

P300A, P300B, P300D, P300G, P300J, P300K, P300K

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Vishay General Semiconductor

General Purpose Plastic Rectifier



PRIMARY CHARACTERISTICS							
I _{F(AV)}	3.0 A						
V _{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V						
I _{FSM}	200 A						
I _R	5.0 μA						
V_F at $I_F = 3.0 A$	1.2 V						
T_J max.	150 °C						
Package	DO-201AD						
Diode variations	Single die						

FEATURES

- Low forward voltage drop
- Low leakage current, I_R less than 0.1 μA
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>





TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-201AD, molded epoxy 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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Max. DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified current 0.375" (9.5 mm) lead length at T _A = 55 °C	I _{F(AV)}	3.0					Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	200				А			
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 CONDITIONS		SYMBOL	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNIT
Max. instantaneous forward voltage	3.0 A		V _F	1.2						V	
Max. DC reverse current		T _A = 25 °C		5.0							μА
at rated DC blocking voltage T _A = 100 °C		T _A = 100 °C	I _R	25							
Typical reverse recovery time	$I_F = 0.5 A$ $I_{rr} = 0.25$	A, I _R = 1.0 A, A	t _{rr}	2.0					μs		
Typical junction capacitance	4.0 V, 1 N	МНz	CJ	30					pF		

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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL P300A P300B P300D P300G P300J P300K P300M UNI								UNIT
Typical thermal resistance	R _{0JA} (1)	20							°C/W
Typical thermal resistance	R _{0JL} (1)	5.0							C/ VV

Note

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

ORDERING INFORMATION (Example)									
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE					
P300J-E3/54	1.1	54	1400	13" diameter paper tape and reel					
P300J-E3/73	1.1	73	1000	Ammo pack packaging					

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

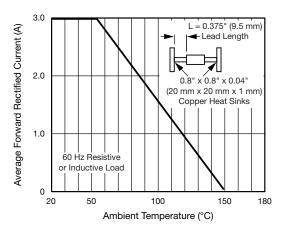


Fig. 1 - Forward Current Derating Curve

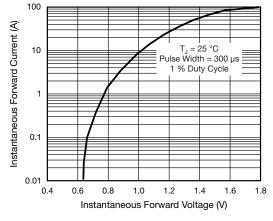


Fig. 3 - Typical Instantaneous Forward Characteristics

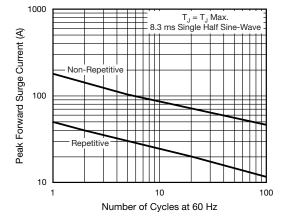


Fig. 2 - Max. Peak Forward Surge Current

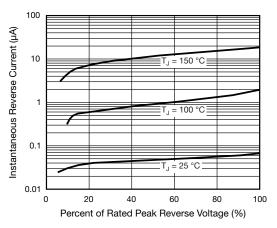


Fig. 4 - Typical Reverse Characteristics



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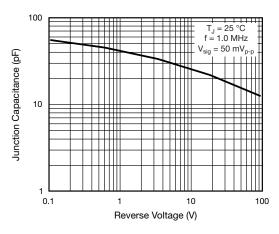


Fig. 5 - Typical Junction Capacitance Per Leg

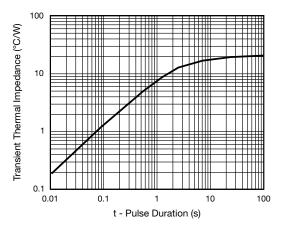
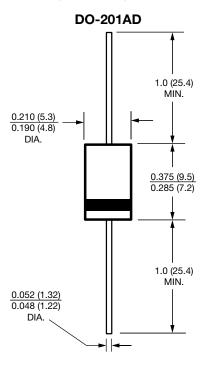


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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