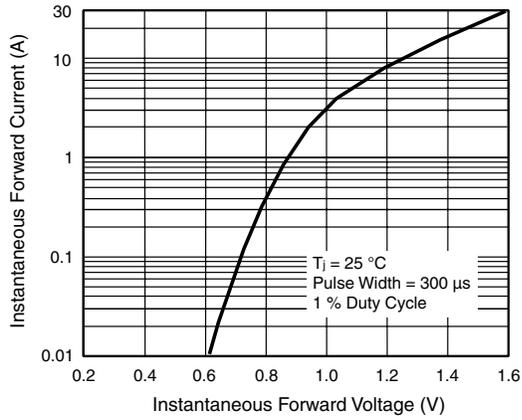


Figure 4. Typical Instantaneous Forward Characteristics

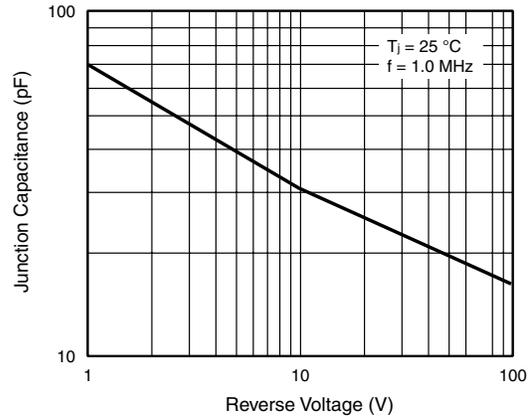
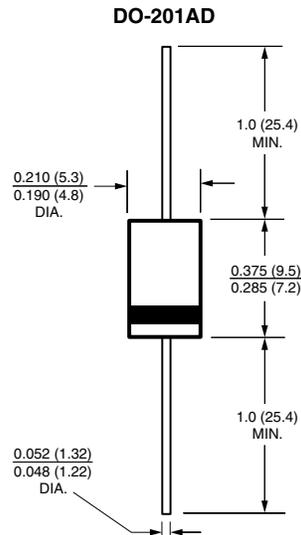


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)




Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.