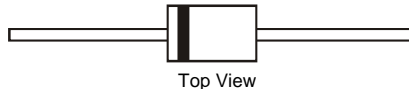


Features

- 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 (Note 2)**

Mechanical Data

- Case: DO-201AD
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish – Tin Plated Leads. Solderable per MIL-STD-202, Method 208 **(E3)**
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.121 grams (approximate)



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	12	A
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	R _{θJA}	54	°C/W
Thermal Resistance Junction to Ambient (Note 3)			
Operating Temperature Range	T _J	-65 to +150	°C
		≤180	
		≤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 1)	V _{(BR)R}	45	-	-	V	I _R = 0.5mA
Forward Voltage Drop	V _F	-	0.43	0.48	V	I _F = 12A, T _J = 25°C
		-	0.40	0.44		I _F = 12A, T _J = 125°C
Leakage Current (Note 1)	I _R	-	50	500	μA	V _R = 45V, T _J = 25°C
		-	-	40	mA	V _R = 45V, T _J = 125°C
		-	27	100	mA	V _R = 45V, T _J = 150°C

- Notes:
1. Short duration pulse test used to minimize self-heating effect.
 2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 3. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 4. Device mounted on Polyimide substrate 2" x 2", 2oz. Copper, 1 x MRP double-sided PC board.

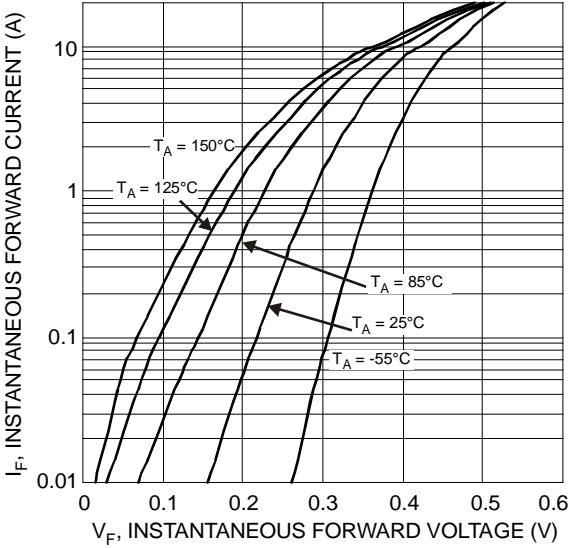


Fig. 1 Typical Forward Characteristics

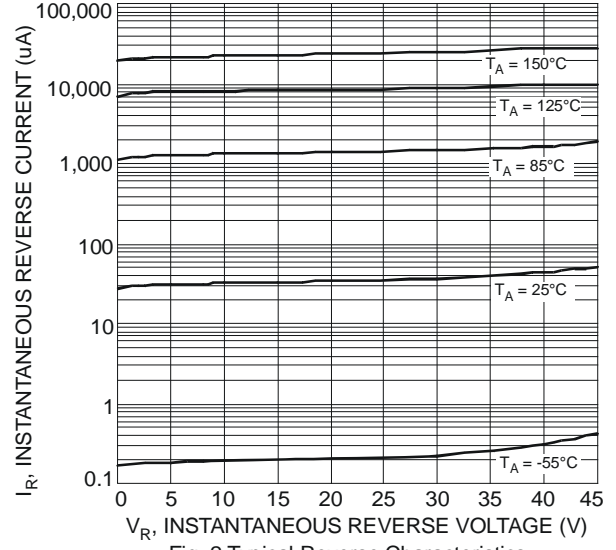


Fig. 2 Typical Reverse Characteristics

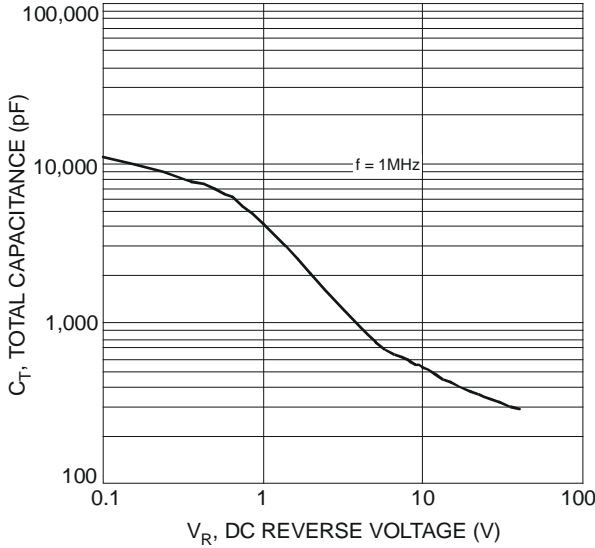


Fig. 3 Total Capacitance vs. Reverse Voltage

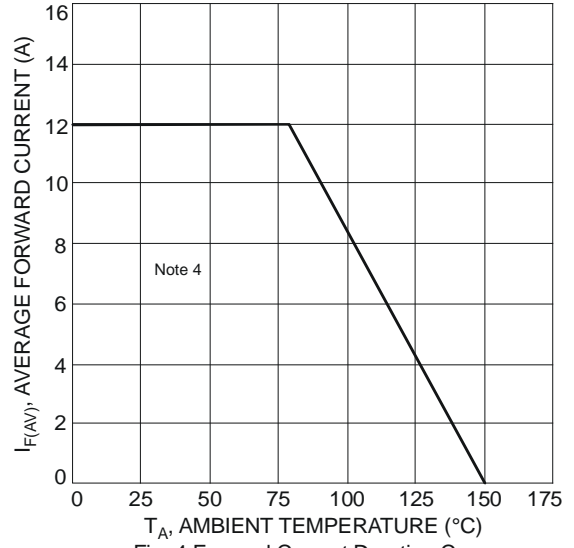


Fig. 4 Forward Current Derating Curve

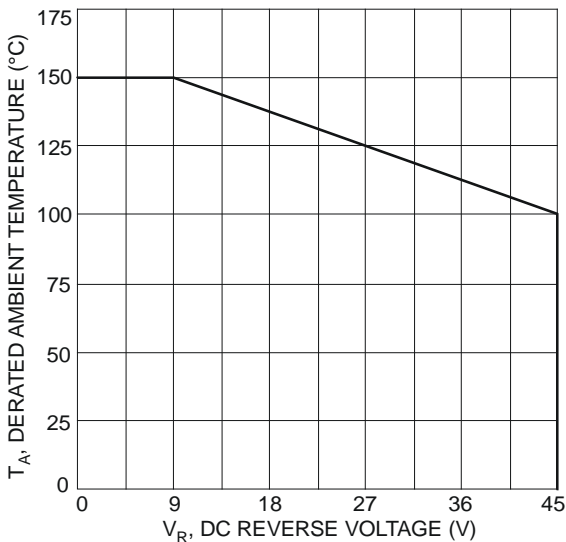


Fig. 5 Operating Temperature Derating

Ordering Information (Note 5)

Part Number	Case	Packaging
SBR12A45SD1-T	DO-201AD	1200/Tape & Reel, 13-inch

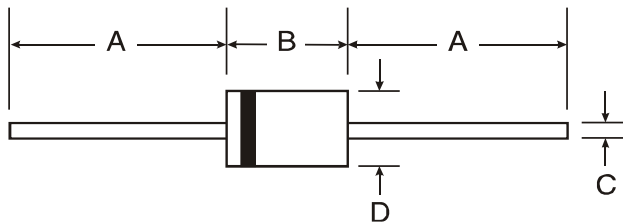
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



SBR12A45 = Product Type Marking Code
 AB = Foundry and Assembly Code
 D = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 8 for 2008)
 WW = Week code 01 to 52

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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