AGP15-400 thru AGP15-800

Vishay General Semiconductor

Glass Passivated Junction Plastic Controlled Avalanche Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.5 A
V_{RRM}	400 V to 800 V
P_{RM}	500 W
I_{FSM}	50 A
I_R	5.0 µA
V_F	1.1 V
T_j max.	175 °C

DO-204AC (DO-15)

* Glass-plastic encapsulation technique is covered by Patent No. 3,996,602 of 1976; brazed-lead assembly by Patent No. 3,930,306 of 1976 and glass composition by Patent No. 3,752,701 of 1973

Features

- Superectifier structure for High Reliability application
- Cavity-free glass-passivated junction
- Controlled Avalanche characteristics
- Low forward voltage drop
- Low leakage current, I_R less than 0.1 µA
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application

Mechanical Data

Case: DO-204AC, 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

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	AGP15-400	AGP15-600	AGP15-800	Unit
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	400	600	800	V
Maximum RMS voltage	V_{RMS}	280	420	560	V
Maximum DC blocking voltage	V_{DC}	400	600	800	V
Maximum Peak Power Dissipation in the Avalanch Region 20 µs Pulse	P_{RM}	500			W
Max. Average Forward Rectified Current 0.375" (9.5 mm) Lead Lengths at T_A = 55 °C	I_{AV}	1.5			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50			A
Maximum full load reverse current, full cycle average 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{R(AV)}$	100			µA
Operating and storage temperature range	T_J, T_{STG}	- 65 to + 175			°C

Electrical Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Test condition	Symbol	AGP15-400	AGP15-600	AGP15-800	Unit
Minimum Avalanche Breakdown Voltage	at 100 µA	V_{BR}	450	675	880	V
Maximum Avalanche Breakdown Voltage	at 100 µA	V_{BR}	750	1000	1200	V
Maximum instantaneous forward voltage	at 1.5 A	V_F	1.1			V
Maximum reverse current at rated DC blocking voltage		I_R	5.0			µA
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	2.0			µs
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	15			pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	AGP15-400	AGP15-600	AGP15-800	Unit
Typical thermal resistance (1)	$R_{\theta JA}$	25			°C/W

Notes:

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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

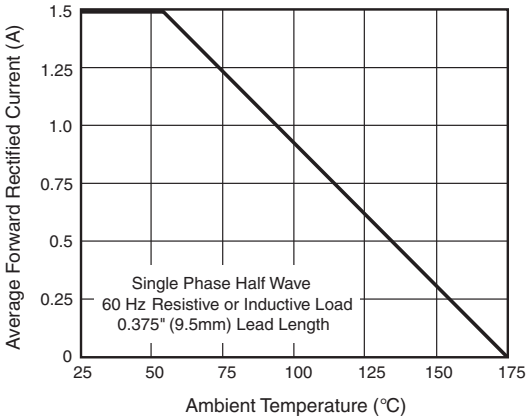


Figure 1. Maximum Forward Current Derating Curve

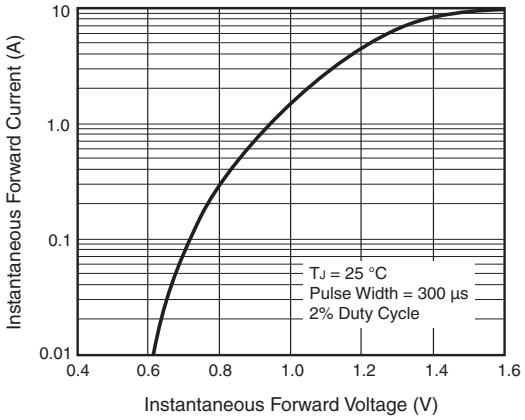


Figure 2. Typical Instantaneous Forward Characteristics

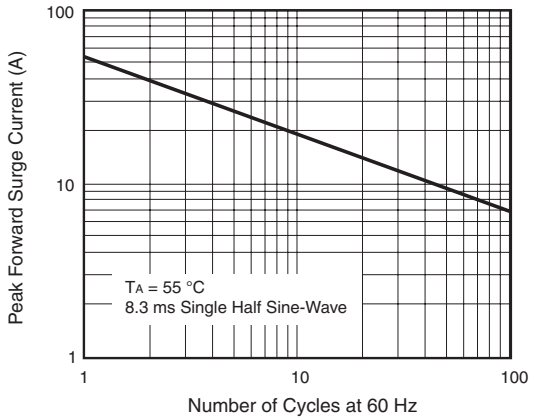


Figure 3. Maximum Non-repetitive Peak Forward Surge Current

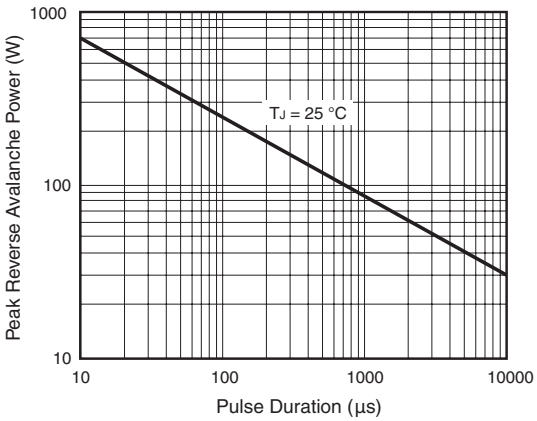


Figure 5. Typical Reverse Leakage Characteristics

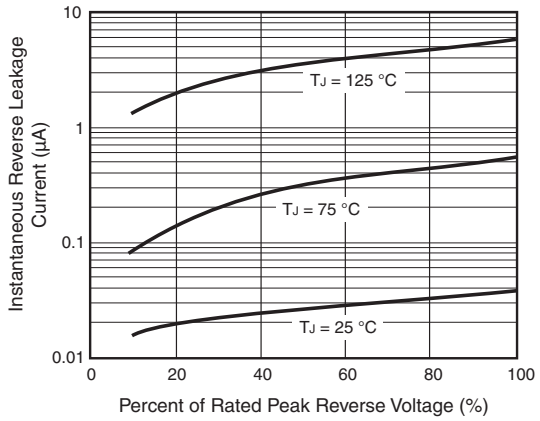
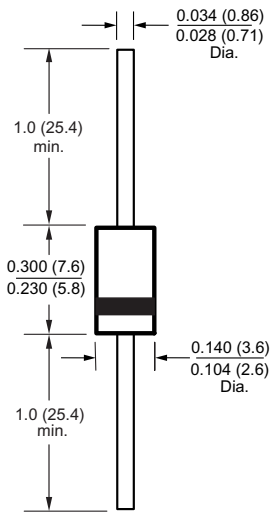


Figure 4. Maximum Non-repetitive Reverse Avalanche Power Dissipation

Package outline dimensions in inches (millimeters)

DO-204AC (DO-15)



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.