

## 1N5400, 1N5401, 1N5402, 1N5403, 1N5404, 1N5405, 1N5406, 1N5407, 1N5408

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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, 300 V, 500 V, 600 V, 800 V, 1000 V						
I <sub>FSM</sub>	200 A						
I <sub>R</sub>	5.0 μA						
V <sub>F</sub>	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
- · 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.vishav.com/doc?99912">www.vishav.com/doc?99912</a>

#### TYPICAL APPLICATIONS

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

#### Note

• These devices are not AEC-Q101 qualified.

#### **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	1N5400	1N5401	1N5402	1N5403	1N5404	1N5405	1N5406	1N5407	1N5408	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	500	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	210	280	350	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	300	400	500	600	800	1000	V
Maximum average forward rectified current 0.5" (12.5 mm) lead length at T <sub>L</sub> = 105 °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							Α	
Maximum full load reverse current, full cycle average 0.5" (12.5 mm) lead length at T <sub>L</sub> = 105 °C	I <sub>R(AV)</sub>	500							μА		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>				-	50 to + 15	50				°C

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)												
PARAMETER	TEST CONDITIONS	SYMBOL	1N5400	1N5401	1N5402	1N5403	1N5404	1N5405	1N5406	1N5407	1N5408	UNIT
Maximum instantaneous forward voltage	3.0 A	V <sub>F</sub>		1.2					V			
Maximum DC reverse current	T <sub>A</sub> = 25 °C			5.0								
at rated DC blocking voltage	T <sub>A</sub> = 150 °C	IR		500						μΑ		
Typical junction capacitance	4.0 V, 1 MHz	CJ	30					pF				

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	1N5400	N5400   1N5401   1N5402   1N5403   1N5404   1N5405   1N5406   1N5407   1N5408   UNIT						UNIT
Typical thermal resistance	R <sub>0JA</sub> (1)	20				°C/W			

#### Note

<sup>(1)</sup> Thermal resistance from junction to ambient 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						
1N5404-E3/54	1.1	54	1400	13" diameter paper tape and reel						
1N5404-E3/73	1.1	73	1000	Ammo pack packaging						

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

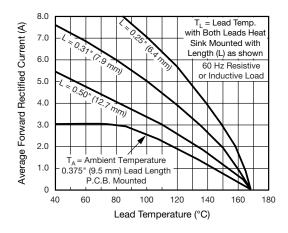


Fig. 1 - Forward Current Derating Curve

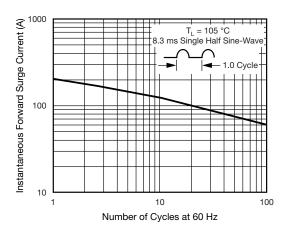


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

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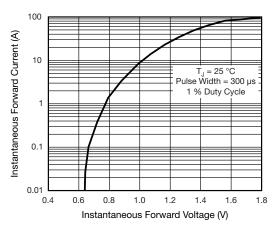


Fig. 3 - Typical Instantaneous Forward Characteristics

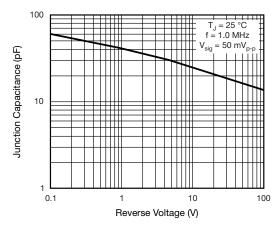


Fig. 5 - Typical Junction Capacitance

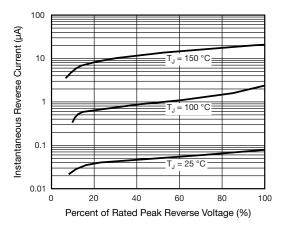


Fig. 4 - Typical Reverse Characteristics

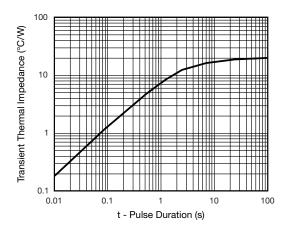
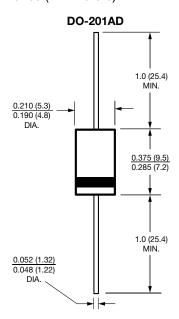


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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