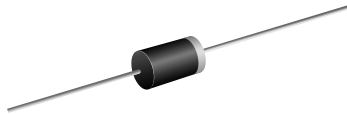




Schottky Barrier Rectifier



DO-204AL (DO-41)

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-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	
$I_{F(AV)}$	1.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	35 A
V_F	0.50 V, 0.70 V
$T_J \text{ max.}$	125 °C, 150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SB120A	SB130A	SB140A	SB150A	SB160A	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)	$I_{F(AV)}$	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	35					A
Voltage rate of change (rated V_R)	dV/dt	10 000					V/ μ s
Operating junction temperature range	T_J	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	T_{STG}	- 65 to + 150					°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SB120A	SB130A	SB140A	SB150A	SB160A	UNIT
Maximum instantaneous forward voltage (1)	1.0 A	V_F	0.5			0.7		V
Maximum reverse current at rated V_R (2)	$T_A = 25\text{ °C}$ $T_A = 100\text{ °C}$	I_R	0.5				5.0	mA
			10					

Notes:

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

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

SB120A thru SB160A

Vishay General Semiconductor



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SB120A	SB130A	SB140A	SB150A	SB160A	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$			100			$^\circ\text{C/W}$
	$R_{\theta JL}$			30			

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
SB140A-E3/54	0.34	54	5500	13" diameter paper tape and reel
SB140A-E3/73	0.34	73	3000	Ammo pack packaging

RATINGS AND CHARACTERISTICS CURVES

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

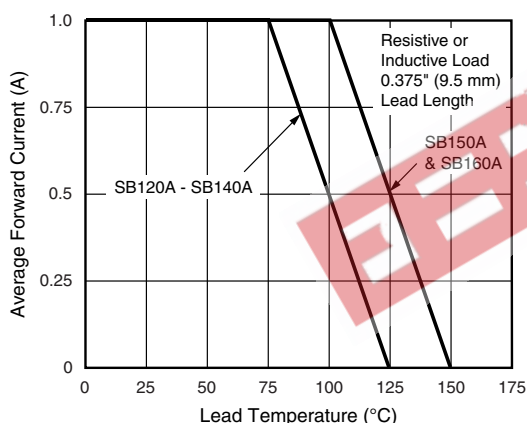


Figure 1. Forward Current Derating Curve

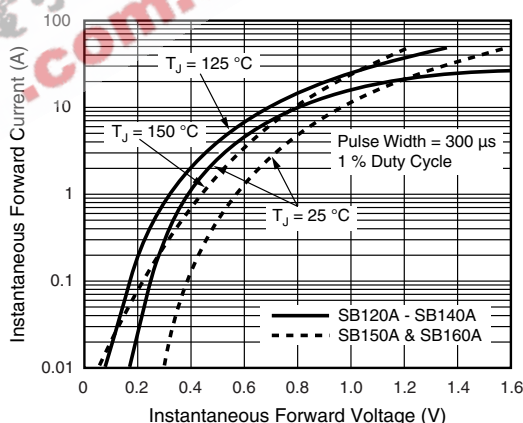


Figure 3. Typical Instantaneous Forward Characteristics

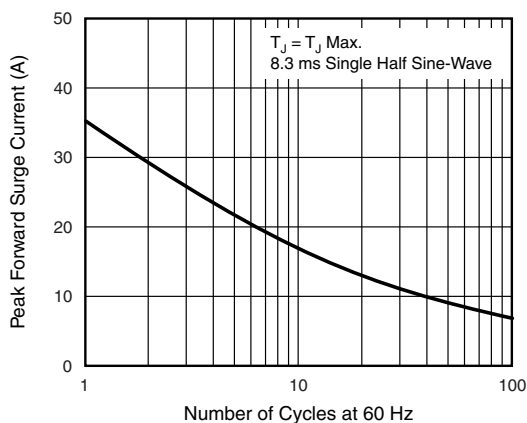


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

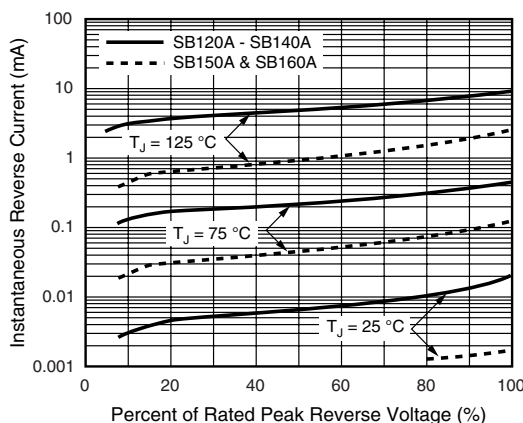


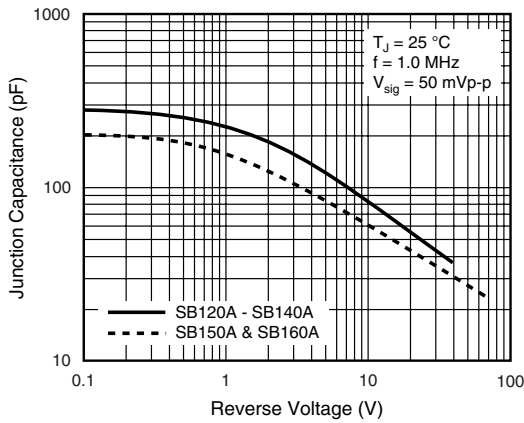
Figure 4. Typical Reverse Characteristics



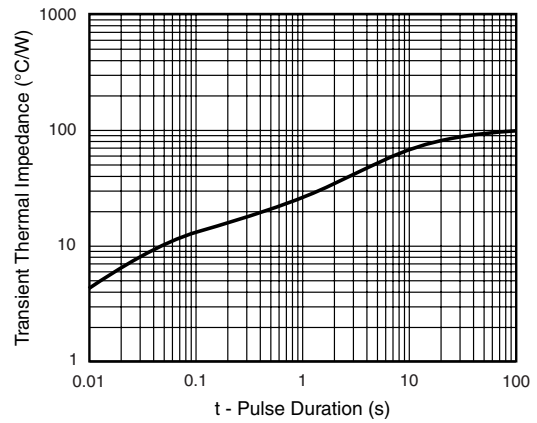
New Product

SB120A thru SB160A

Vishay General Semiconductor



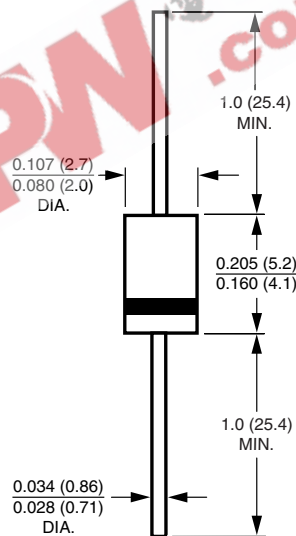
Typical Junction Capacitance



Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





Disclaimer

All product specifications and data are subject to change without notice.

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