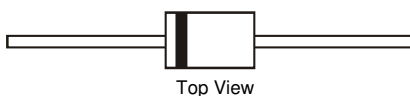


Features

- Designed as Bypass Diodes for Solar Panels
- Selectively Rated for +200°C Maximum Junction Temperature for High Thermal Reliability
- Patented Super Barrier Rectifier Technology
- High Forward Surge Capability
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

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 Plated Leads. Solderable per MIL-STD-202, Method 208 **e3**
- Weight: 1.21 grams (approximate)



Ordering Information (Note 3)

| Part Number | Case | Packaging |
|---------------|----------|---------------------------|
| SBR10U45SD1-T | DO-201AD | 1200/Tape & Reel, 13-inch |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See <http://www.diodes.com> 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 <http://www.diodes.com>.

Marking Information



SBR10U45 = Product Type Marking Code
 AB = Foundry and Assembly Code
 = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 8 for 2008)
 WW = Week code (01 to 53)

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

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

| Characteristic | Symbol | Value | Unit |
|---|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 45 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| RMS Reverse Voltage | V _{R(RMS)} | 32 | V |
| Average Rectified Output Current | I _O | 10 | A |
| Non-Repetitive Avalanche Energy (T _J = +25°C, I _{AS} = 20A, L = 8.5mH) | E _{AS} | 20 | mJ |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 200 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|------------------|---------------------------------------|-------------|
| Maximum Thermal Resistance | | | |
| Thermal Resistance Junction to Ambient (Note 4) | R _{θJA} | 54 | °C/W |
| Thermal Resistance Junction to Lead (Note 4) | R _{θJL} | 18 | °C/W |
| Operating Temperature Range | T _J | V _R ≤ 80% V _{RRM} | -65 to +150 |
| | | V _R ≤ 50% V _{RRM} | ≤180 |
| | | DC Forward Mode | ≤200 |
| Storage Temperature Range | T _{STG} | -65 to +175 | °C |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-------|------|------|---|
| Reverse Breakdown Voltage (Note 5) | V _{(BR)R} | 45 | — | — | V | I _R = 0.5mA |
| Forward Voltage Drop | V _F | — | — | 0.42 | V | I _F = 8A, T _J = +25°C |
| | | — | 0.42 | 0.47 | | I _F = 10A, T _J = +25°C |
| Leakage Current (Note 5) | I _R | — | 0.051 | 0.3 | mA | V _R = 45V, T _J = +25°C |
| | | — | — | 15 | | V _R = 45V, T _J = +100°C |
| | | — | 27 | 75 | | V _R = 45V, T _J = +150°C |

Notes: 4. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
5. Short duration pulse test used to minimize self-heating effect.

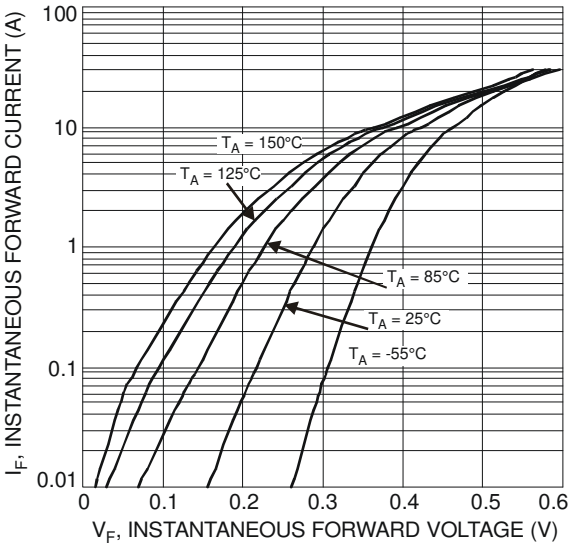


Figure 1 Typical Forward Characteristics

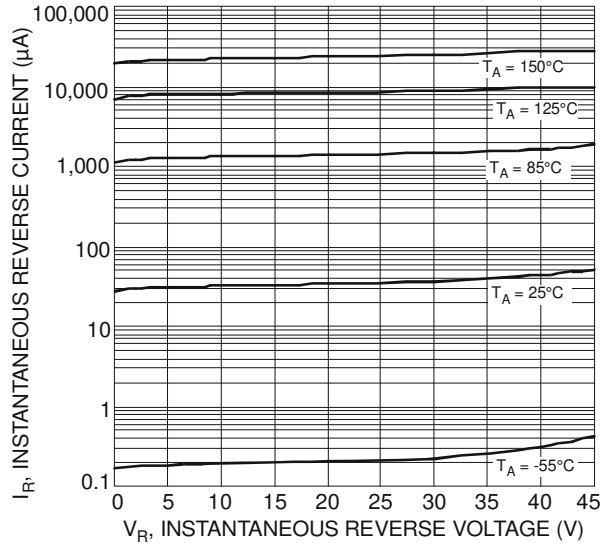


Figure 2 Typical Reverse Characteristics

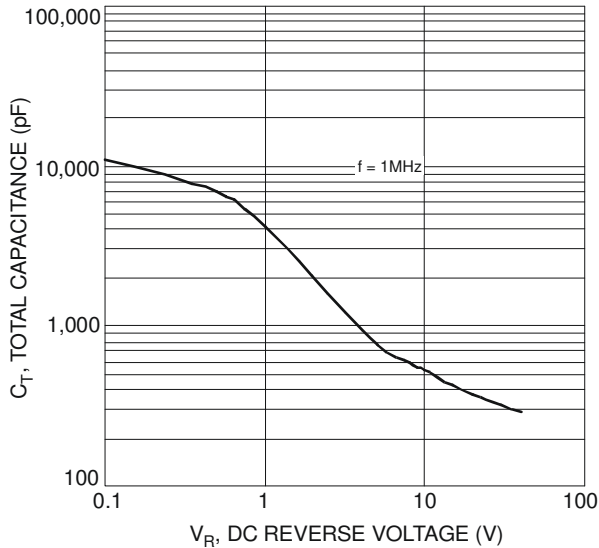
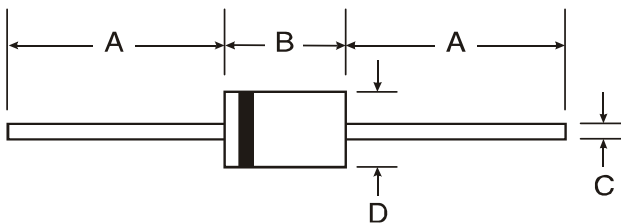


Figure 3 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions



| 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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