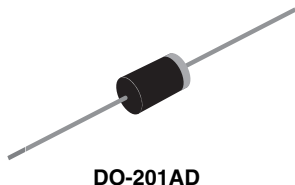


Schottky Barrier Rectifier



FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and 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

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, 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}	150 A
V_F	0.50 V, 0.70 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	SB520A	SB530A	SB540A	SB550A	SB560A	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 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}	150					A
Operating junction temperature range	T_J	- 65 to + 150					°C
Storage temperature range	T_{STG}	- 65 to + 150					°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	SB520A	SB530A	SB540A	SB550A	SB560A	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	5.0 A		V _F	0.50			0.70		V
Maximum reverse current at rated V _R ⁽²⁾		T _A = 25 °C	I _R	0.5					mA
		T _A = 100 °C		50		25			

Notes:

(1) Pulse test: 300 μ s pulse width, 1 % duty cycle

(2) Pulse test: Pulse width $\leq$ 40 ms

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

PARAMETER	SYMBOL	SB520A	SB530A	SB540A	SB550A	SB560A	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$			25			$^{\circ}\text{C/W}$
	$R_{\theta JC}$			10			
	$R_{\theta JL}$			8			

Note:

(1) 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
SB540A-E3/54	1.08	54	1400	13" diameter paper tape and reel
SB540A-E3/73	1.08	73	1000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

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

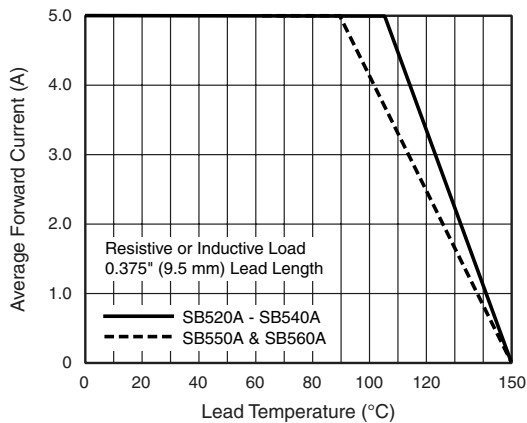


Figure 1. Forward Current Derating Curve

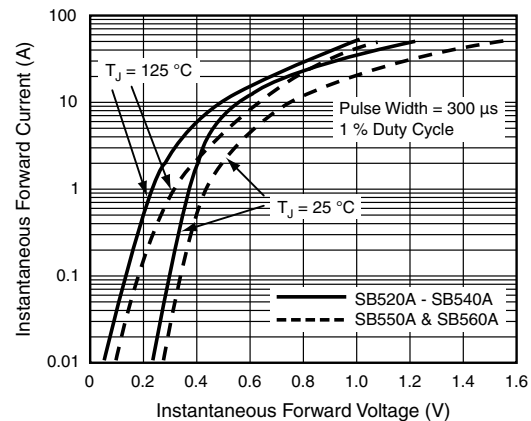


Figure 3. Typical Instantaneous Forward Characteristics

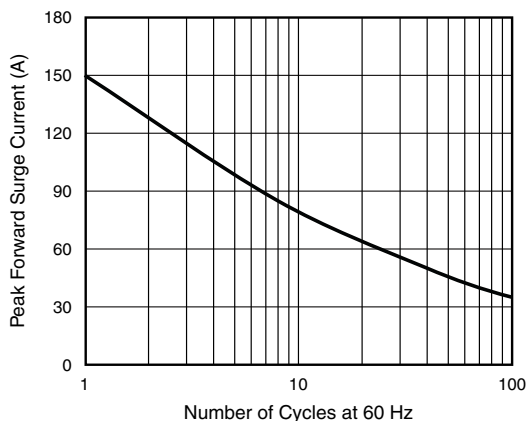


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

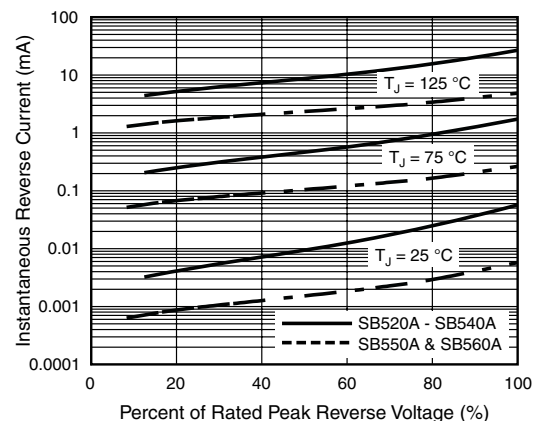


Figure 4. Typical Reverse Characteristics

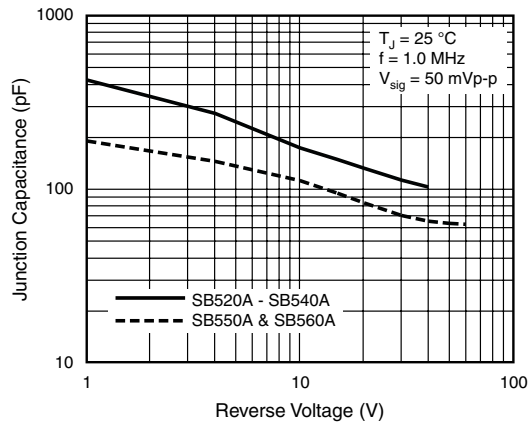


Figure 5. Typical Junction Capacitance

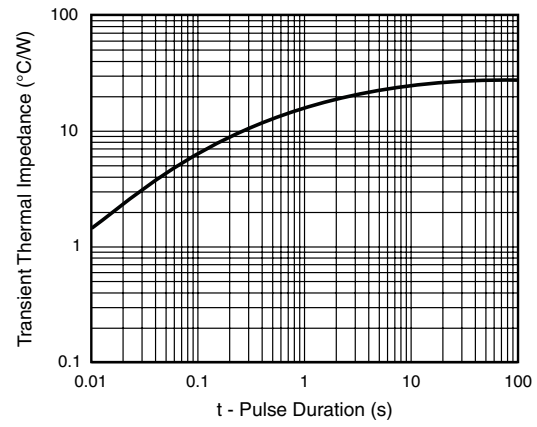
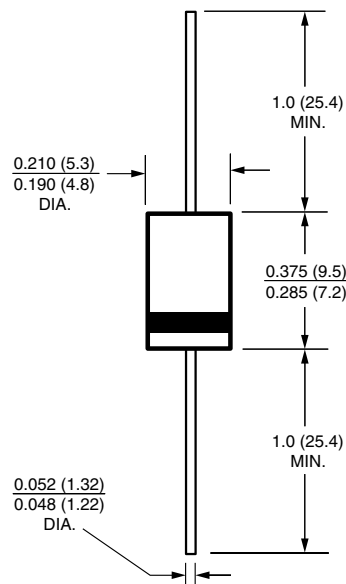


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-201AD





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