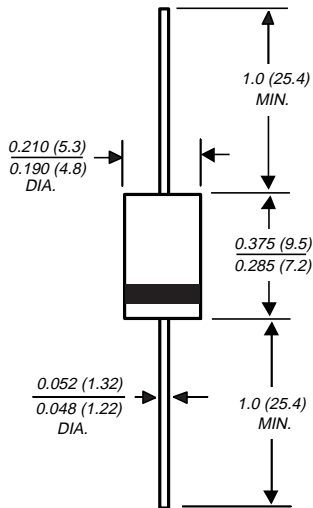


# SB320 THRU SB360

## MEDIUM CURRENT SCHOTTKY BARRIER RECTIFIER

Reverse Voltage - 20 to 60 Volts Forward Current - 3.0 Amperes

### DO-201AD



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ Metal to silicon rectifier, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ High current capability, low  $V_F$
- ◆ 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, 0.375" (9.5mm) lead length, 5 lbs. (2.3 kg) tension



### MECHANICAL DATA

**Case:** JEDEC DO-201AD molded plastic body

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode

**Mounting Position:** Any

**Weight:** 0.04 ounces, 1.12 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|   | SYMBOLS         | SB320       | SB330 | SB340 | SB350       | SB360 | UNITS |
|---|-----------------|-------------|-------|-------|-------------|-------|-------|
| Maximum repetitive 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 at 0.375" (9.5mm) lead length (SEE FIG. 1)  | $I_{(AV)}$      | 3.0         |       |       |             |       | Amps  |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)                             | $I_{FSM}$       | 80.0        |       |       |             |       | Amps  |
| Maximum instantaneous forward voltage at 3.0A (NOTE 1)  | $V_F$           | 0.50        |       |       | 0.74        |       | Volts |
| Maximum instantaneous reverse current at rated DC blocking voltage (NOTE 1) $T_A=25^\circ\text{C}$<br>$T_A=100^\circ\text{C}$ | $I_R$           | 0.5         |       |       |             |       | mA    |
|   |                 | 20.0        |       |       | 10.0        |       |       |
| Typical thermal resistance (NOTE 1)   | $R_{\theta JA}$ | 40.0        |       |       |             |       | °C/W  |
|   | $R_{\theta JL}$ | 10.0        |       |       |             |       |       |
| Operating junction temperature range  | $T_J$           | -65 to +125 |       |       | -65 to +150 |       | °C    |
| Storage temperature range   | $T_{STG}$       | -65 to +150 |       |       |             |       | °C    |

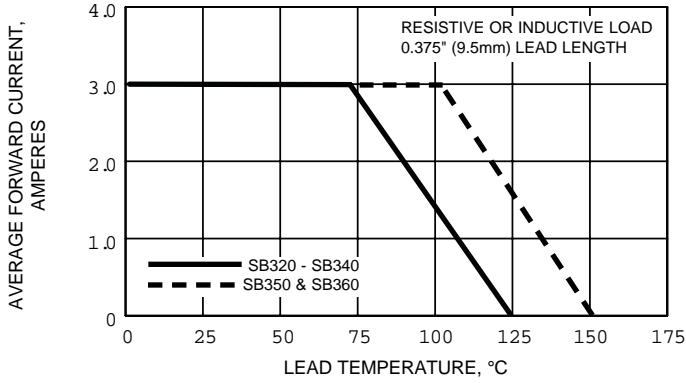
#### NOTES:

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

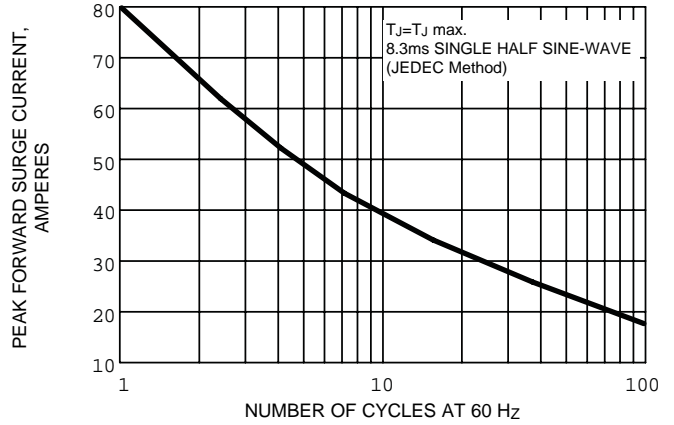
(2) Thermal resistance from junction to lead vertical P.C.B. mounting, 0.500" (12.7mm) lead length with 2.5 x 2.5" (63.5 x 63.5mm) copper pad

# RATINGS AND CHARACTERISTIC CURVES SB320 THRU SB360

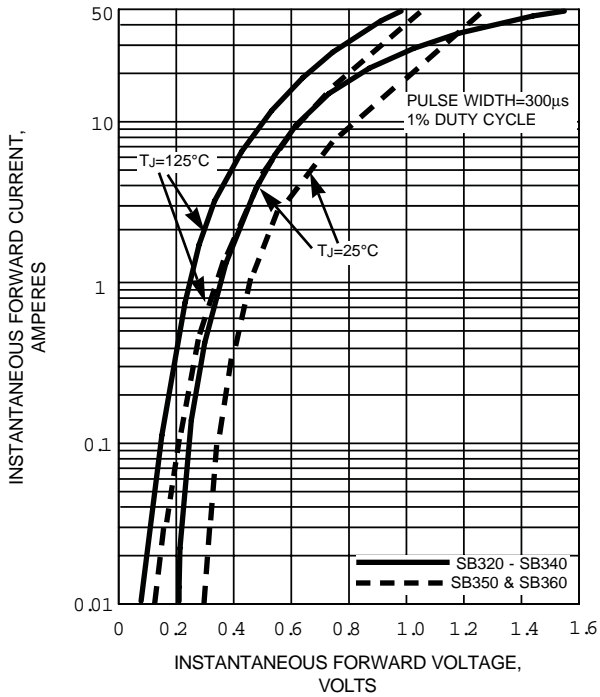
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



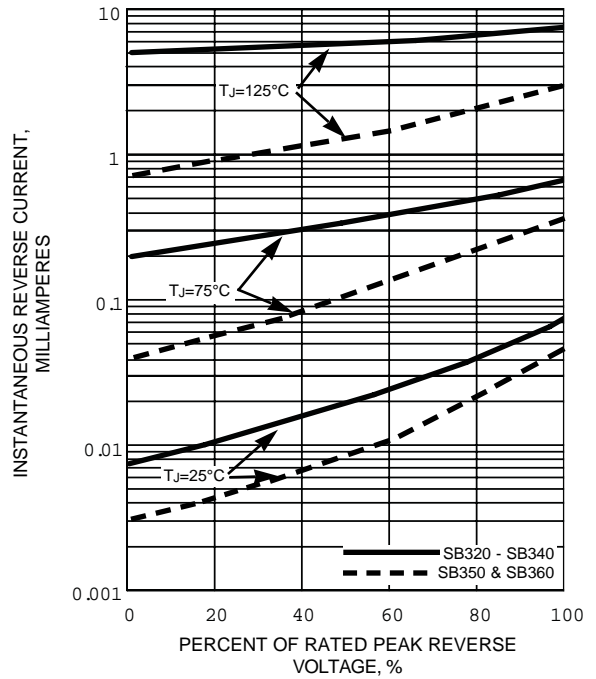
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



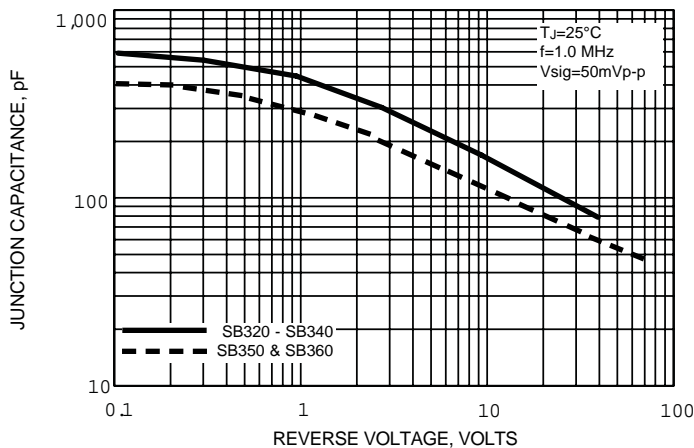
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - TYPICAL JUNCTION CAPACITANCE**



**FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE**

