



Clamper / Damper Glass Passivated Fast Plastic 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
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



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

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|-------------|
| $I_{F(AV)}$ | 2.5 A |
| V_{RRM} | 1500 V |
| I_{FSM} | 50 A |
| t_{rr} | 2000 ns |
| I_R | 5.0 μ A |
| V_F | 1.6 V |
| T_J max. | 150 °C |
| Package | DO-201AD |
| Circuit configuration | Single |

| 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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|---|-----------------------------------|-------------|---------|---------------|
| PARAMETER | TEST CONDITIONS | | SYMBOL | BY228GP | UNIT |
| Maximum instantaneous forward voltage | $I_F = 2.5\text{ A}$ | | $V_F^{(1)}$ | 1.6 | V |
| Maximum reverse current | $V_R = 1500\text{ V}$ | $T_A = 25\text{ }^\circ\text{C}$ | I_R | 5.0 | μA |
| | | $T_J = 140\text{ }^\circ\text{C}$ | | 200 | |
| 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 | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | typical | t_{rr} | 0.5 | μs |
| | | maximum | | 2.0 | |
| 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 | 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 | $R_{\theta JA}^{(1)}$ | 20 | $^\circ\text{C}/\text{W}$ |

Note

(1) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, PCB 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 |



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

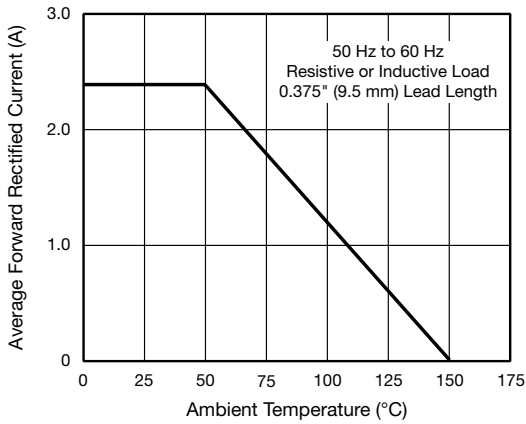


Fig. 1 - Forward Current Derating Curve

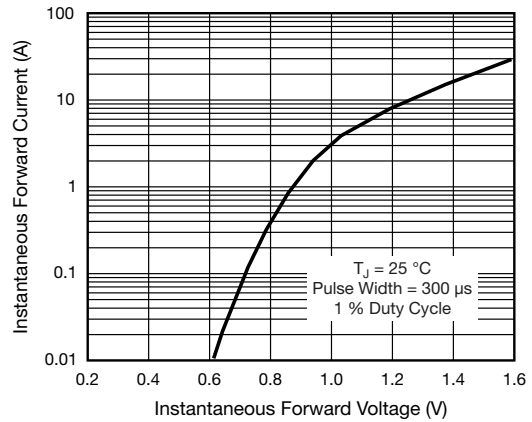


Fig. 4 - Typical Instantaneous Forward Characteristics

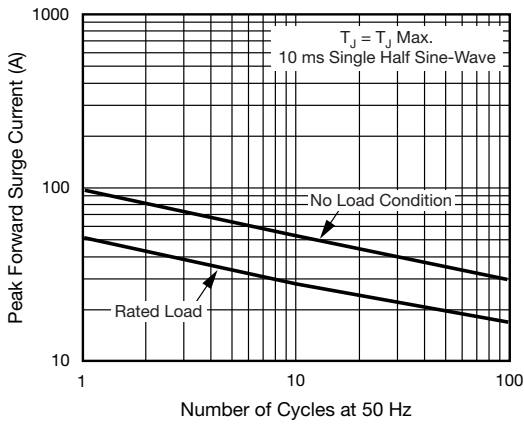


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

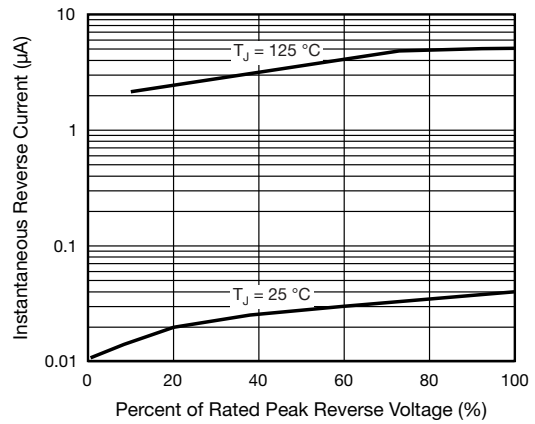


Fig. 5 - Typical Reverse Characteristics

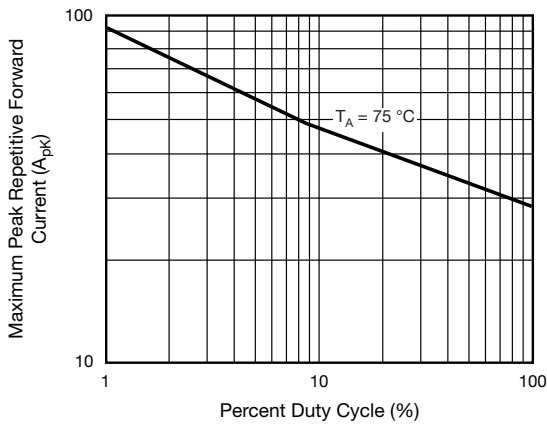


Fig. 3 - Maximum Peak Repetitive Forward Surge Current

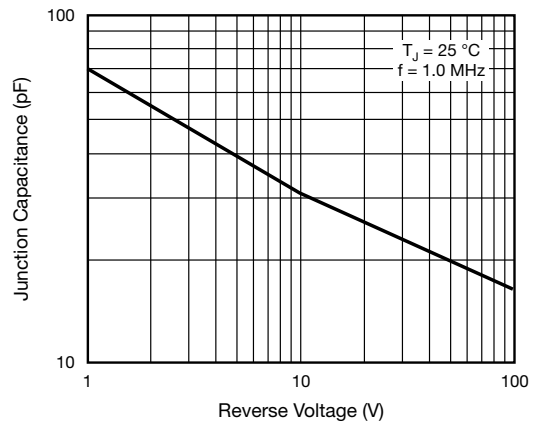
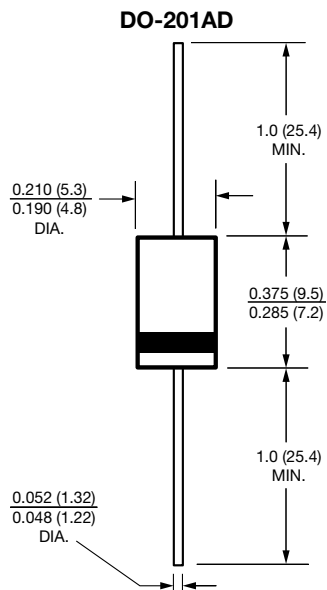


Fig. 6 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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