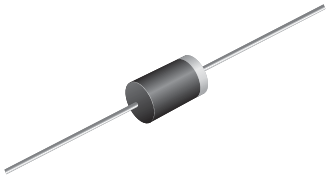
P300A thru P300M

Vishay General Semiconductor

General Purpose Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	3.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	200 A
I_R	5.0 µA
V_F	1.2 V
T_j max.	150 °C



DO-201AD

Features

- Low forward voltage drop
- Low leakage current, I_R less than 0.1 µA
- High forward surge capability
- Solder Dip 260 °C, 40 seconds

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes application.
(Note: These devices are not Q101 qualified. Therefore, the devices specified in this datasheet have not been designed for use in automotive or Hi-Rel applications.)

Mechanical Data

Case: DO-201AD, molded epoxy body
Epoxy meets UL-94V-0 Flammability rating
Terminals: Matte tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D
Polarity: Color band denotes cathode end

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbols	P300A	P300B	P300D	P300G	P300J	P300K	P300M	Units
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at T_A = 55 °C	$I_{F(AV)}$	3.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	200							A
Operating junction and storage temperature range	T_J, T_{STG}	- 50 to + 150							°C

Electrical Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Test condition	Symbols	P300A	P300B	P300D	P300G	P300J	P300K	P300M	Units
Maximum instantaneous forward voltage	at 3.0 A	V_F	1.2							V
Maximum DC reverse current at rated DC blocking voltage	T_A = 25 °C T_A = 100 °C	I_R	5.0 25							µA
Typical reverse recovery time	at 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	30							pF

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbols	P300A	P300B	P300D	P300G	P300J	P300K	P300M	Units
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$	20 5.0							°C/W

Notes:

(1) Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted with 0.8 x 0.8" (20 x 20 mm) copper heatsinks

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

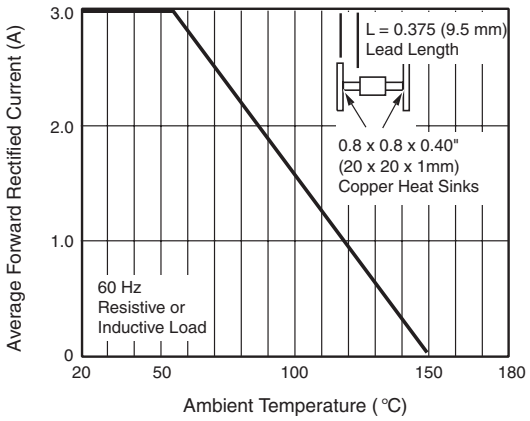


Figure 1. Forward Current Derating Curve

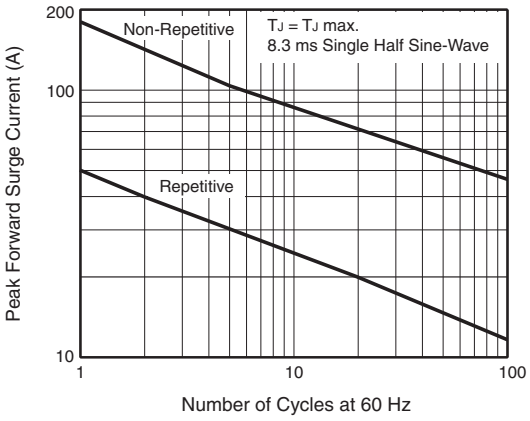


Figure 2. Maximum Peak Forward Surge Current

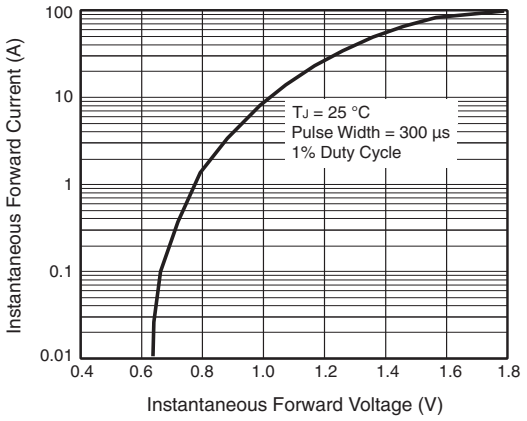


Figure 3. Typical Instantaneous Forward Characteristics

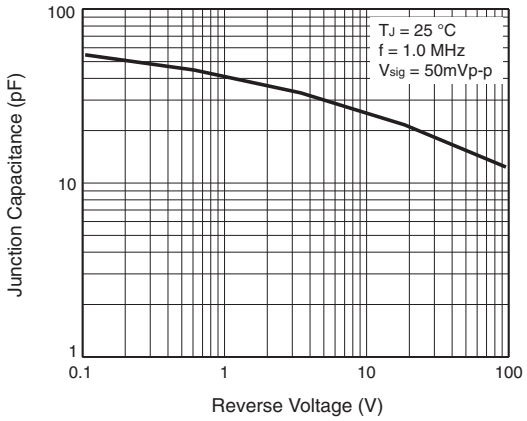


Figure 5. Typical Junction Capacitance Per Leg

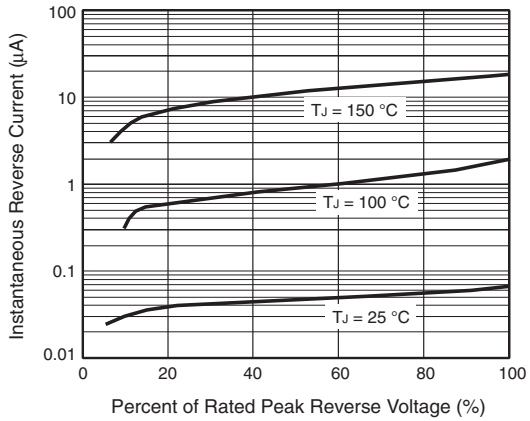


Figure 4. Typical Reverse Characteristics

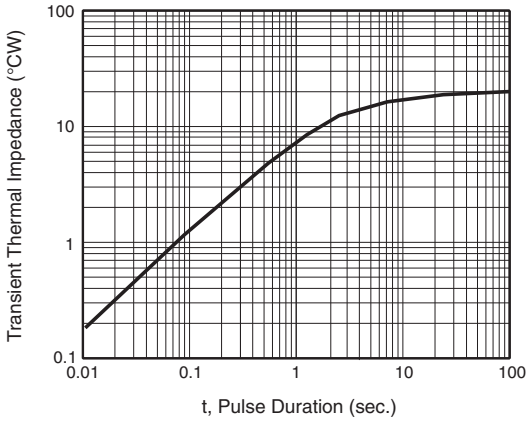
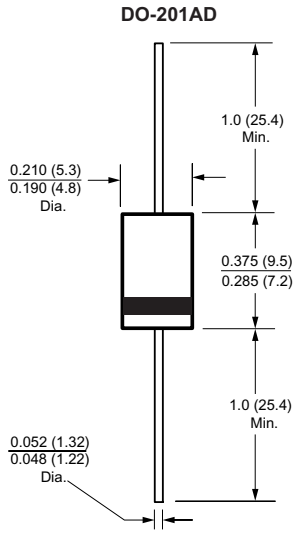


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)



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