SBR10U45SD1

10A SBR®
SUPER BARRIER RECTIFIER

Features

- Designed as Bypass Diodes for Solar Panels
- Selectively Rated for +200ºC 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)

Top View

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	45	V
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)		$R_{\theta JA}$	54	°C/W
Thermal Resistance Junction to Lead (Note 4)		$R_{\theta JL}$	18	°C/W
Operating Temperature Range	$V_R \le 80\%\ V_{RRM}$	T_J	-65 to +150	°C
	$V_R \le 50\%\ V_{RRM}$		≤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 0.37	0.42 0.47 0.41	V	I_F = 8A, T_J = +25°C I_F = 10A, T_J = +25°C I_F = 10A, T_J = +125°C
Leakage Current (Note 5)	I_R	— — —	0.051 — 27	0.3 15 75	mA	V_R = 45V, T_J = +25°C V_R = 45V, T_J = +100°C 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.

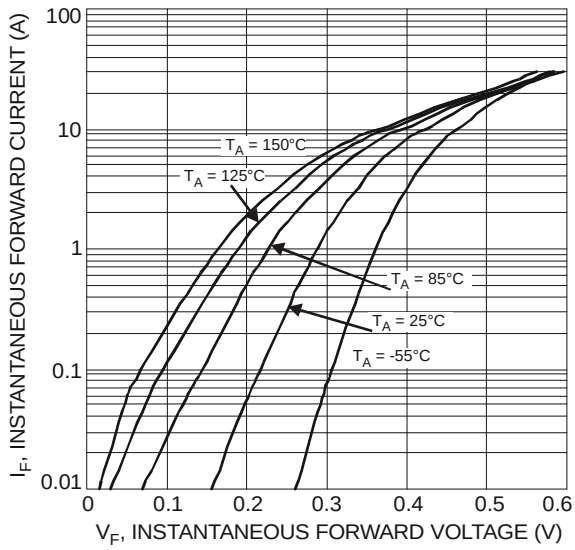


Figure 1 Typical Forward Characteristics

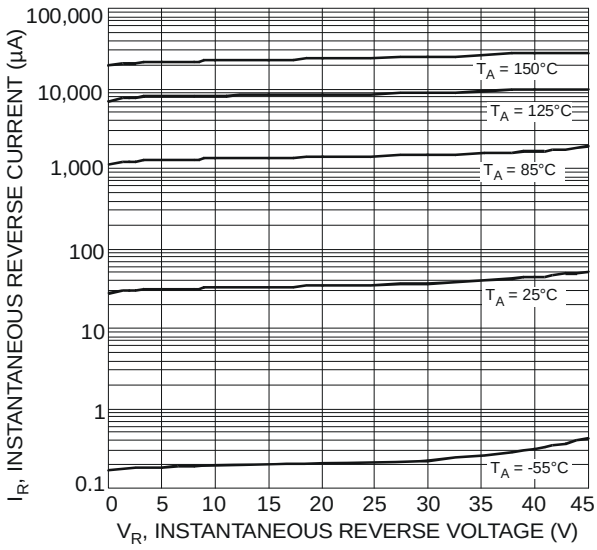


Figure 2 Typical Reverse Characteristics

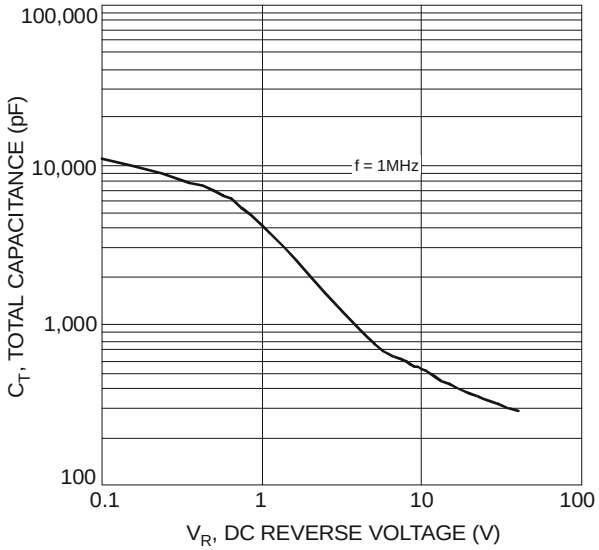
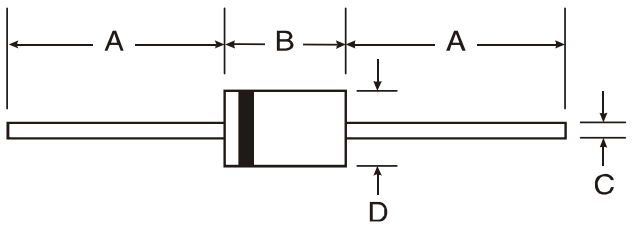


Figure 3 Total Capacitance vs. Reverse Voltage

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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