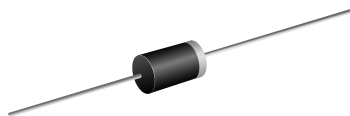


Schottky Barrier Rectifier



DO-204AL (DO-41)

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 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-204AL (DO-41)

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

$I_{F(AV)}$	2.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	50 A
V_F	0.55 V, 0.70 V
T_J max.	125 °C, 150 °C

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

PARAMETER	SYMBOL	SB220S	SB230S	SB240S	SB250S	SB260S	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	50	60	V
Maximum average forward rectified current at 0.375" (9.5 mm) lead length (Fig. 1)	I _{F(AV)}	2.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	50					A
Voltage rate of change (rated V _R)	dV/dt	10 000					V/μs
Operating junction temperature range	T _J	- 65 to + 125			- 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	SB220S	SB230S	SB240S	SB250S	SB260S	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	2.0 A		V _F	0.55			0.70		V
Maximum reverse current at rated V _R ⁽²⁾		T _J = 25 °C	I _R	0.50					mA
		T _J = 125 °C		25			15		

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	SB220S	SB230S	SB240S	SB250S	SB260S	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$			75			$^{\circ}\text{C/W}$
	$R_{\theta JL}$			25			

Note:

(1) Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5 mm) lead length

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB240S-E3/54	0.346	54	5500	13" diameter paper tape and reel
SB240S-E3/73	0.346	73	3000	Ammo pack packaging

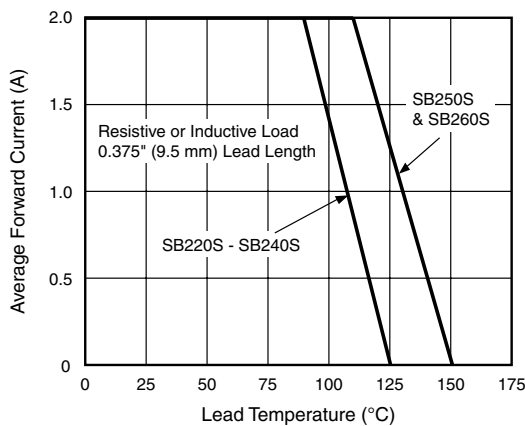
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

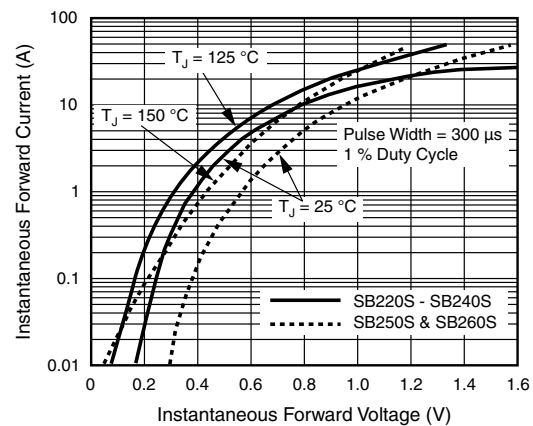


Figure 3. Typical Instantaneous Forward Characteristics

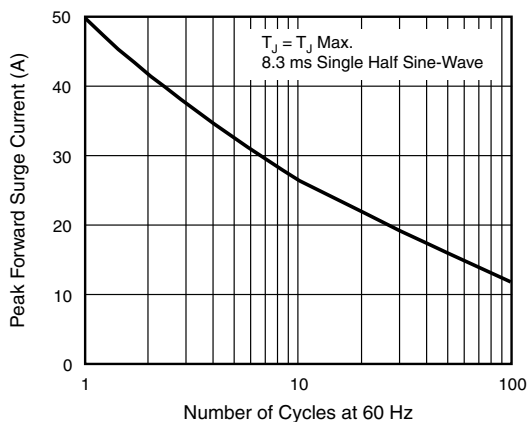


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

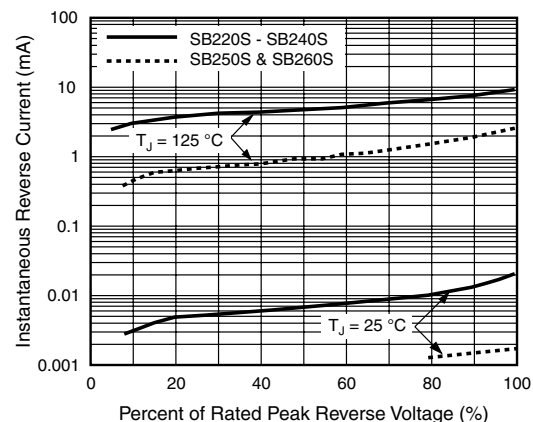


Figure 4. Typical Reverse Characteristics

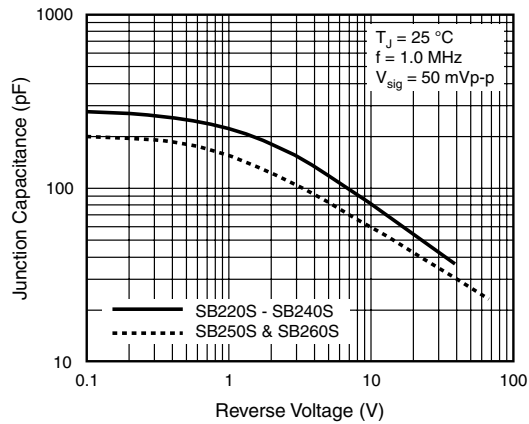
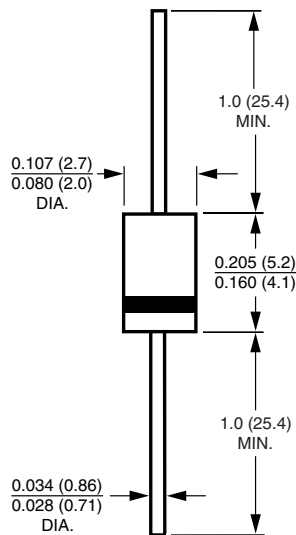


Figure 5. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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