SB520 - SB560

5.0A SCHOTTKY BARRIER RECTIFIER

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 or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Mechanical Data

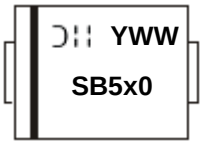
- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Mounting Position: Any
- Marking: Type Number
- 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



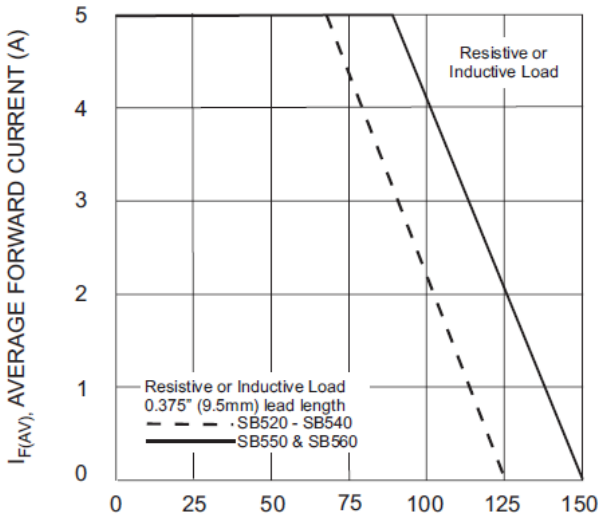
SB5x0 = Product Type Marking Code, ex: SB520
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 0 for 2020)
WW = Week Code (01 to 53)

Maximum Ratings and Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

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

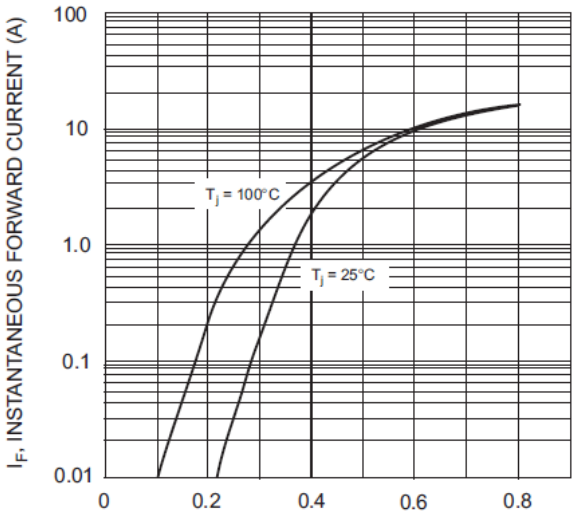
Characteristic		Symbol	SB520	SB530	SB540	SB550	SB560	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	20	30	40	50	60	V
RMS Reverse Voltage		$V_{R(RMS)}$	14	21	28	35	42	V
Average Rectified Output Current (See Figure 1) (Note 4)		I_O	5.0					A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method)		I_{FSM}	150					A
Forward Voltage (Note 5)	@ I_F = 5.0A	V_{FM}	0.55			0.67		V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	@ T_A = +25°C	I_{RM}	0.5					mA
	@ T_A = +100°C		50			25		
Typical Thermal Resistance Junction to Ambient	(Note 4)	$R_{\theta JA}$	25					°C/W
	(Note 6)	$R_{\theta JL}$	8					
Operating Temperature Range		T_J	-65 to +125			-65 to +150		°C
Storage Temperature Range		T_{STG}	-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.



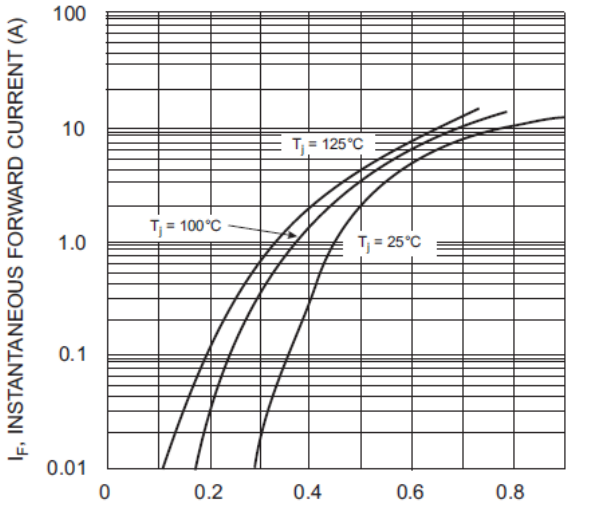
T_L, LEAD TEMPERATURE (°C)

Fig. 1 Forward Current Derating Curve



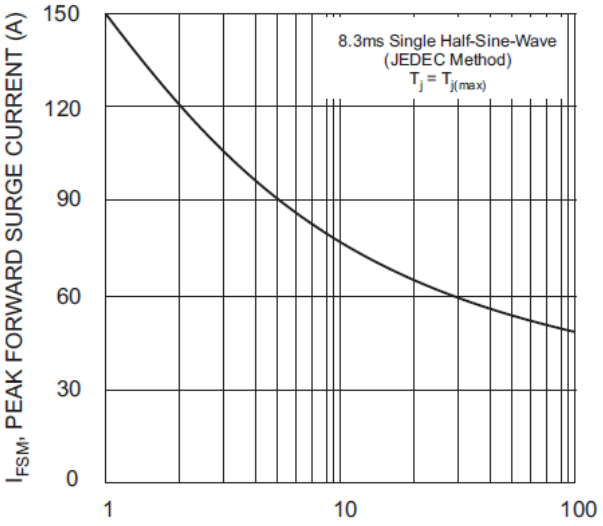
V_F, INSTANTANEOUS FORWARD VOLTAGE (V)

Fig. 2 Typical Forward Characteristics, SB520 - SB540



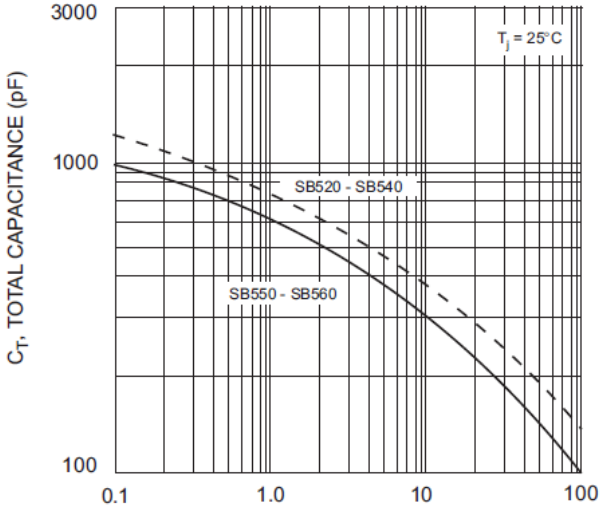
V_F, INSTANTANEOUS F0RWARD VOLTAGE (V)

Fig. 3 Typical Forward Characteristics, SB550 & SB560



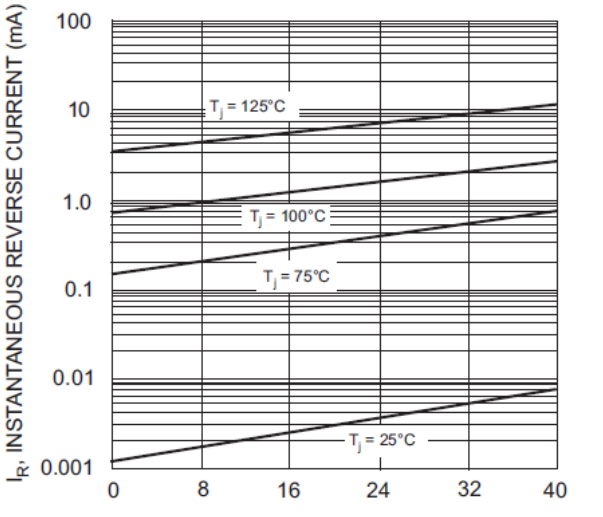
NUMBER OF CYCLES AT 60Hz

Fig. 4 Max Non-Repetitive Peak Fwd Surge Current



V_R, REVERSE VOLTAGE (V)

Fig. 5 Typical Total Capacitance



V_R, INSTANTANEOUS, REVERSE VOLTAGE (V)

Fig. 6 Typical Reverse Characteristics, SB520 - SB540

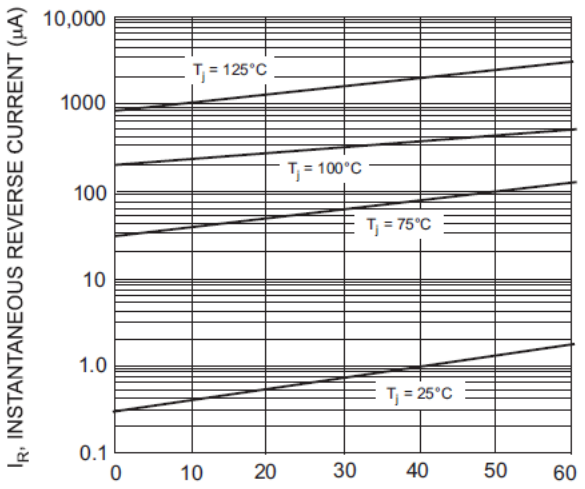
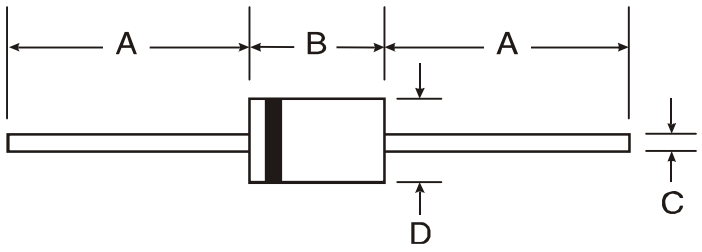


Fig. 7 Typical Reverse Characteristics, SB550 & SB560

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		