

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

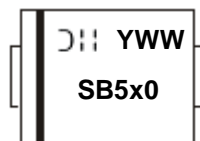
- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Plated Leads Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band
- Mounting Position: Any
- Marking: Type Number
- 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_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 | V _R RRM | | | | | | |
| Working Peak Reverse Voltage | V _R RWM | 20 | 30 | 40 | 50 | 60 | V |
| DC Blocking Voltage | V _R | | | | | | |
| 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 | 0.5 | | | | | mA |
| | @ T _A = +100°C | 50 | | 25 | | | |
| Typical Thermal Resistance Junction to Ambient | (Note 4) | 25 | | | | | °C/W |
| | (Note 6) | 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.

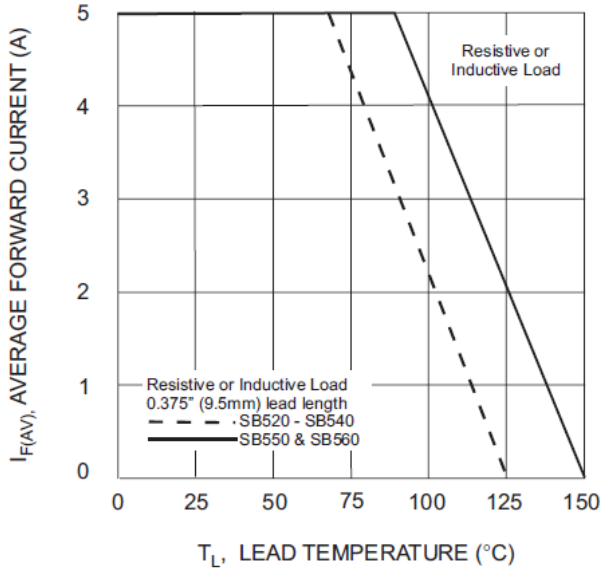


Fig. 1 Forward Current Derating Curve

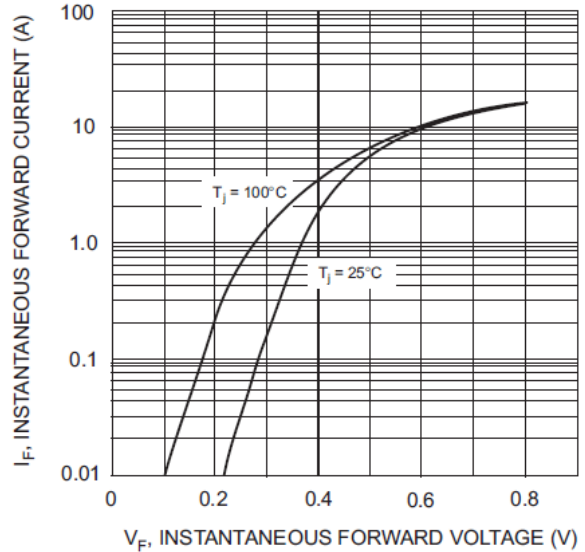


Fig. 2 Typical Forward Characteristics, SB520 - SB540

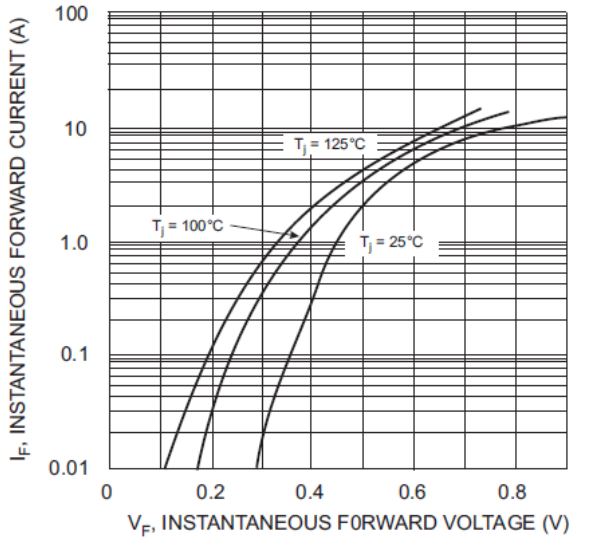


Fig. 3 Typical Forward Characteristics, SB550 & SB560

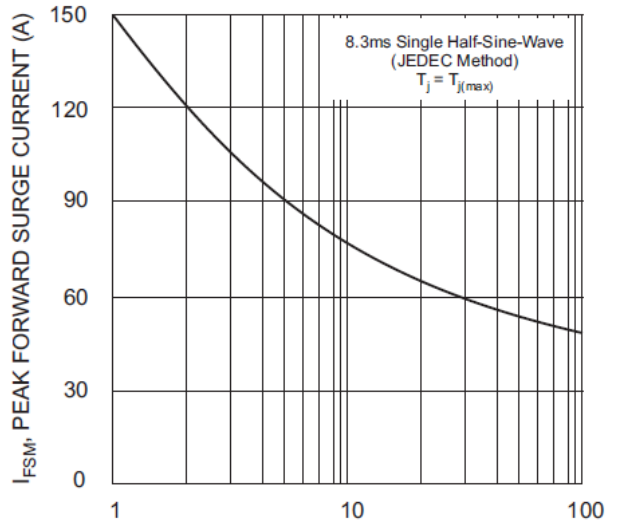


Fig. 4 Max Non-Repetitive Peak Fwd Surge Current

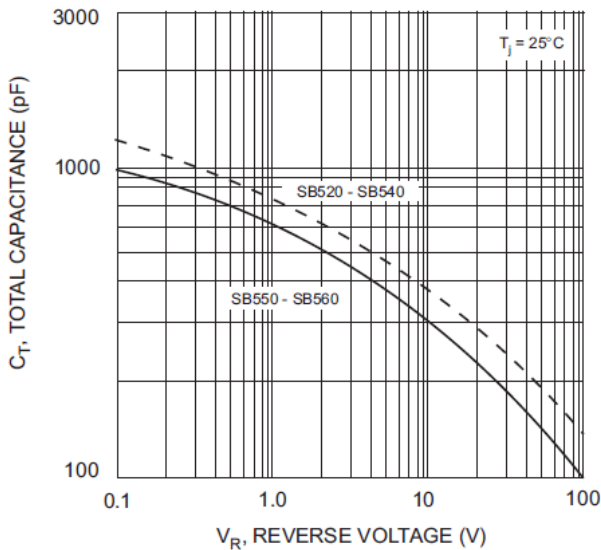


Fig. 5 Typical Total Capacitance

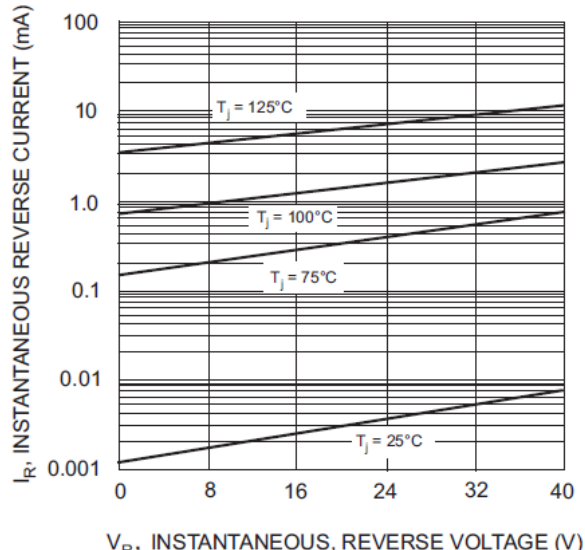


Fig. 6 Typical Reverse Characteristics, SB520 - SB540

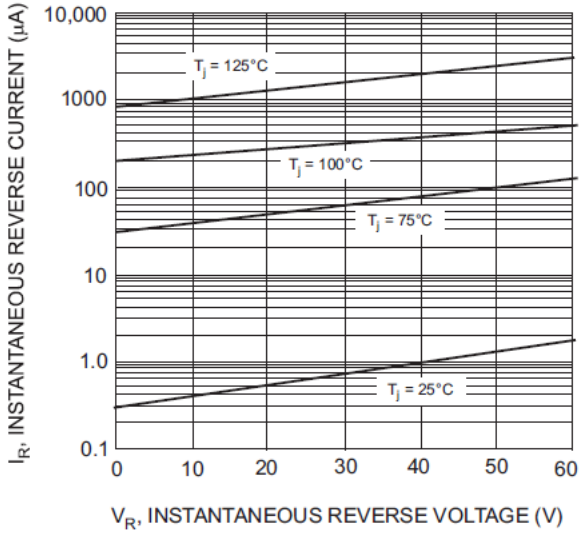
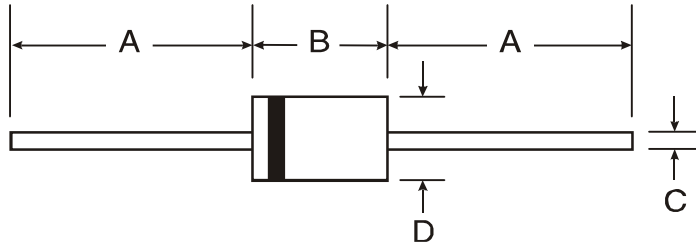


Fig. 7 Typical Reverse Characteristics, SB550 & SB560

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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