

# SB120 THRU SB160

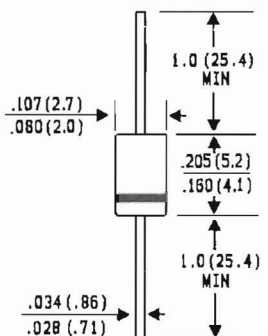
**MINIATURE SCHOTTKY BARRIER RECTIFIER**  
**VOLTAGE RANGE - 20 to 60 Volts    CURRENT - 1.0 Ampere**

## FEATURES

- ◆ Low cost
- ◆ Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- ◆ Metal to silicon rectifier, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ High current capability, low VF
- ◆ High surge capacity
- ◆ Epitaxial construction
- ◆ Guardring for transient protection
- ◆ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆ High temperature soldering guaranteed: 250°C/10 seconds/.375" (9.5mm) lead lengths/5lbs., (2.3kg) tension



**DO-41**



Dimensions in inches  
and  
(millimeters)

## MECHANICAL DATA

**Case:** JEDEC DO-41 Molded Plastic  
**Terminals:** Axial leads, solderable per MIL-STD-202, Method 208  
**Polarity:** Color band denotes cathode  
**Mounting Position:** Any  
**Weight:** 0.012 ounces, .34 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
 Resistive or inductive load.  
 For capacitive load, derate current by 20%.

	SYMBOLS	SB120	SB130	SB140	SB150	SB160	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	20	30	40	50	60	Volts
Maximum RMS Voltage	$V_{RMS}$	14	21	28	35	42	Volts
Maximum DC Blocking Voltage	$V_{DC}$	20	30	40	50	60	Volts
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Length See Fig.1	$I_{(AV)}$	1.0					Amps
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	40.0					Amps
Maximum Instantaneous Forward Voltage at 1.0A (NOTE 2)	$V_F$	0.50			0.70		Volts
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage (NOTE 2) $T_A=25^\circ C$ $T_A=100^\circ C$	$I_R$	0.5					mA
	$I_{R1}$	10.0			5.0		mA
Typical Thermal Resistance (NOTE 1)	$R_{\theta JL}$	15.0					°C/W
Operating Junction Temperature Range	$T_J$	-65 to +125			-65 to +150		°C
Storage Temperature Range	$T_{STG}$	-65 to +150					°C

### NOTES:

1. Thermal Resistance Junction to Lead P.C. Board Mounting .375" (9.5 mm) Lead Lengths.
2. Pulse Test: Pulse Width = 300µs, Duty Cycle=2.0%.

# RATINGS AND CHARACTERISTIC CURVES SB120 THRU SB160

FIG. 1 — FORWARD CURRENT DERATING CURVE

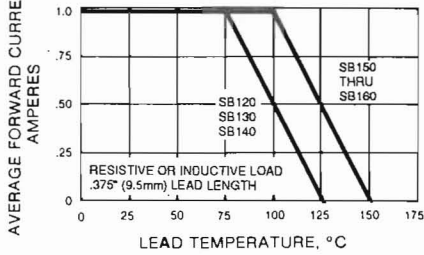


FIG. 2 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

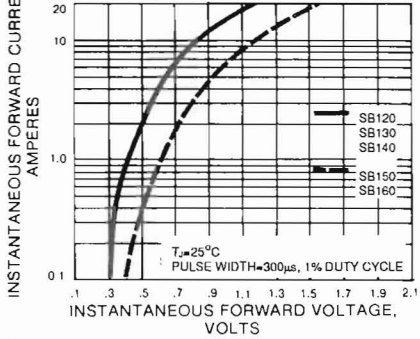


FIG. 3A — TYPICAL REVERSE CHARACTERISTICS

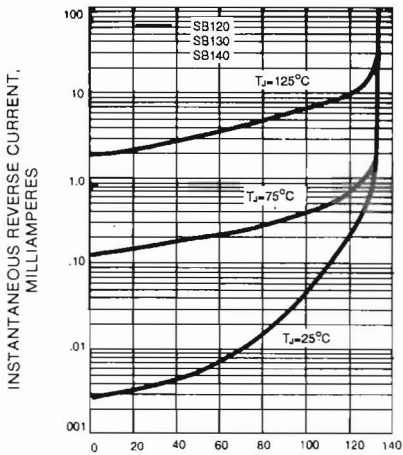


FIG. 3B — TYPICAL REVERSE CHARACTERISTICS

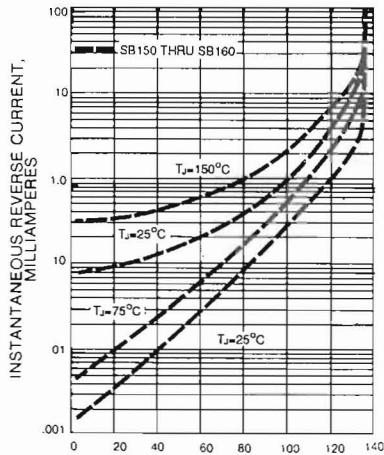


FIG. 4 — TYPICAL JUNCTION CAPACITANCE

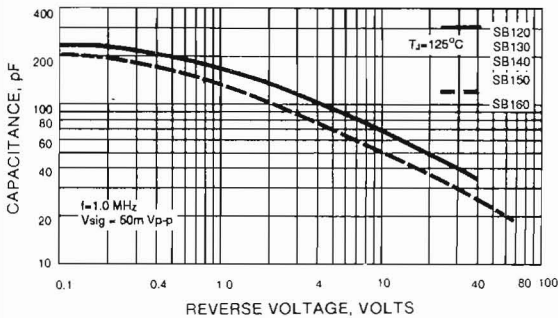


FIG. 5 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

