

## Schottky Barrier Rectifier


**DO-201AD**

### FEATURES

- Guardring for overvoltage protection
- 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
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-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

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	5.0 A
$V_{RRM}$	20 V to 60 V
$I_{FSM}$	220 A
$V_F$	0.48 V, 0.65 V
$T_J$ max.	150 °C

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	SB520	SB530	SB540	SB550	SB560	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	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)	$I_{F(AV)}$	5.0					A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	220					A
Operating junction temperature range	$T_J$	- 65 to + 150					°C
Storage temperature range	$T_{STG}$	- 65 to + 150					°C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SB520	SB530	SB540	SB550	SB560	UNIT	
Maximum instantaneous forward voltage	5.0 A		$V_F^{(1)}$	0.48			0.65		V	
Maximum instantaneous reverse current at rated DC blocking voltage		$T_A = 25\text{ }^{\circ}\text{C}$	$I_R^{(1)}$	0.5						mA
		$T_A = 100\text{ }^{\circ}\text{C}$		50			25			

#### Note

(1) Pulse test: 300  $\mu$ s pulse width, 1 % duty cycle

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

PARAMETER	SYMBOL	SB520	SB530	SB540	SB550	SB560	UNIT
Typical thermal resistance	R <sub>θJA</sub> <sup>(1)</sup>	25					°C/W
	R <sub>θJL</sub> <sup>(1)</sup>	8					

**Note**

<sup>(1)</sup> Thermal resistance from junction to lead vertical P.C.B. mounting, 0.375" (9.5 mm) lead length

**ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB540-E3/54	1.09	54	1400	13" diameter paper tape and reel
SB540-E3/73	1.09	73	1000	Ammo pack packaging

**RATINGS AND CHARACTERISTICS CURVES**

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

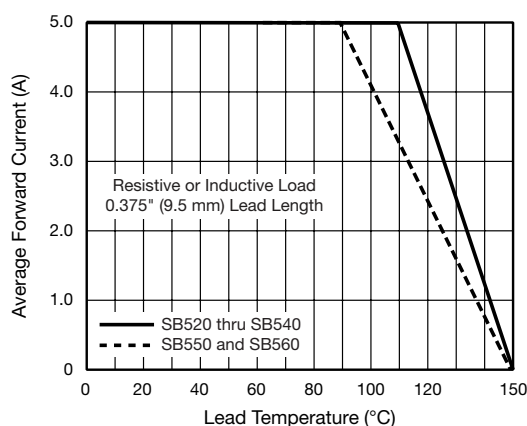


Fig. 1 - Forward Current Derating Curve

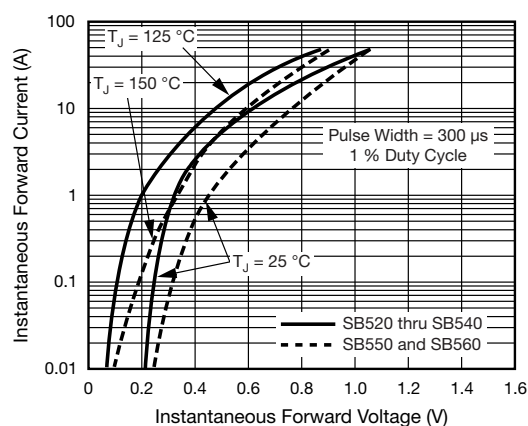


Fig. 3 - Typical Instantaneous Forward Characteristics

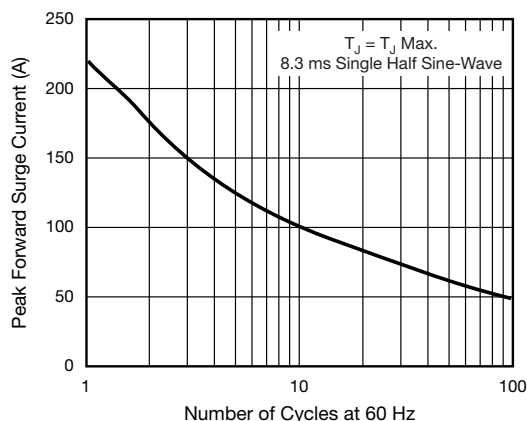


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

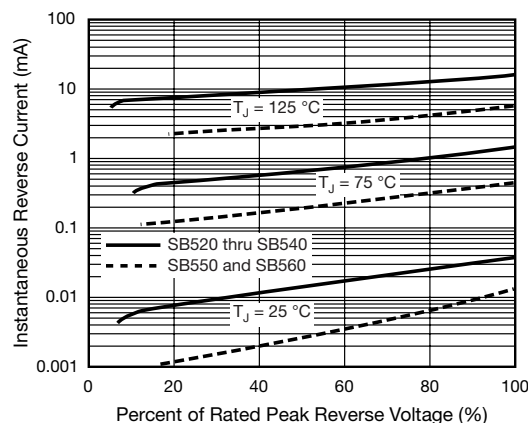


Fig. 4 - Typical Reverse Characteristics

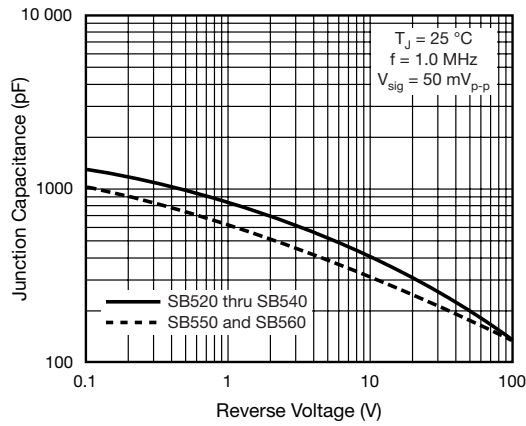


Fig. 5 - Typical Junction Capacitance

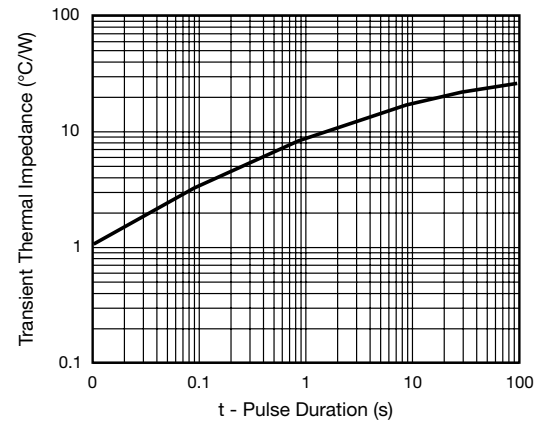
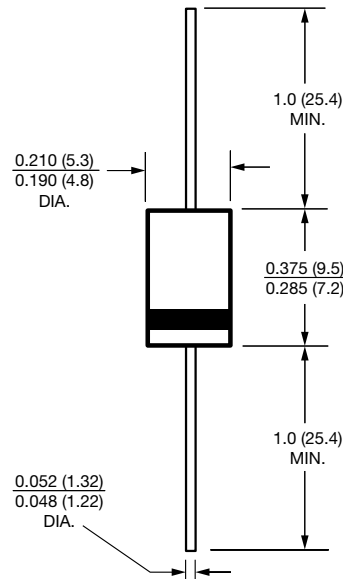


Fig. 6 - Typical Transient Thermal Impedance

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### DO-201AD





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