

Vishay General Semiconductor

# **Schottky Barrier Plastic Rectifier**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	3.0 A					
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V					
I <sub>FSM</sub>	120 A					
V <sub>F</sub>	0.49 V, 0.68 V					
T <sub>J</sub> max.	125 °C, 150 °C					
Package	DO-201AD					
Diode variations	Single					

## **FEATURES**

- · Guardring for overvoltage protection
- · Very small conduction losses
- · Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

## TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

## **MECHANICAL DATA**

Case: DO-201AD

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 the cathode end

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB320	SB330	SB340	SB350	SB360	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V
Maximum RMS voltage	$V_{RMS}$	14 21 28 35 42				42	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (fig. 1)	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>	120					Α
Operating junction temperature range	TJ	- 65 to + 125 - 65 to + 150			°C		
Storage temperature range	T <sub>STG</sub>	- 65 to + 150				°C	

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SB320 SB330 SB340		SB350	SB360	UNIT	
Maximum instantaneous forward voltage	3.0 A	V <sub>F</sub> <sup>(1)</sup>	0.49		0.68		V	
Maximum instantaneous reverse current at	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(1)</sup>	0.5				mA	
rated DC blocking voltage	ng voltage $T_A = 100  ^{\circ}\text{C}$		20			10		IIIA

### Note

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle



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THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB320	SB330	SB340	SB350	SB360	UNIT
Typical thermal resistance	R <sub>0JA</sub> (1)		30				°C/W
Typical thermal resistance	R <sub>0JL</sub> (1)			10			C/VV

#### Note

<sup>(1)</sup> Thermal resistance from junction to lead vertical PCB mounting, 0.500" (12.7 mm) lead length with 2.5" x 2.5" (63.5 mm x 63.5 mm) copper pad

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SB340-E3/54	1.08	54	1400	13" diameter paper tape and reel			
SB340-E3/73	1.08	73	1000	Ammo pack packaging			

## **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

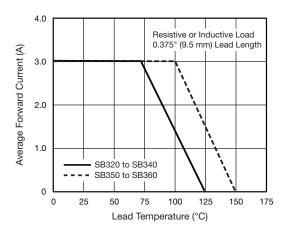


Fig. 1 - Forward Current Derating Curve

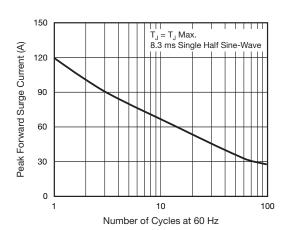


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

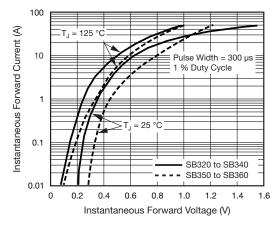


Fig. 3 - Typical Instantaneous Forward Characteristics

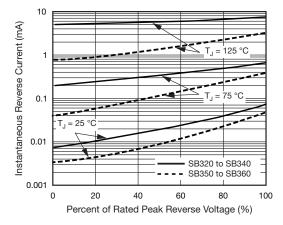


Fig. 4 - Typical Reverse Characteristics



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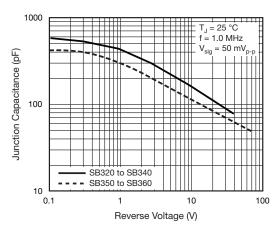


Fig. 5 - Typical Junction Capacitance

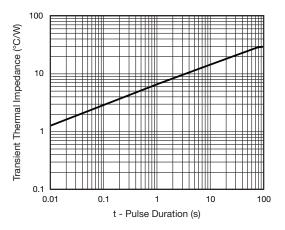
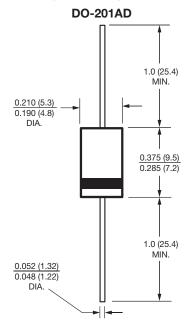


Fig. 6 - Typical Transient Thermal Impedance

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





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