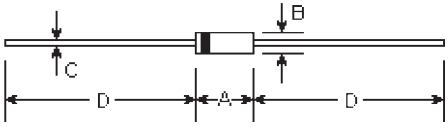
# SB120S THRU SB1B0S

**SCHOTTKY BARRIER RECTIFIER**
**Reverse Voltage -** 20 to 100 Volts
**Forward Current -** 1.0 Ampere

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 utilizing Flame retardant epoxy molding compound
- 1.0 ampere operation at $T_L$=90℃ with no thermal runaway
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

**A-405**




## Mechanical Data

- **Case:** Molded plastic, A-405
- **Terminals:** Axial leads, solderable per MIL-STD-202, method 208
- **Polarity:** Color band denotes cathode
- **Mounting Position:** Any
- **Weight:** 0.008 ounce, 0.22 gram

| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| DIM | inches | | mm | | Note |
| | Min. | Max. | Min. | Max. | |
| A | 0.165 | 0.205 | 4.2 | 5.2 | |
| B | 0.079 | 0.106 | 2.0 | 2.7 | ϕ |
| C | 0.020 | 0.024 | 0.5 | 0.6 | ϕ |
| D | 1.000 | - | 25.40 | - | |

## Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load.

| | Symbols | SB 120S | SB 130S | SB 140S | SB 150S | SB 160S | SB 180S | SB 1B0S | Units |
|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 20 | 30 | 40 | 50 | 60 | 80 | 100 | Volts |
| Maximum RMS voltage | $V_{RMS}$ | 14 | 21 | 28 | 35 | 42 | 56 | 70 | Volts |
| Maximum DC blocking voltage | $V_{DC}$ | 20 | 30 | 40 | 50 | 60 | 80 | 100 | Volts |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_L$=90℃ | $I_{(AV)}$ | 1.0 | | | | | | | Amp |
| Peak forward surge current, $I_{FM}$ (surge): 8.3mS single half sine-wave superimposed on rated load (MIL-STD-750D 4066 method) | $I_{FSM}$ | 30.0 | | | | | | | Amps |
| Maximum forward voltage at 1.0A | $V_F$ | 0.55 | | | 0.70 | | 0.85 | | Volts |
| Maximum full load reverse current, full cycle average at $T_A$=75℃ | $I_{R(AV)}$ | 30.0 | | | | | | | mA |
| Maximum DC reverse current at rated DC blocking voltage $T_A$=25℃ / $T_A$=100℃ | $I_R$ | 1.0<br>10.0 | | | | | | | mA |
| Typical junction capacitance (Note 1) | $C_J$ | 110.0 | | | | | | | ρ F |
| Typical thermal resistance (Note 2) | $R_{\Theta JA}$ | 80.0 | | | | | | | ℃/W |
| Operating and storage temperature range | $T_J$, $T_{STG}$ | -50 to +125 | | | | | | | ℃ |

**Notes:**

(1) Measured at 1.0MHz and applied reverse voltage of 4.0 VDC

(2) Thermal resistance junction to ambient

## RATINGS AND CHARACTERISTIC CURVES

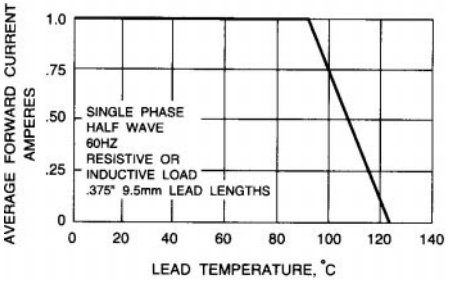



Fig. 1 – FORWARD CURRENT DERATING CURVE

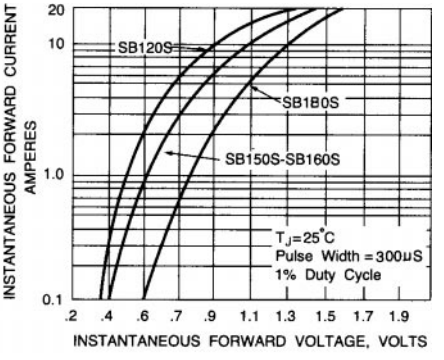



Fig. 2 – TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

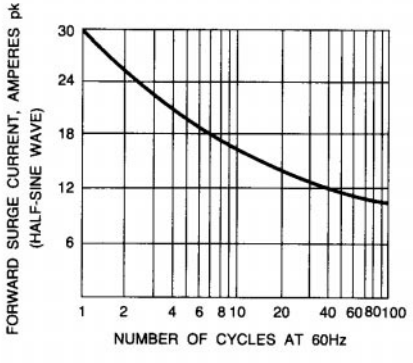



Fig. 3 – MAXIMUM NON-REPETITIVE SURGE CURRENT

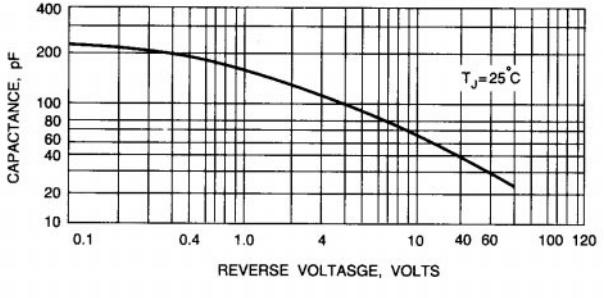



Fig. 4 – TYPICAL JUNCTION CAPACITANCE