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



Vishay General Semiconductor

## **General Purpose Plastic Rectifier**



PRIMARY CHARACTERISTICS							
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 μA						
V <sub>F</sub> at I <sub>F</sub> = 3.0 A	1.2 V						
T <sub>J</sub> max.	150 °C						
Package	DO-201AD						
Diode variations	Single die						

#### **FEATURES**

- Low forward voltage drop
- Low leakage current, I<sub>R</sub> less than 0.1 μA
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
  RoHS
- Material categorization: For definitions of COMPLIANT compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### 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

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNIT
Max. repetitive peak reverse voltage	V <sub>RRM</sub>	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 <sub>DC</sub>	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 <sub>F(AV)</sub>	3.0						А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	200					А		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- J, T <sub>STG</sub> - 50 to + 150					°C		

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

Revision: 13-Aug-13

Document Number: 88691

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<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	SYMBOL      P300A      P300B      P300D      P300G      P300J      P300K      P300M      UNIT							UNIT	
Typical thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	20							°C/W
Typical thermal resistance	$R_{\theta JL}$ <sup>(1)</sup>	<sup>I)</sup> 5.0						0,00	

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)

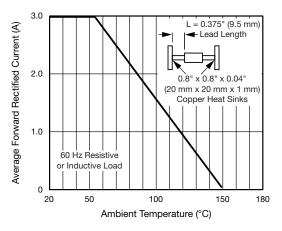


Fig. 1 - Forward Current Derating Curve

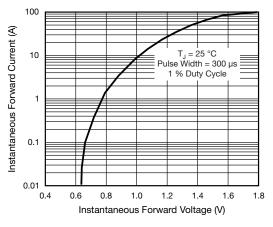


Fig. 3 - Typical Instantaneous Forward Characteristics

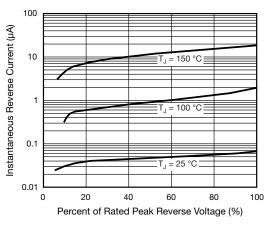


Fig. 4 - Typical Reverse Characteristics

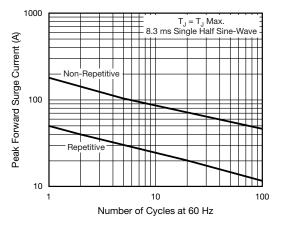


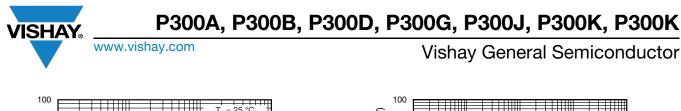
Fig. 2 - Max. Peak Forward Surge Current

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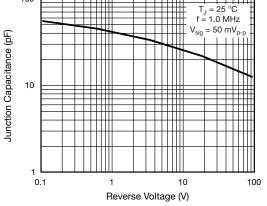


Fig. 5 - Typical Junction Capacitance Per Leg

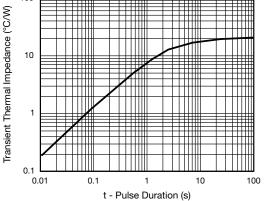
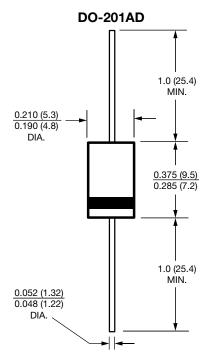


Fig. 6 - Typical Transient Thermal Impedance







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