



**THE DATASHEET OF
P300M-E3/54**





General Purpose Plastic Rectifier



DO-201AD

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 www.vishay.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

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 $I_F = 3.0 \text{ A}$	1.2 V
T_J max.	150 °C
Package	DO-201AD
Circuit configuration	Single

MAXIMUM RATINGS ($T_A = 25 \text{ }^\circ\text{C}$ 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 $T_A = 55 \text{ }^\circ\text{C}$	$I_{F(AV)}$	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 ($T_A = 25 \text{ }^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNIT
Max. instantaneous forward voltage	3.0 A	V_F					1.2			V
Max. DC reverse current at rated DC blocking voltage	$T_A = 25 \text{ }^\circ\text{C}$	I_R					5.0			μA
	$T_A = 100 \text{ }^\circ\text{C}$						25			
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$	t_{rr}					2.0			μs
Typical junction capacitance	4.0 V, 1 MHz	C_J					30			pF



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	P300A	P300B	P300D	P300G	P300J	P300K	P300M	UNIT
Typical thermal resistance	$R_{\theta JA}$ (1)					20			$^\circ\text{C/W}$
	$R_{\theta JL}$ (1)					5.0			

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 ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

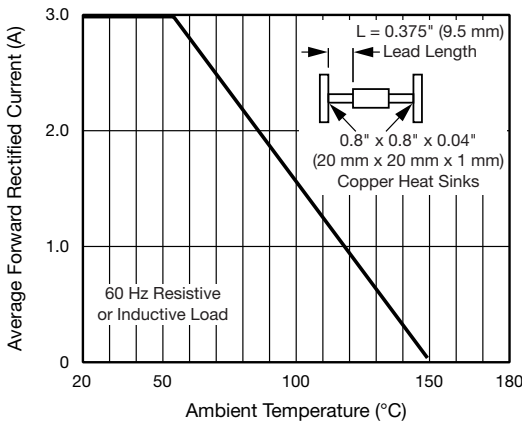


Fig. 1 - Forward Current Derating Curve

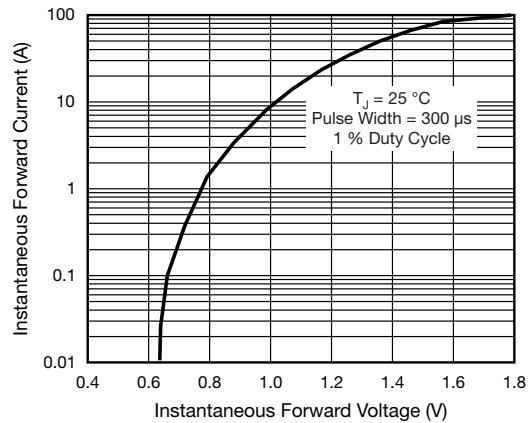


Fig. 3 - Typical Instantaneous Forward Characteristics

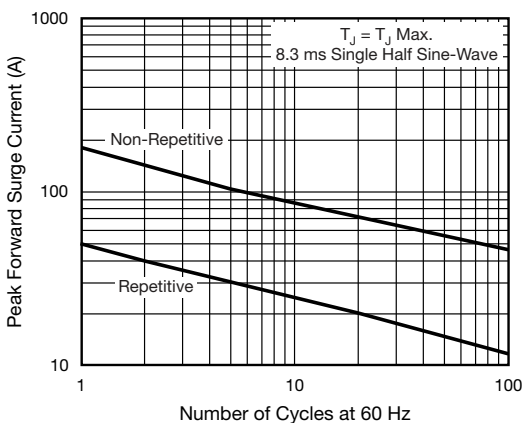


Fig. 2 - Max. Peak Forward Surge Current

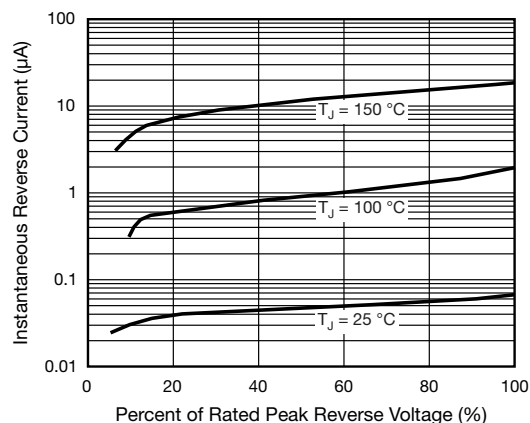


Fig. 4 - Typical Reverse Characteristics

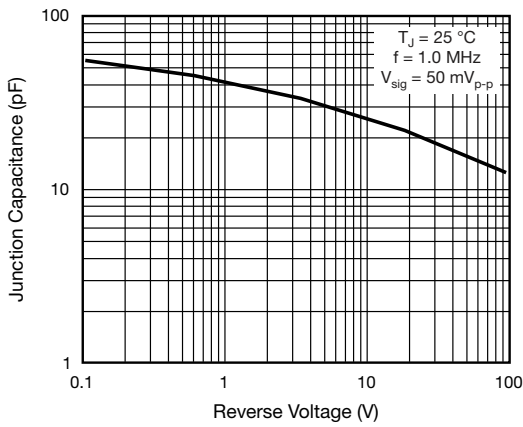


Fig. 5 - Typical Junction Capacitance Per Leg

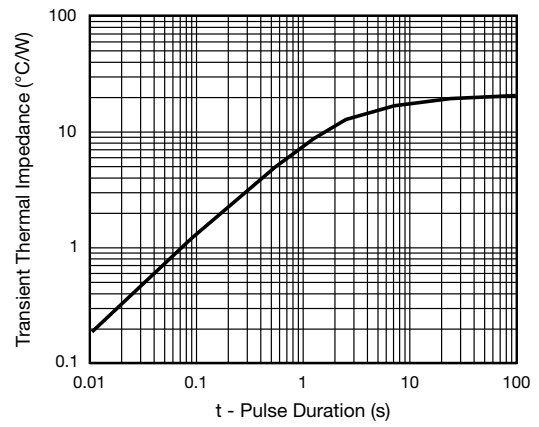
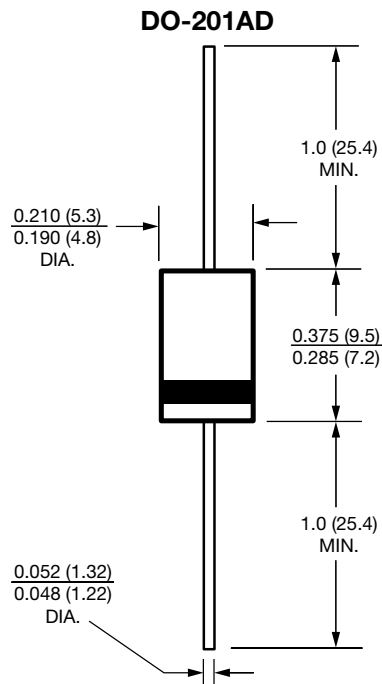


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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