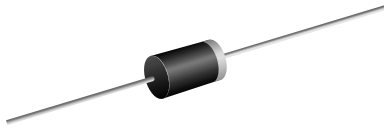


Schottky Barrier Rectifier


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 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, free-wheeling, 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-002B and JESD22-B102D

E3 suffix for commercial grade

Polarity: Color band denotes the cathode end

MAJOR RATINGS AND CHARACTERISTICS

$I_{F(AV)}$	1.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	50 A
V_F	0.48 V, 0.65 V
T_j max.	125 °C, 150 °C

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

PARAMETER	SYMBOL	SB120	SB130	SB140	SB150	SB160	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}	50					A
Voltage rate of change (rated V_R)	dv/dt	10000					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 ($T_A = 25$ °C unless otherwise noted)

PARAMETER	TEST CONDITIONS	SYMBOL	SB120	SB130	SB140	SB150	SB160	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at 1.0 A	V_F	0.48			0.65		V
Maximum instantaneous reverse current at rated DC blocking voltage ⁽¹⁾	$T_A = 25$ °C	I_R	0.50					mA
	$T_A = 100$ °C		10		5.0			

Note:

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



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)							
PARAMETER	SYMBOL	SB120	SB130	SB140	SB150	SB160	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$			50			$^\circ\text{C/W}$
	$R_{\theta JL}$			15			

Note:

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

ORDERING INFORMATION				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB140-E3/54	0.35	54	5500	13" Diameter Paper Tape & Reel
SB140-E3/73	0.35	73	3000	Ammo Pack Packaging

RATINGS AND CHARACTERISTICS CURVES

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

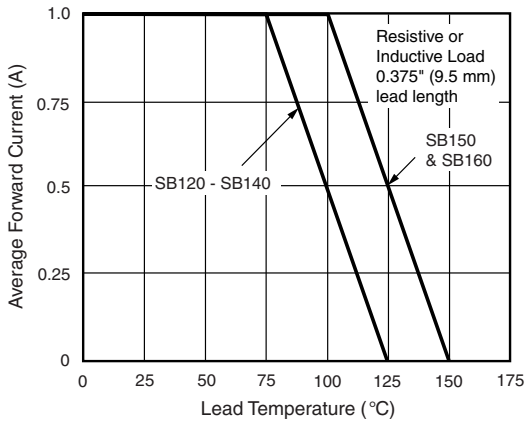


Figure 1. Forward Current Derating Curve

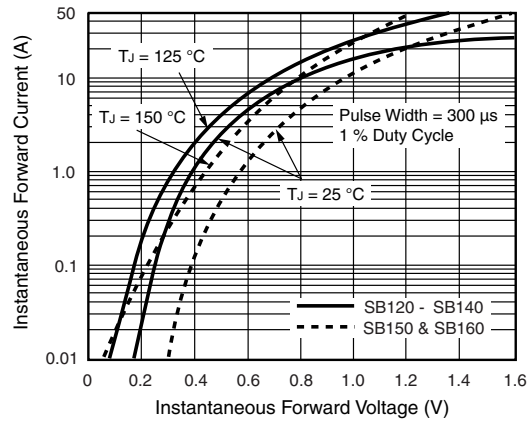


Figure 3. Typical Instantaneous Forward Characteristics

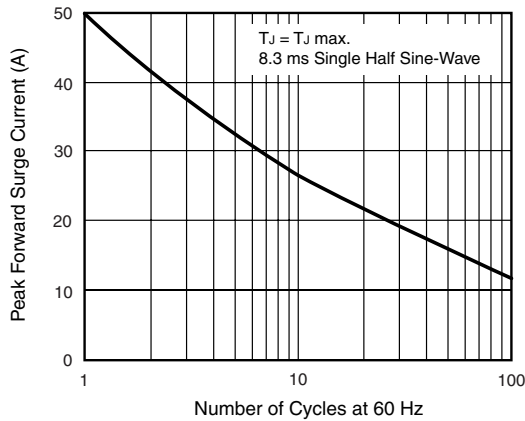


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

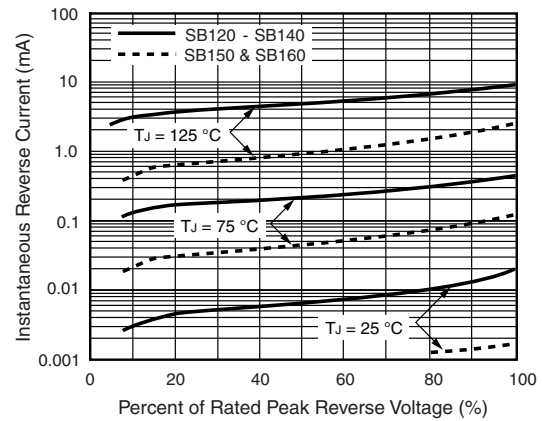


Figure 4. Typical Reverse Characteristics

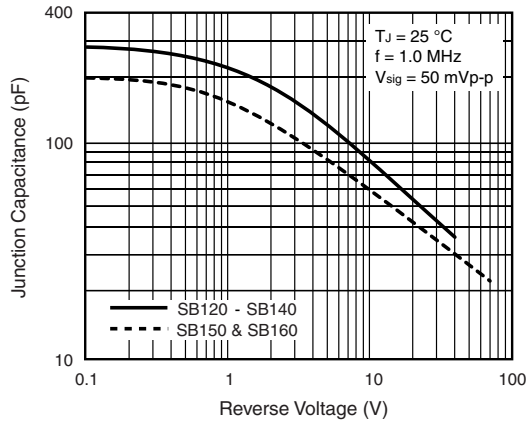


Figure 5. Typical Junction Capacitance

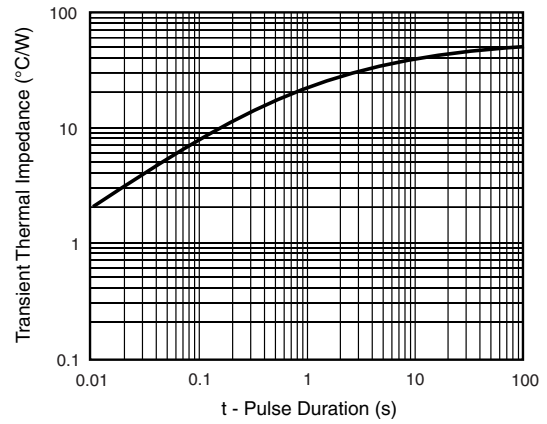
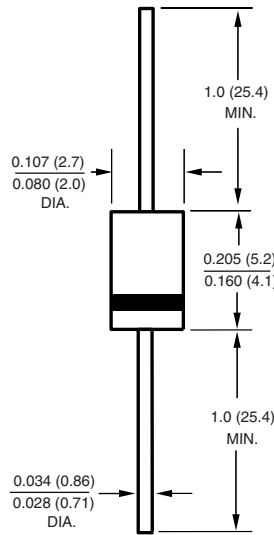


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AL (DO-41)





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