

## Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability
- Surge Overload Rating to 150A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

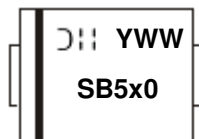
- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Marking: Type Number
- Weight: 1.1 grams (Approximate)

## Ordering Information (Note 3)

Part Number	Case	Packaging
SB570-B	DO-201AD	500/Bulk
SB580-B	DO-201AD	500/Bulk
SB580-T (Note 4)	DO-201AD	1.2K/Tape & Reel, 13 inch
SB590-B	DO-201AD	500/Bulk
SB590-T	DO-201AD	1.2K/Tape & Reel, 13 inch
SB5100-B	DO-201AD	500/Bulk
SB5100-T	DO-201AD	1.2K/Tape & Reel, 13 inch

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. For packaging details, visit our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
  4. SB580-T is not recommended for new design- no alternate part.

## Marking Information



SB5x0 = Product Type Marking Code, ex: SB570  
 }|| = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 0 for 2020)  
 WW = Week Code (01 to 53)

**Maximum Ratings and Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	SB570	SB580	SB590	SB5100	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	70	80	90	100	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	49	56	63	70	V
Average Rectified Output Current @ T <sub>L</sub> = +80°C	I <sub>O</sub>	5.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)	I <sub>FSM</sub>	150				A
Forward Voltage @ I <sub>F</sub> = 5.0A	V <sub>FM</sub>	0.80				V
Peak Reverse Current at Rated DC Blocking Voltage	@ T <sub>A</sub> = +25°C	0.5				mA
	@ T <sub>A</sub> = +100°C	50				
Typical Junction Capacitance (Note 5)	C <sub>J</sub>	400				pF
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	10				°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150				°C

Note: 5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

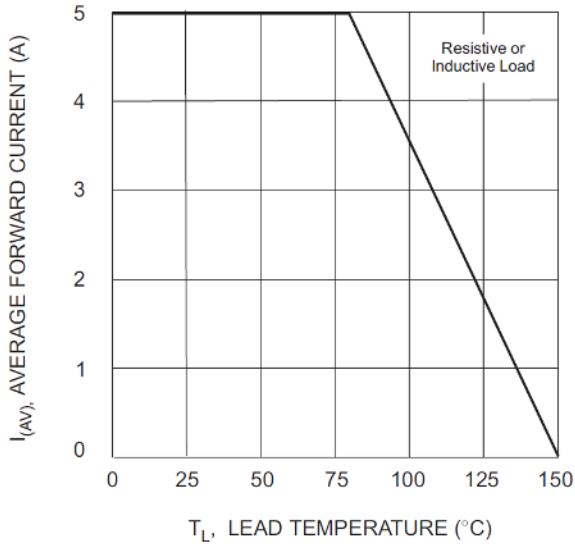


Fig. 1 Forward Current Derating Curve

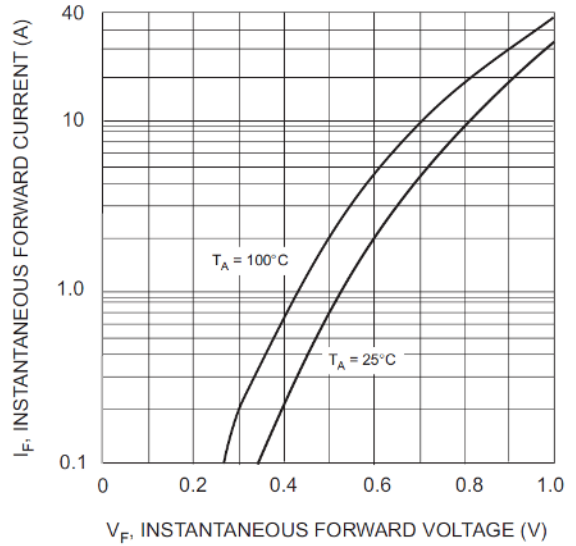


Fig. 2 Typical Forward Characteristics

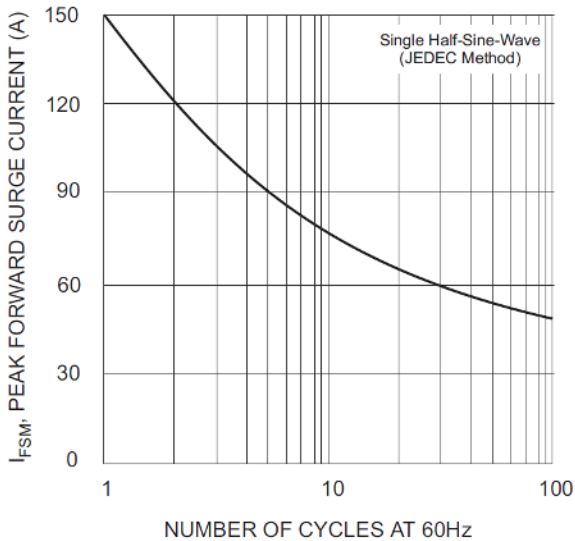


Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

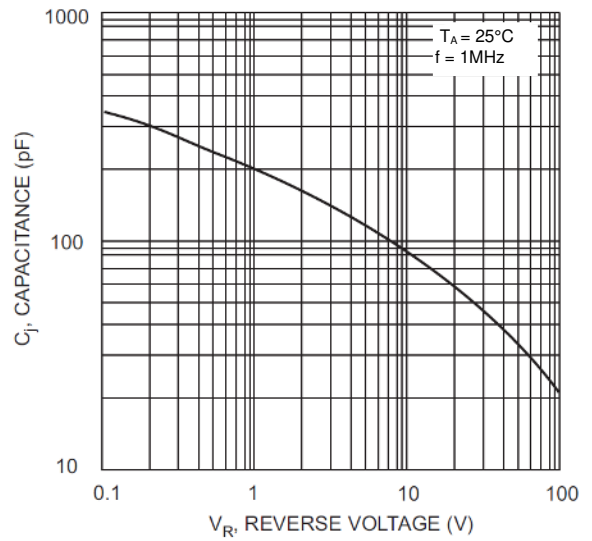


Fig. 4 Typical Junction Capacitance

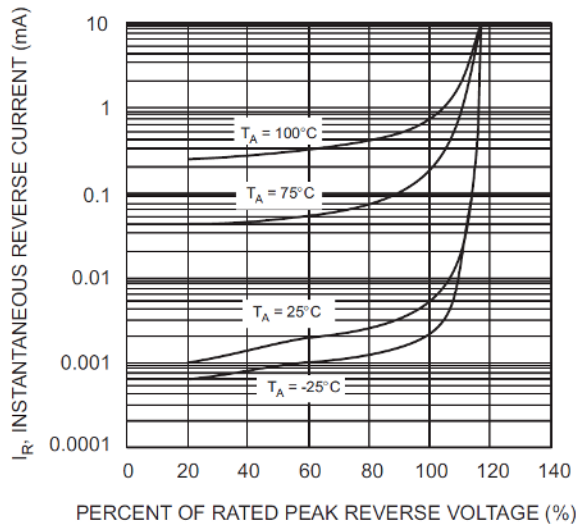
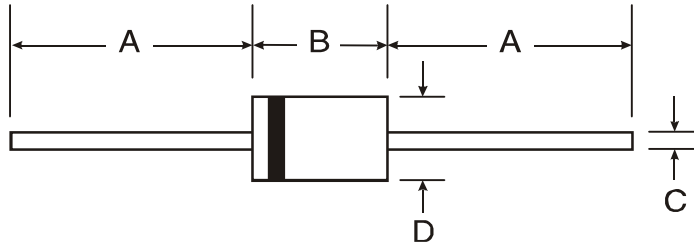


Fig. 5 Typical Reverse Characteristics

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### DO-201AD



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

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