SB120A THRU SB160A

SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 20 to 60 V

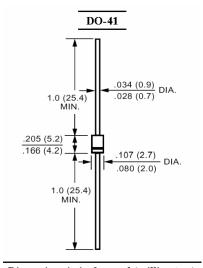
Forward Current - 1 A

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications

Mechanical Data

- Case: Molded plastic, DO-41
- Terminals: Plated axial leads, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any



Dimensions in inches and (millimeters)

Absolute Maximum Ratings and Characteristics (T_A = 25 °C unless otherwise noted)

Parameter	Symbols	SB120A	SB130A	SB140A	SB150A	SB160A	Units
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 0.375" (9.5 mm) Lead Length	I _(AV)	1					Α
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I _{FSM}	35					Α
Maximum Forward Voltage at 1 A ²⁾	V_{F}	0.5			0.7		V
Maximum Reverse Current T _A = 25 °C	I _R	0.5					mA
at Rated DC Blocking Voltage ²⁾ T _A = 100 °C	·ĸ		10		5		, (
Voltage rate of change (rated V _R)	dv/dt	1000					V/µs
Typical Thermal Resistance 1)	$R_{\theta JA}$	100					°C/W
	$R_{ heta JL}$	30					
Operating Junction Temperature Range	TJ	-65 to +125 -65 to +150			°C		
Storage Temperature Range	Ts	-65 to +150					°C

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





²⁾ Pulse test: 300 µs pulse width, 1% duty cycle

Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 1 - Forward Current Derating Curve Resistive or Inductive Load 0.375" (9.5 mm) Average Forward Current (A) Lead Length SB150A & SB160A SB120A — SB140A1 0.5 0.25 25 50 75 175 Lead Temperature (°C)

Fig. 3 - Typical Instantaneous Forward Characteristics

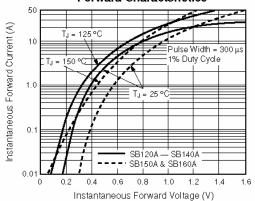


Fig. 5 - Typical Junction Capacitance f = 1.0 MHz $V_{sig} = 50 \text{ mVp}$ Junction Capacitance (pF) 100 SB120A — SB140A SB150A & SB160A SB140A 0.1 100 Reverse Voltage (V)

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

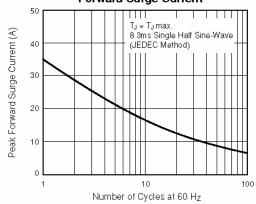


Fig. 4 - Typical Reverse Characteristics

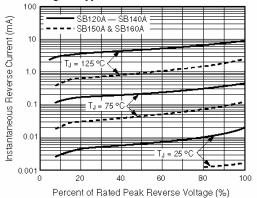
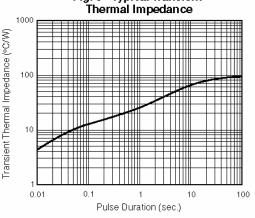


Fig. 6 - Typical Transient Thermal Impedance





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ISO/TS 16949 : 2002 ISO 14001:2004 Certificate No. 05103 Certificate No. 7116