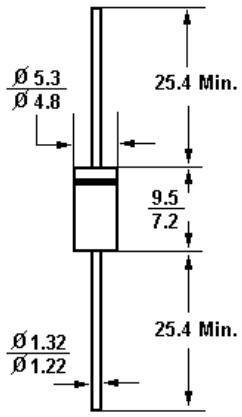
# SB520 THRU SB5A0

## SCHOTTKY BARRIER RECTIFIERS
## Reverse Voltage – 20 to 100 Volts
## Forward Current – 5.0 Amperes

DO-201AD




Dimnsions in mm

### Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed:250℃/10 seconds at terminals, 0.375”(9.5mm)lead length, 5lb.(2.3kg) tension

### Mechanical Data

- **Case:** Molded plastic body, JEDEC DO-201AD.
- **Terminals:** Axial leads, solderable per MIL-STD-750, method 2026
- **Polarity:** Color band denotes cathode end.
- **Mounting Position:** Any

### Absolute Maximum Ratings and Characteristics

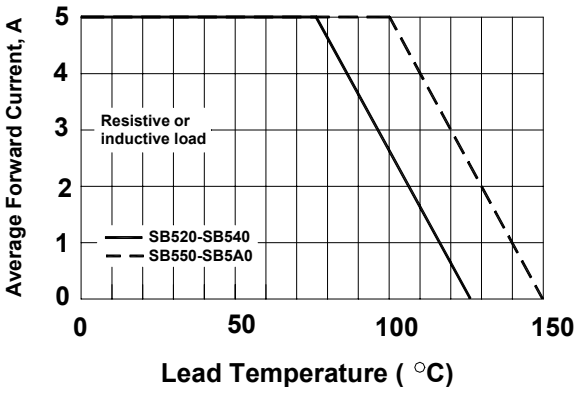
Ratings at 25$^0$C ambient temperature unless otherwise specified. Single phase, half wave, resistive or inductive load. For capacitive load, derate by 20%

| | Symbols | SB 520 | SB 530 | SB 540 | SB 550 | SB 560 | SB 580 | SB 5A0 | Units |
|---|---|---|---|---|---|---|---|---|---|
| Maximum recurrent peak reverse voltage | $V_{RRM}$ | 20 | 30 | 40 | 50 | 60 | 80 | 100 | V |
| Maximum RMS voltage | $V_{RMS}$ | 14 | 21 | 28 | 35 | 42 | 57 | 71 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 20 | 30 | 40 | 50 | 60 | 80 | 100 | V |
| Maximum average forward rectified current 0.375” (9.5mm)lead length | $I_{(AV)}$ | 5.0 | | | | | | | A |
| Peak forward surge current 8.3mS single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 150 | | | | | | | A |
| Maximum instantaneous forward voltage at 5 A (Note 1) | $V_F$ | 0.55 | | | 0.70 | | 0.80 | 0.85 | V |
| Maximum reverse current at rated reverse voltage(Note 1) $T_A$ = 25 $^O$C | $I_R$ | 2.5 | | | | | | | mA |
| $T_A$ = 100$^O$C | | 50 | | | 25 | | | | |
| Typical junction capacitance (Note 2) | $C_{tot}$ | 500 | | | 400 | | | | pF |
| Typical thermal resistance, from junction to ambient(Note 3) | $R_{\theta JA}$ | 25 | | | | | | | $^O$C/W |
| Typical thermal resistance, from junction to lead(Note 3) | $R_{\theta JL}$ | 8.0 | | | | | | | $^O$C/W |
| Operating junction temperature range | $T_J$ | -65 to +125 | | | -65 to +150 | | | | $^O$C |
| storage temperature range | $T_S$ | -65 to +150 | | | | | | | $^O$C |

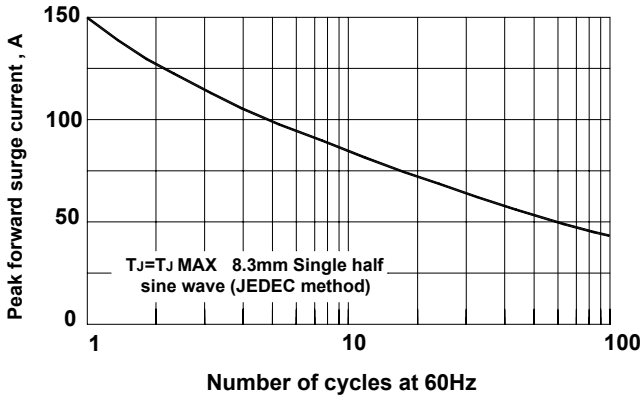
Notes: (1) Pulse test: 300 $\mu$s pulse width, 1% duty cycle
(2) Measured at 1MH$_Z$ and applied reverse voltage of 4 Volts
(3) Thermal Resistance from Junction to lead vertical P.C.B, mounted with 0.375”(9.5mm) lead length

# SB520 THRU SB5A0

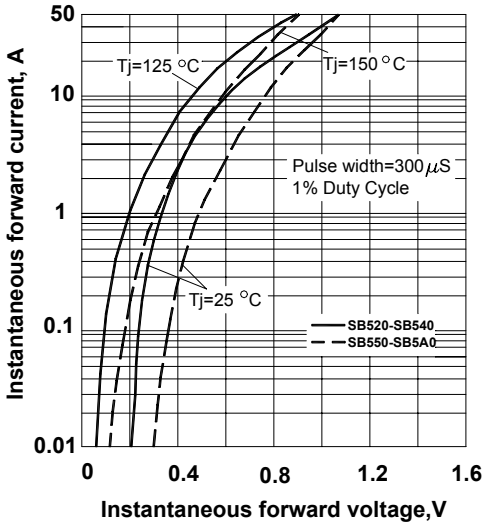
### Forward Current Derating Curve



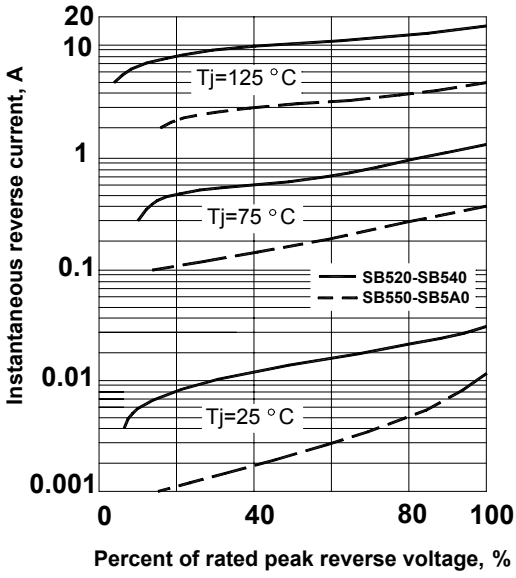

### Maximum non-repetitive peak forward surge current



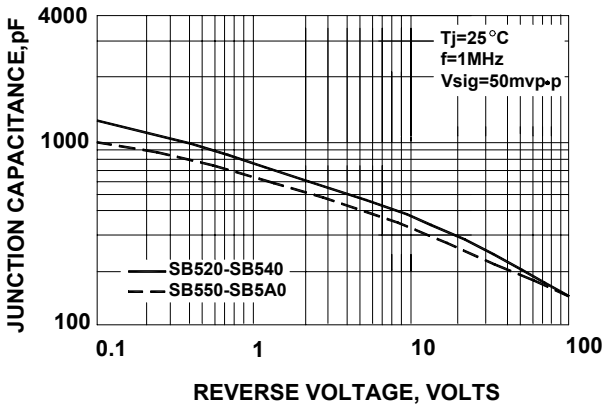

### Typical instantaneous forward characteristics



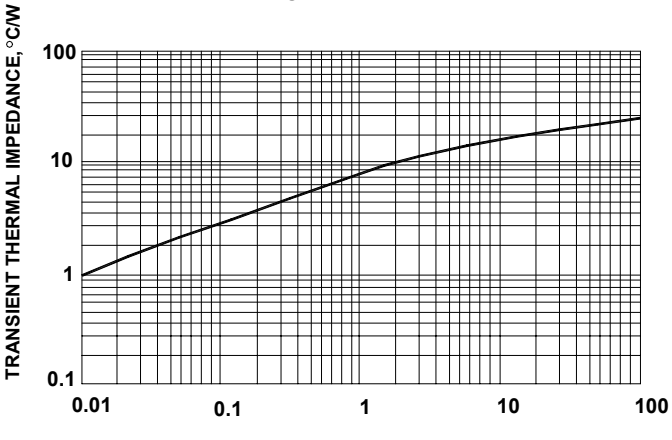

### Typical reverse characteristics




### TYPICAL JUNCTION CAPACITANCE




### TYPICAL TRANSIENT THERMAL IMPEDANCE





**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Semtech International Holdings Limited, acompany listed on the Hong Kong Stock Exchange, Stock Code: 724)




*Dated : 19/05/2003*