

## Features

- Epitaxial Construction
- 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 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

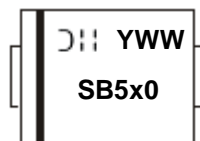
- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Mounting Position: Any
- Marking: Type Number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

## Ordering Information (Note 3)

Part Number	Case	Packaging
SB520-A	DO-201AD	1K/Ammo
SB520-B	DO-201AD	500/Bulk
SB520-T	DO-201AD	1.2K/Tape & Reel, 13 inch
SB530-A	DO-201AD	1K/Ammo
SB530-B	DO-201AD	500/Bulk
SB530-T	DO-201AD	1.2K/Tape & Reel, 13 inch
SB540-B	DO-201AD	500/Bulk
SB540-T	DO-201AD	1.2K/Tape & Reel, 13 inch
SB550-A	DO-201AD	1K/Ammo
SB550-B	DO-201AD	500/Bulk
SB550-T	DO-201AD	1.2K/Tape & Reel, 13 inch
SB560-A	DO-201AD	1K/Ammo
SB560-B	DO-201AD	500/Bulk
SB560-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/>.

## Marking Information



SB5x0 = Product Type Marking Code, ex: SB520  
 DII = 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	SB520	SB530	SB540	SB550	SB560	Unit
Peak Repetitive Reverse Voltage	V <sub>R(RM)</sub>						
Working Peak Reverse Voltage	V <sub>R(WM)</sub>	20	30	40	50	60	V
DC Blocking Voltage	V <sub>R</sub>						
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current (See Figure 1) (Note 4)	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 (Note 5) @ I <sub>F</sub> = 5.0A	V <sub>FM</sub>	0.55		0.67			V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	@ T <sub>A</sub> = +25°C	0.5					mA
	@ T <sub>A</sub> = +100°C	50		25			
Typical Thermal Resistance Junction to Ambient	(Note 4)	25					°C/W
	(Note 6)	8					
Operating Temperature Range	T <sub>J</sub>	-65 to +125		-65 to +150			°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150					

- Notes: 4. Measured at ambient temperature at a distance of 9.5mm from case.  
 5. Short duration test pulse used to minimize self-heating effect.  
 6. Thermal resistance junction to lead vertical P.C.B. mounted, 0.375" (9.5mm) lead length.

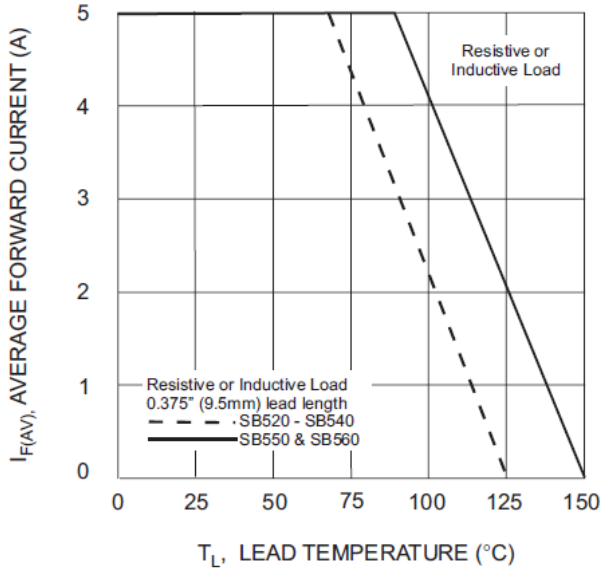


Fig. 1 Forward Current Derating Curve

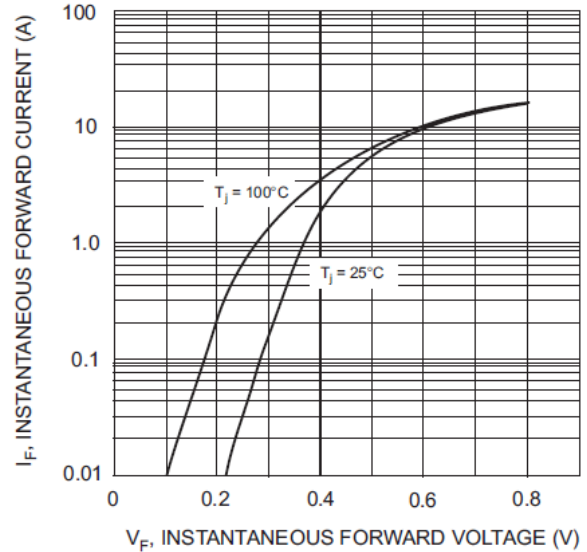


Fig. 2 Typical Forward Characteristics, SB520 - SB540

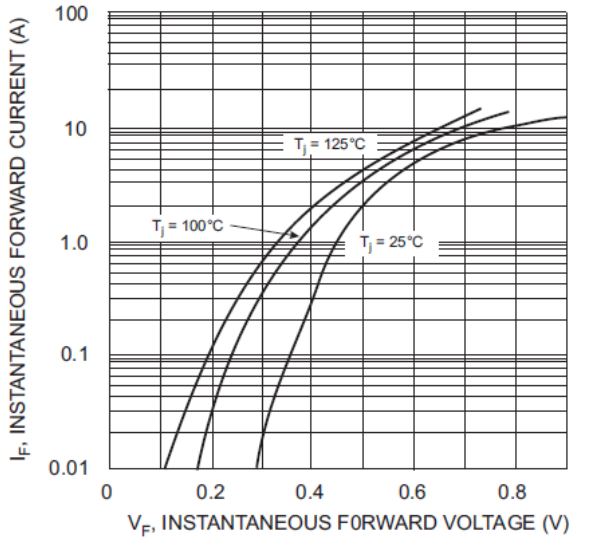


Fig. 3 Typical Forward Characteristics, SB550 & SB560

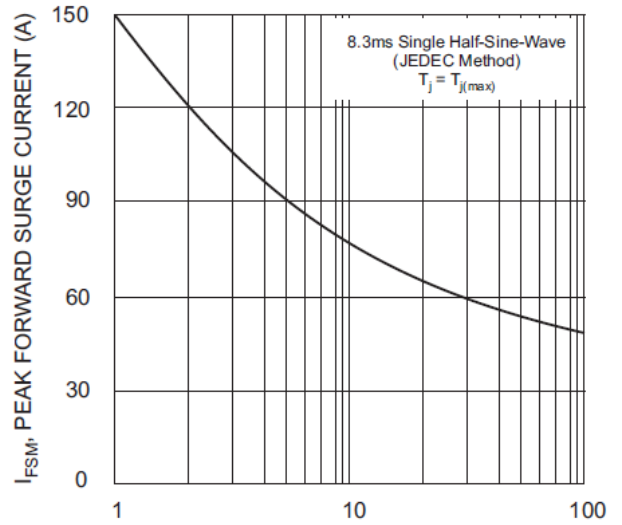


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

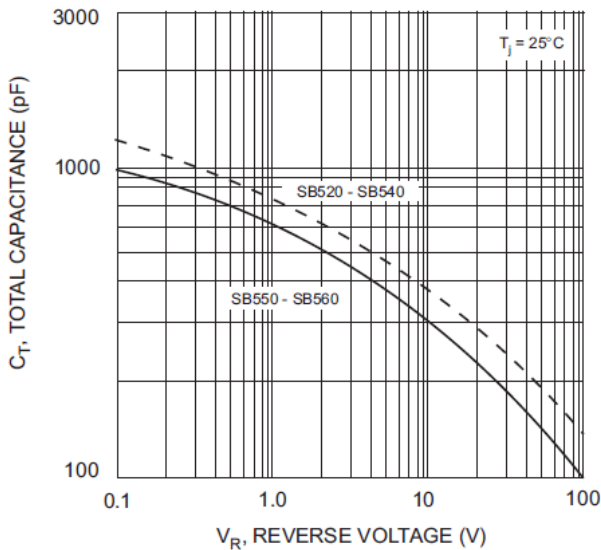


Fig. 5 Typical Total Capacitance

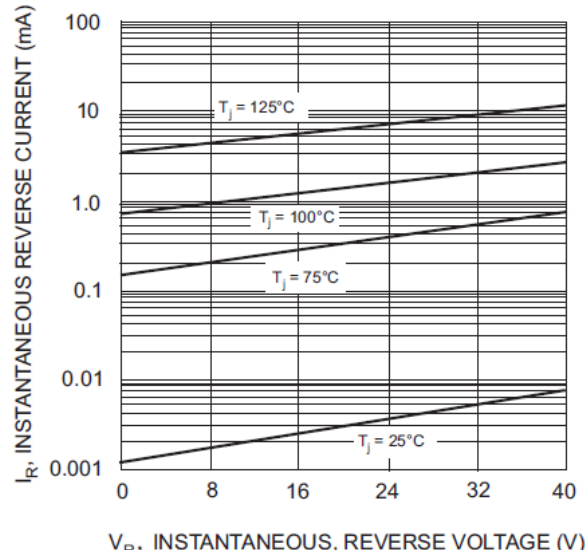


Fig. 6 Typical Reverse Characteristics, SB520 - SB540

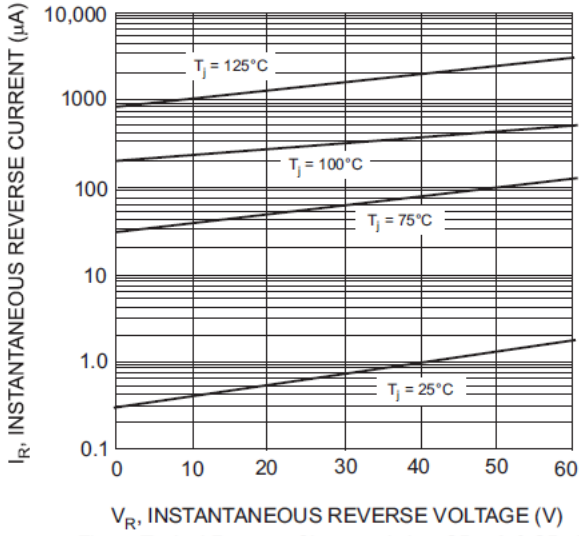
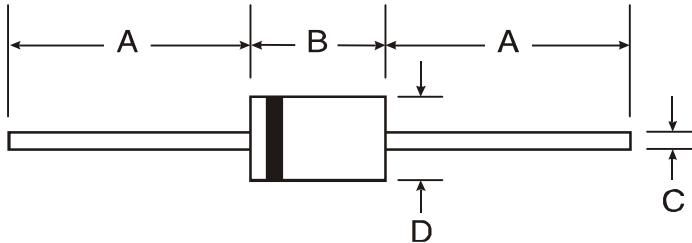


Fig. 7 Typical Reverse Characteristics, SB550 & SB560

## 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
All Dimensions in mm		

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