




**THE DATASHEET OF  
SB390-T**



## Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 80A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 3)**

## Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Tin. Solderable per MIL-STD-202, Method 208 
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 1.1 grams (approximate)

## Maximum Ratings and Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	SB370	SB380	SB390	SB3100	Unit
Peak Repetitive Reverse Voltage	V <sub>R(RM)</sub>					
Working Peak Reverse Voltage	V <sub>R(WM)</sub>	70	80	90	100	V
DC Blocking Voltage	V <sub>R</sub>					
RMS Reverse Voltage	V <sub>R(RMS)</sub>	49	56	63	70	V
Average Rectified Output Current (Note 1) @ T <sub>L</sub> = 80°C	I <sub>O</sub>	3.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	100				A
Forward Voltage @ I <sub>F</sub> = 3.0A	V <sub>FM</sub>	0.79				V
Peak Reverse Current @ T <sub>A</sub> = 25°C	I <sub>RM</sub>	0.5				mA
at Rated DC Blocking Voltage @ T <sub>A</sub> = 100°C		20				
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	250				pF

## Thermal Characteristics

Characteristic	Symbol	SB370	SB380	SB390	SB3100	Unit
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	20				K/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150				°C

- Notes:
1. Measured at ambient temperature at a distance of 9.5mm from the case.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, See *EU Directive Annex Notes 5 and 7*.

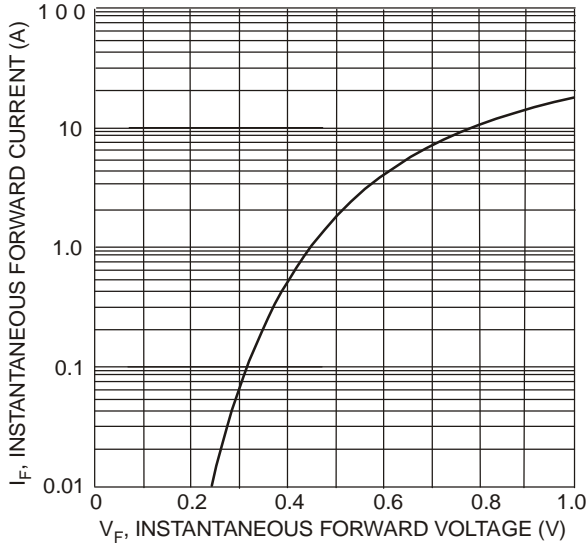


Fig. 1 Typical Forward Characteristics

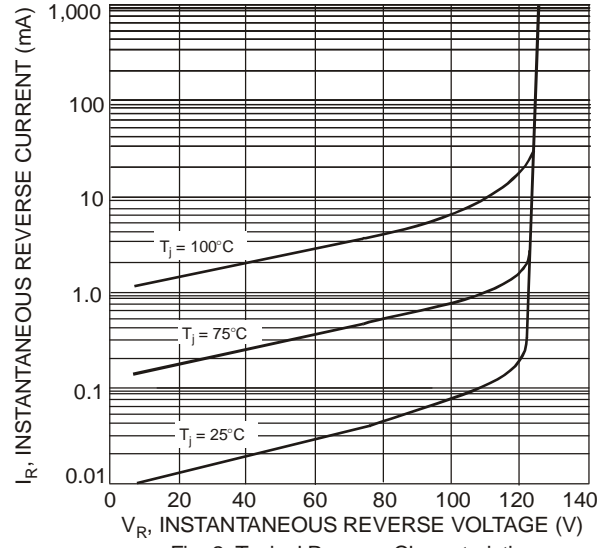


Fig. 2 Typical Reverse Characteristics

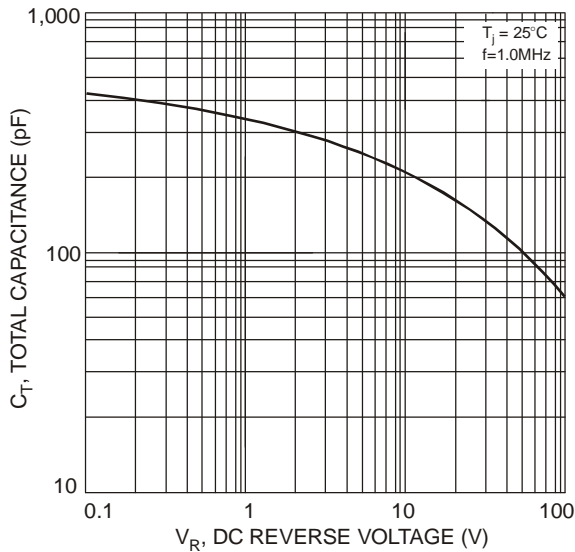


Fig. 3 Total Capacitance vs. Reverse Voltage

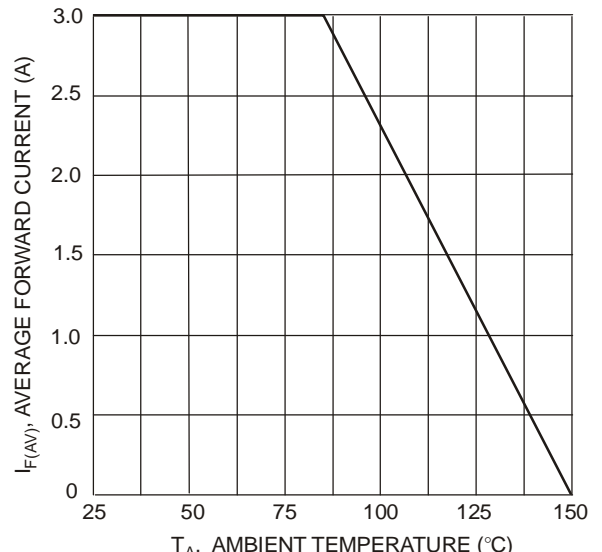


Fig. 4 Forward Current Derating Curve

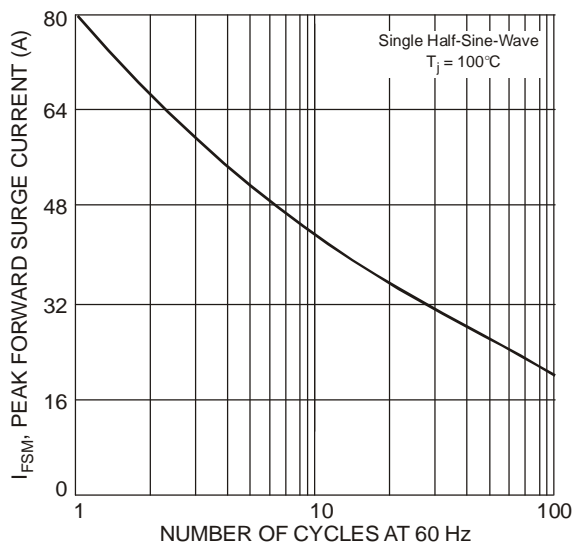


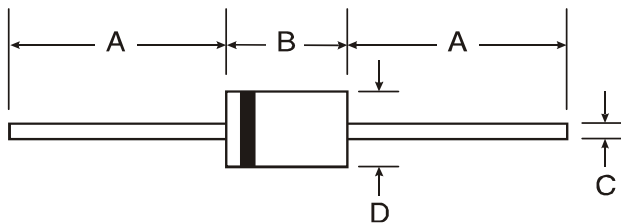
Fig. 5 Max Non-Repetitive Peak Forward Surge Current

### Ordering Information (Note 4)

Part Number	Case	Packaging
SB370-B	DO-201AD	500/Bulk
SB370-T	DO-201AD	1.2K/Tape & Reel, 13-inch
SB380-B	DO-201AD	500/Bulk
SB380-T	DO-201AD	1.2K/Tape & Reel, 13-inch
SB390-B	DO-201AD	500/Bulk
SB390-T	DO-201AD	1.2K/Tape & Reel, 13-inch
SB3100-B	DO-201AD	500/Bulk
SB3100-T	DO-201AD	1.2K/Tape & Reel, 13-inch

Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

### Package Outline Dimensions



DO-201AD		
Dim	Min	Max
A	25.40	—
B	7.20	9.50
C	1.20	1.30
D	4.80	5.30
All Dimensions in mm		

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