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[Diodes Incorporated](#)
[SBR10U45SD1-T](#)

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SBR10U45SD1

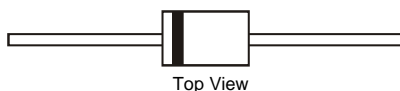
**10A SBR[®]
SUPER BARRIER RECTIFIER**

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
 YWW = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 8 for 2008)
 WW = Week code (01 to 53)


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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			°C/W
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
		—	0.37	0.41		I _F = 10A, T _J = +125°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.



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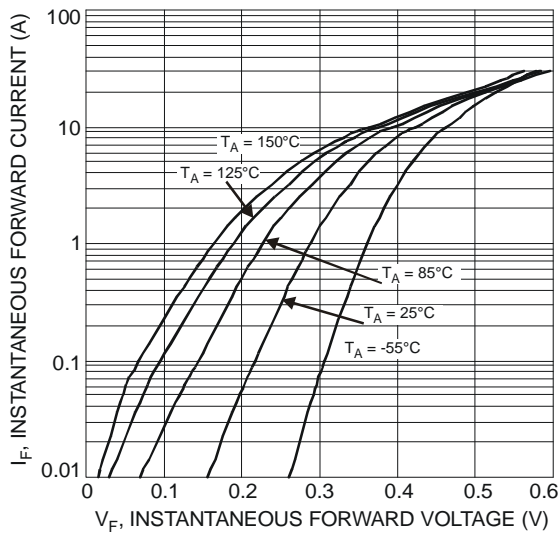


Figure 1 Typical Forward Characteristics

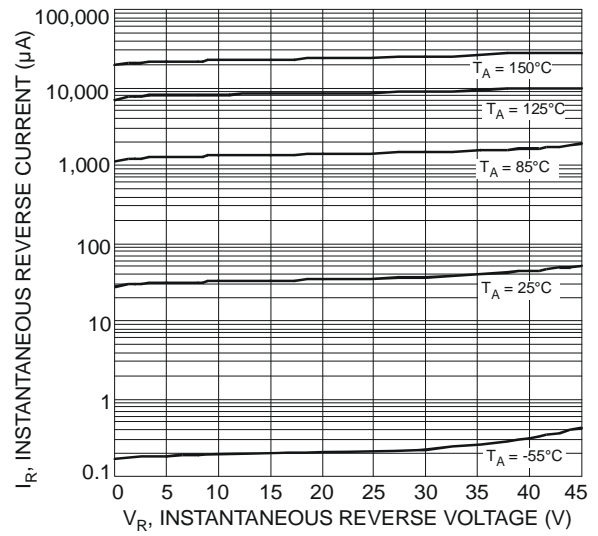


Figure 2 Typical Reverse Characteristics

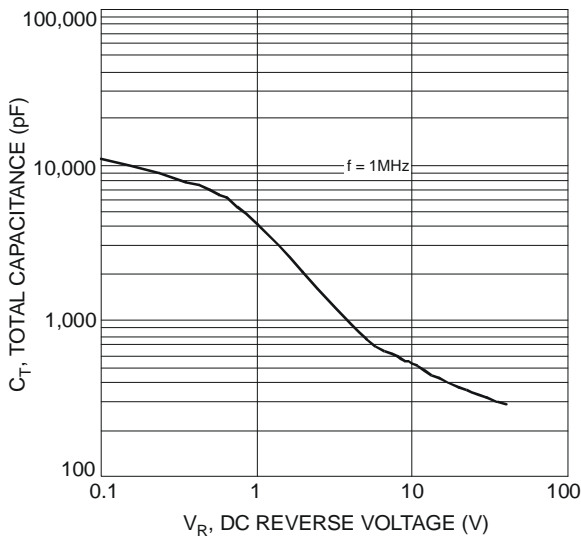
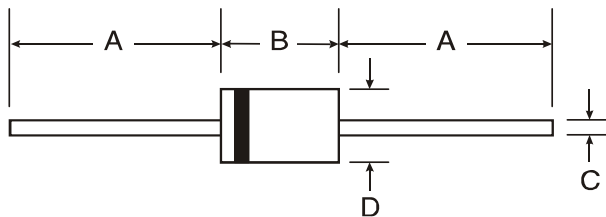


Figure 3 Total Capacitance vs. Reverse Voltage

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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