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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

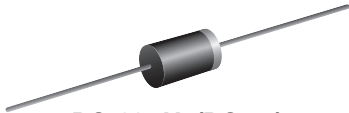
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





## 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 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-204AL (DO-41)

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

$I_{F(AV)}$	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 ( $T_A = 25$  °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/ $\mu$ 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 ( $T_A = 25$  °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	SB120A	SB130A	SB140A	SB150A	SB160A	UNIT
Maximum instantaneous forward voltage	1.0 A	$V_F$ <sup>(1)</sup>	0.5			0.7		V
Maximum reverse current at rated $V_R$	$T_A = 25$ °C	$I_R$ <sup>(2)</sup>	0.5					mA
	$T_A = 100$ °C		10		5.0			

## Notes

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

<sup>(2)</sup> 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	$R_{\theta JA}^{(1)}$	100					$^\circ\text{C/W}$
	$R_{\theta JL}^{(1)}$	30					

**Note**

(1) Thermal resistance from junction to lead 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
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)

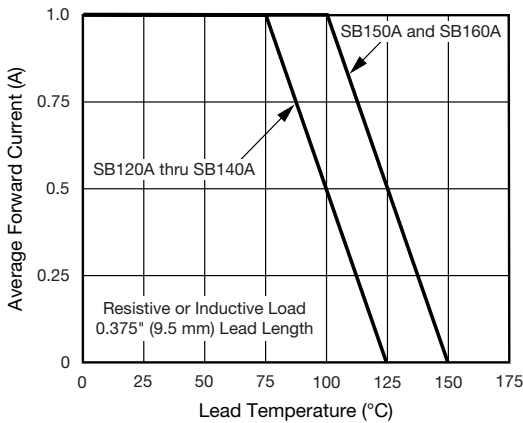


Fig. 1 - Forward Current Derating Curve

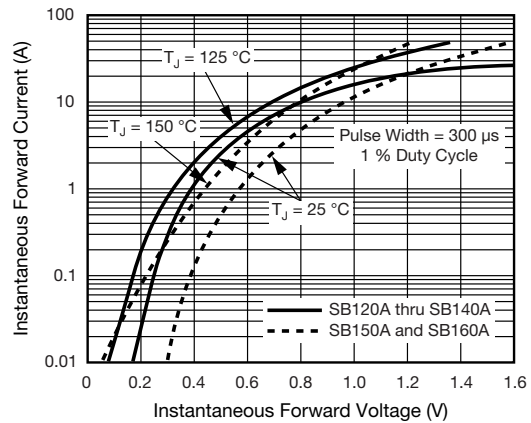


Fig. 3 - Typical Instantaneous Forward Characteristics

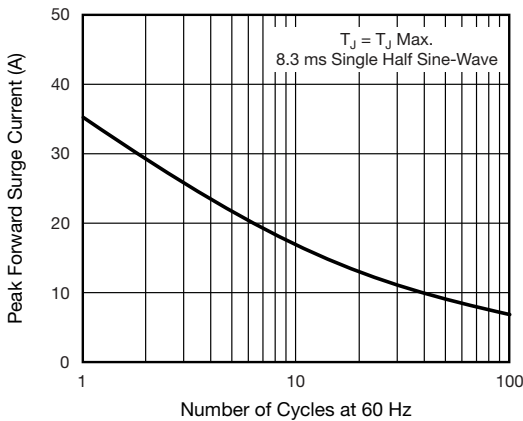


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

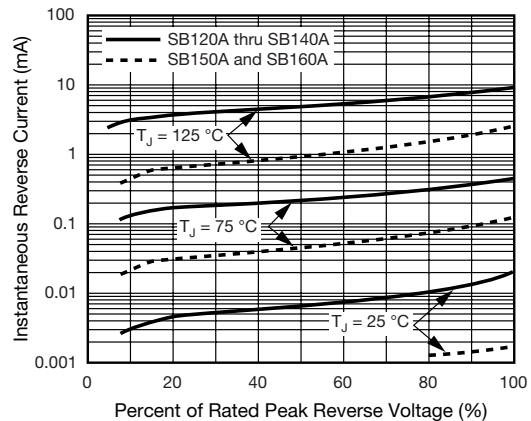


Fig. 4 - Typical Reverse Characteristics



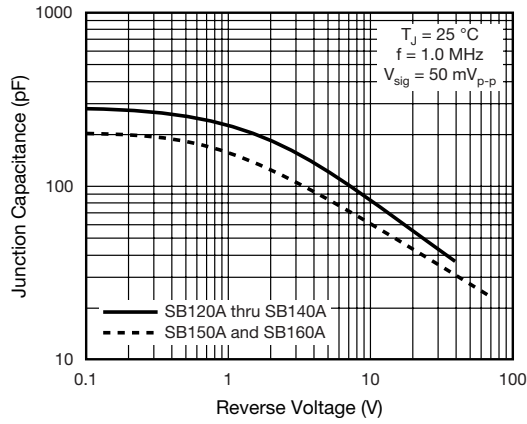


Fig. 5 - Typical Junction Capacitance

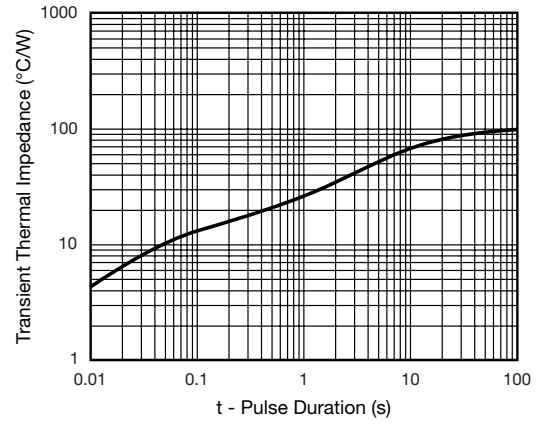
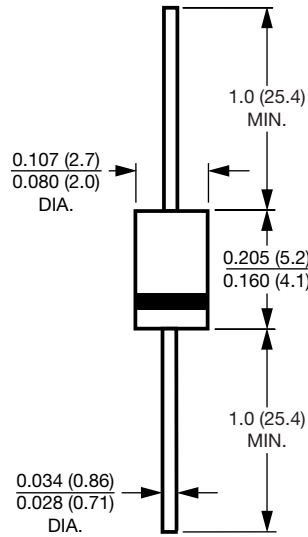


Fig. 6 - Typical Transient Thermal Impedance

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

**DO-204AL (DO-41)**





## Disclaimer

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

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