

## Features

- 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
- IEC 61000-4-2 (ESD - 150pF/330Ω) Contact - ±15kV
- **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

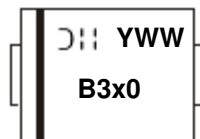
- Case: DO-201AD
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Tin. Solderable per MIL-STD-202, Method 208e3
- Polarity: Cathode Band
- Weight: 1.1 grams (Approximate)

## Ordering Information (Note 3)

| Part Number      | Packaging | Shipping             |
|------------------|-----------|----------------------|
| SB320-B          | DO-201AD  | 500/Bulk             |
| SB320-T          | DO-201AD  | 1200/13" Tape & Reel |
| SB330-B          | DO-201AD  | 500/Bulk             |
| SB330-T (Note 4) | DO-201AD  | 1200/13" Tape & Reel |
| SB340-T          | DO-201AD  | 1200/13" Tape & Reel |
| SB350-B          | DO-201AD  | 500/Bulk             |
| SB350-T (Note 4) | DO-201AD  | 1200/13" Tape & Reel |
| SB360-B          | DO-201AD  | 500/Bulk             |
| SB360-T          | DO-201AD  | 1200/13" Tape & Reel |

- 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, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
  4. NRND: Not recommended for new design.

## Marking Information



B3x0 = Product Type Marking Code, ex: B320  
 ⌋⌋⌋ = Manufacturers' Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 9 for 2019)  
 WW = Week Code (01 to 53)

### Maximum Ratings (@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              | SB320 | SB330 | SB340 | SB350 | SB360 | Unit |
|--|---------------------|-------|-------|-------|-------|-------|------|
| Peak Repetitive Reverse Voltage  | V <sub>RRM</sub>    |       |       |       |       |       |      |
| Working Peak Reverse Voltage   | V <sub>RWM</sub>    | 20    | 30    | 40    | 50    | 60    | V    |
| DC Blocking Voltage (Note 6)   | V <sub>R</sub>      |       |       |       |       |       |      |
| RMS Reverse Voltage  | V <sub>R(RMS)</sub> | 14    | 21    | 28    | 35    | 42    | V    |
| Average Rectified Output Current (Note 5) (See Figure 1)   | 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>    | 80    |       |       |       |       | A    |

### Thermal Characteristics

| Characteristic                      | Symbol           | SB320       | SB330 | SB340 | SB350       | SB360 | Unit |
|-------------------------------------|------------------|-------------|-------|-------|-------------|-------|------|
| Typical Thermal Resistance (Note 7) | R <sub>θJA</sub> | 30          |       |       |             |       | °C/W |
|                                     | R <sub>θJL</sub> | 10          |       |       |             |       | °C/W |
| Operating Temperature Range         | T <sub>J</sub>   | -65 to +125 |       |       | -65 to +150 |       | °C   |
| Storage Temperature Range           | T <sub>STG</sub> | -65 to +150 |       |       |             |       | °C   |

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

| Characteristic  | Symbol          | SB320 | SB330 | SB340 | SB350 | SB360 | Unit |
|---|-----------------|-------|-------|-------|-------|-------|------|
| Forward Voltage @ I <sub>F</sub> = 3.0A                         | V <sub>FM</sub> | 0.50  |       |       | 0.74  |       | V    |
| Peak Reverse Current @ T <sub>A</sub> = +25°C                   | I <sub>RM</sub> | 0.5   |       |       |       |       | mA   |
| at Rated DC Blocking Voltage (Note 6) @ T <sub>A</sub> = +100°C |                 | 20    |       |       | 10    |       |      |

- Notes: 5. Measured at ambient temperature at a distance of 9.5mm from the case.  
6. Short duration pulse test used to minimize self-heating effect.  
7. Thermal resistance from junction to lead vertical P.C.B. mounted, 0.500" (12.7mm) lead length with 2.5" × 2.5" (63.5mm × 63.5mm) copper pad.

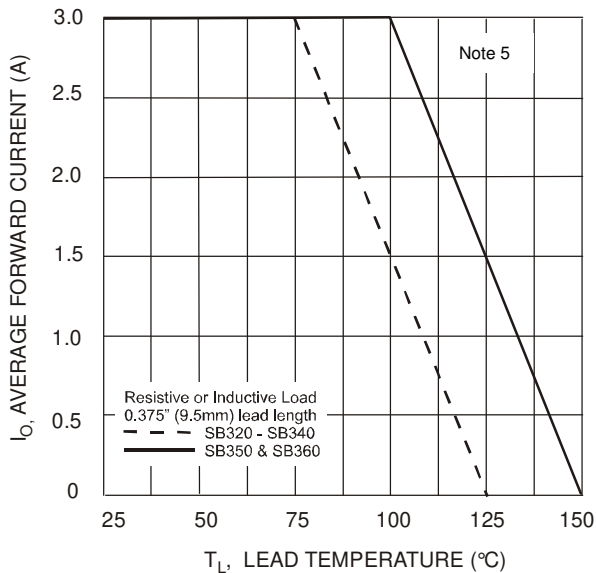


Fig. 1 Forward Current Derating Curve

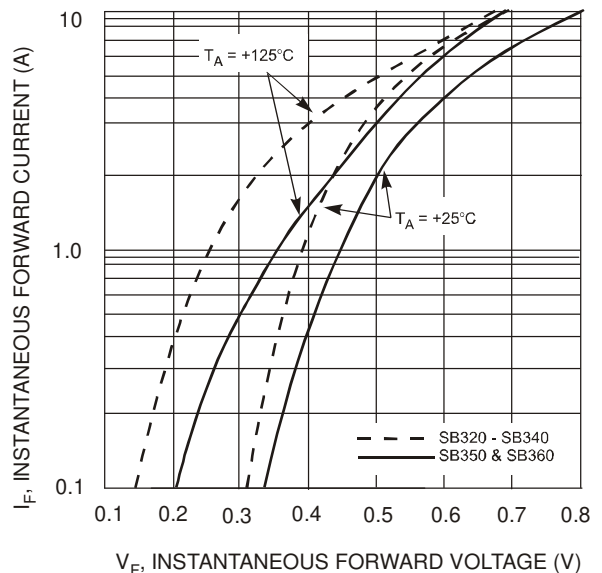


Fig. 2 Typical Forward Characteristics

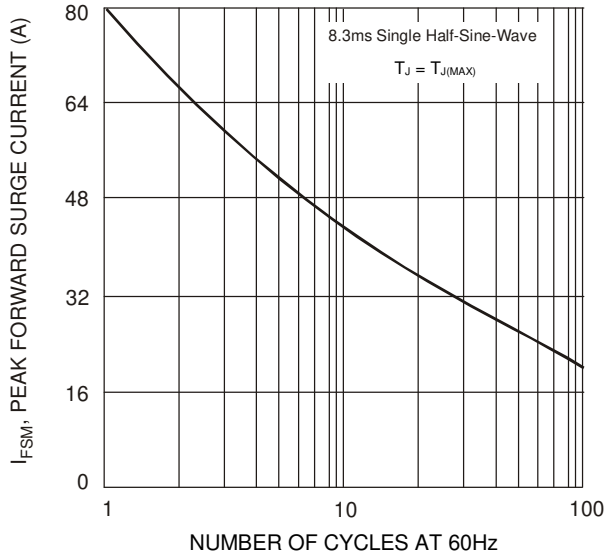


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

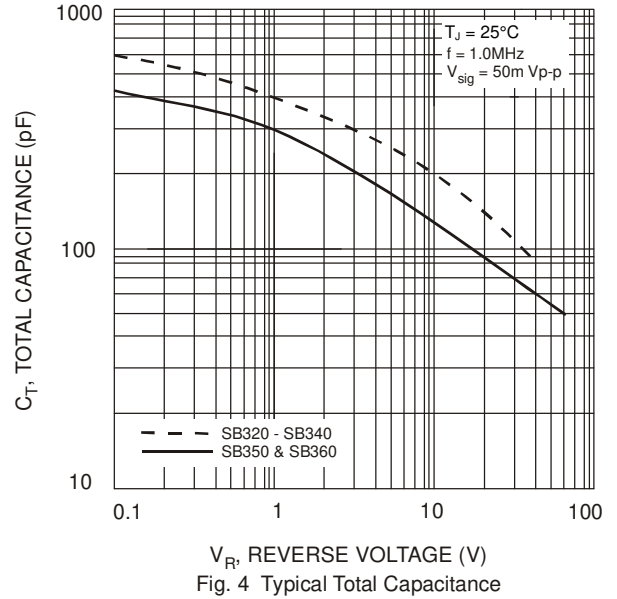


Fig. 4 Typical Total Capacitance

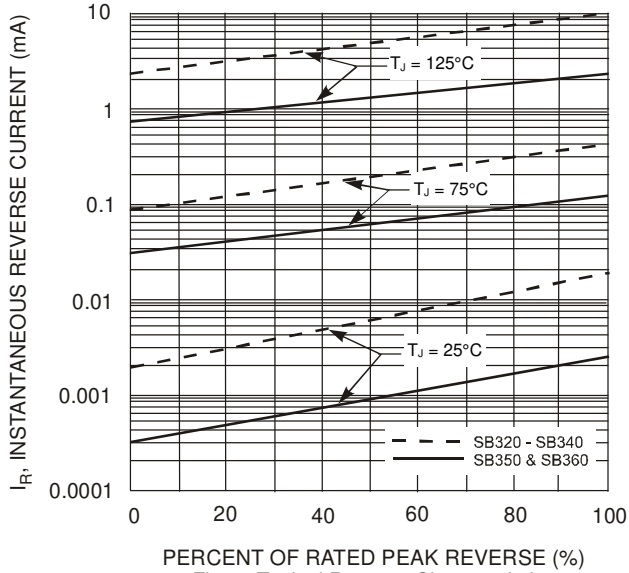
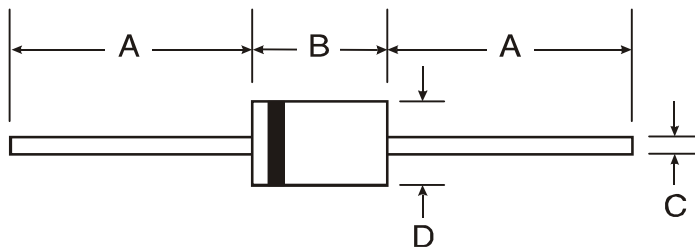


Fig. 5 Typical Reverse Characteristics

## 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 |
| All Dimensions in mm |       |      |

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