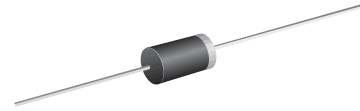


## Schottky Barrier Rectifier

### Major Ratings and 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



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 seconds



### Mechanical Data

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

Epoxy meets UL 94V-0 Flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade

**Polarity:** Color band denotes the cathode end

### Typical Applications

For use in low voltage high frequency inverters, free wheeling, dc-to-dc converters, and polarity protection applications

### Maximum Ratings

$T_A = 25\text{ °C}$  unless otherwise specified

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 (See 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 $V_F$ )	dv/dt	10000					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

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	SB120A	SB130A	SB140A	SB150A	SB160A	Unit
Maximum instantaneous forward voltage	at 1.0 A <sup>(1)</sup>	$V_F$	0.5			0.7		V
Maximum instantaneous reverse current at rated DC blocking voltage <sup>(1)</sup>	$T_A = 25\text{ }^\circ\text{C}$	$I_R$	0.5					mA
	$T_A = 100\text{ }^\circ\text{C}$		10		5.0			

Notes:

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

### Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	SB120A	SB130A	SB140A	SB150A	SB160A	Unit	
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	100						$^\circ\text{C/W}$
	$R_{\theta JL}$	30						

Notes:

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

### Ratings and Characteristics Curves

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

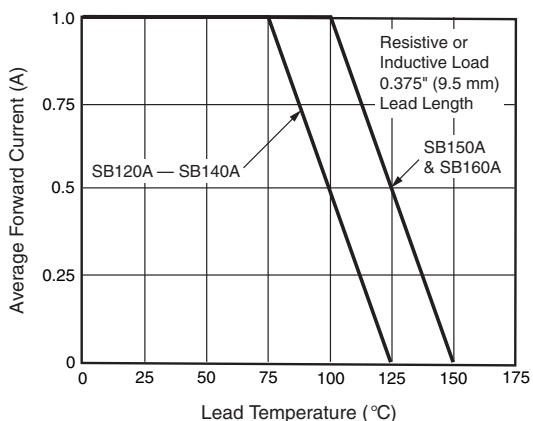


Figure 1. Forward Current Derating Curve

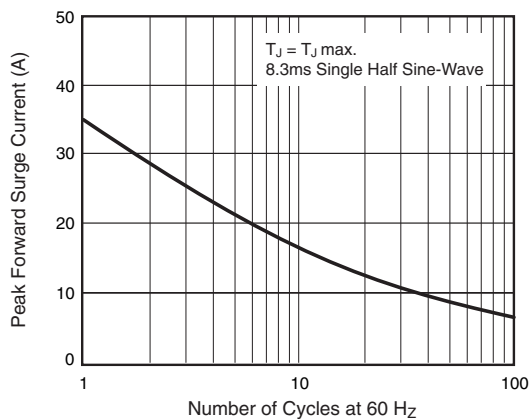


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

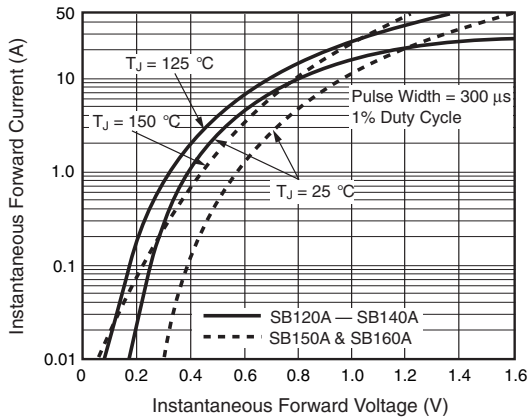


Figure 3. Typical Instantaneous Forward Characteristics

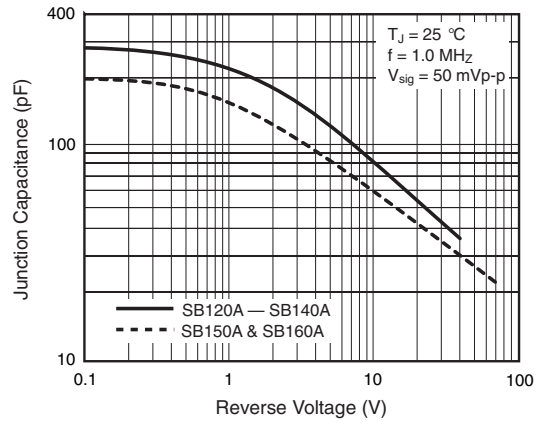


Figure 5. Typical Junction Capacitance

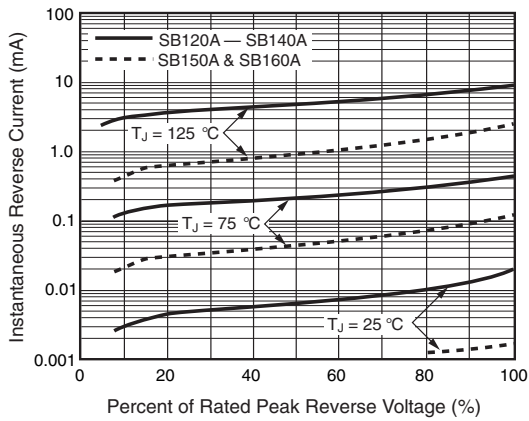


Figure 4. Typical Reverse Characteristics

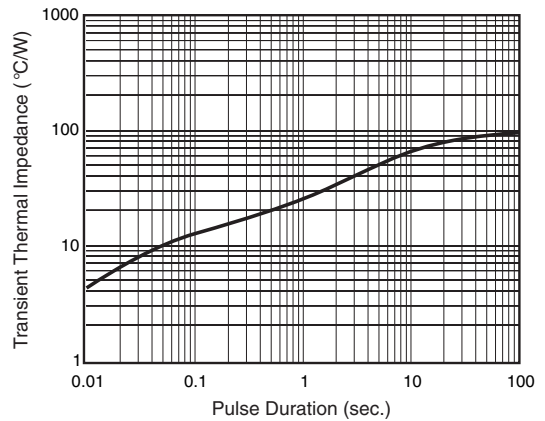
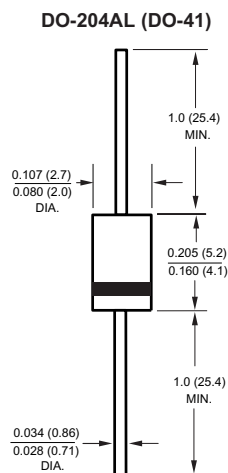


Figure 6. Typical Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)





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