

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

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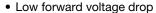
Vishay General Semiconductor

# **General Purpose Plastic Rectifier**

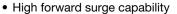


PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub>	I <sub>F(AV)</sub> 3.0 A							
V <sub>RRM</sub>	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I <sub>FSM</sub>	200 A							
I <sub>R</sub>	5.0 μΑ							
$V_F$ at $I_F = 3.0 A$	1.2 V							
T <sub>J</sub> max.	150 °C							
Package	DO-201AD							
Diode variations	Single die							

### **FEATURES**







• Solder dip 275 °C max. 10 s, per JESD 22-B106

**RoHS** COMPLIANT · Material categorization: For definitions of compliance please see www.vishav.com/doc?99912



### **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 <sub>A</sub> = 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 <sub>RMS</sub>	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 <sub>A</sub> = 55 °C	I <sub>F(AV)</sub>	3.0					Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	200				Α			
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	T <sub>STG</sub> - 50 to + 150					°C		

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 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 <sub>F</sub>	1.2						٧	
Max. DC reverse current		T <sub>A</sub> = 25 °C		5.0							
at rated DC blocking voltage		T <sub>A</sub> = 100 °C	I <sub>R</sub>				25				μA
Typical reverse recovery time	$I_F = 0.5 A$ $I_{rr} = 0.25$	A, I <sub>R</sub> = 1.0 A, A	t <sub>rr</sub>	2.0					μs		
Typical junction capacitance	4.0 V, 1 N	МНz	CJ	30					pF		

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

#### Note

<sup>(1)</sup> 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)

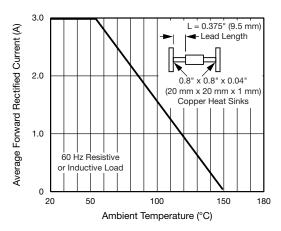


Fig. 1 - Forward Current Derating Curve

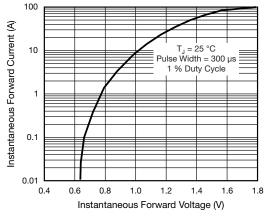


Fig. 3 - Typical Instantaneous Forward Characteristics

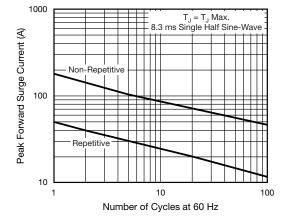


Fig. 2 - Max. Peak Forward Surge Current

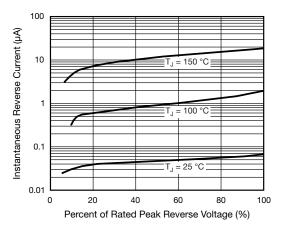


Fig. 4 - Typical Reverse Characteristics

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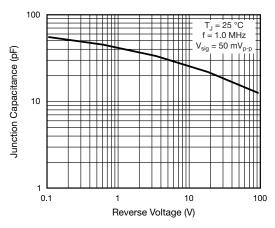


Fig. 5 - Typical Junction Capacitance Per Leg

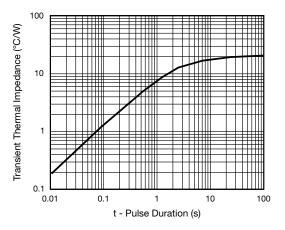
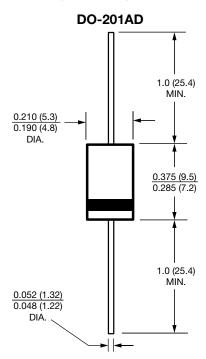


Fig. 6 - Typical Transient Thermal Impedance

### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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