

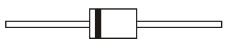
### 12A SBR<sup>®</sup> SUPER BARRIER RECTIFIER

## 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)
- Halogen and Antimony Free. "Green" Device (Note 3)

### **Mechanical Data**

- Case: DO-201AD
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 1.21 grams (approximate)



### **Top View**

### Ordering Information (Notes 4 & 5)

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

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. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at http://www.diodes.com.

5. For Green Molding version, add '-G' to part number (ex. SBR12A45SD1-T-G)

## **Marking Information**

Notes:



SBR12A45 = Product Type Marking Code AB = Foundry and Assembly Code D11 = 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<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	45	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	32	V
Average Rectified Output Current	lo	12	А
Non-Repetitive Avalanche Energy (T <sub>J</sub> = +25°C , I <sub>AS</sub> = 20A , L = 8.5mH)	Eas	20	mJ
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	IFSM	200	А
Peak Repetitive Reverse Surge Current (2µS – 1KHz)	I <sub>RRM</sub>	2	А

# **Thermal Characteristics**

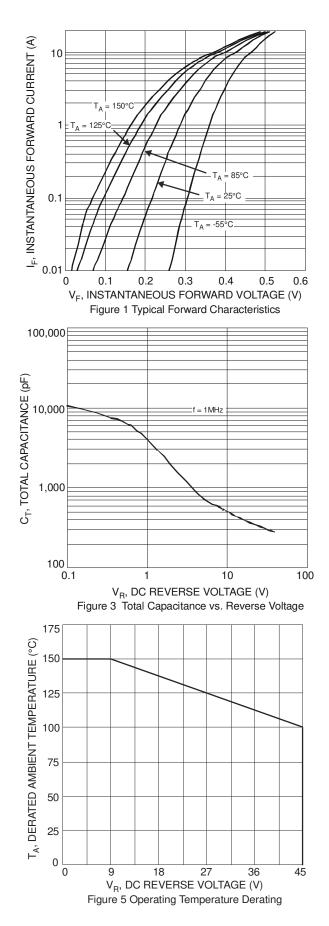
Characteristic		Symbol	Value	Unit
Typical Thermal Resistance Thermal Resistance Junction to Ambient (Note 6 Thermal Resistance Junction to Lead (Note 6) $T_L$		R <sub>θJA</sub> R <sub>θJL</sub>	31 7.2	°C/W
Operating Temperature Range	$V_R \le 80\% V_{RRM}$ $V_R \le 50\% V_{RRM}$ DC Forward Mode	TJ	-65 to +150 ≤180 ≤200	°C
Storage Temperature Range		T <sub>STG</sub>	-65 to +175	°C

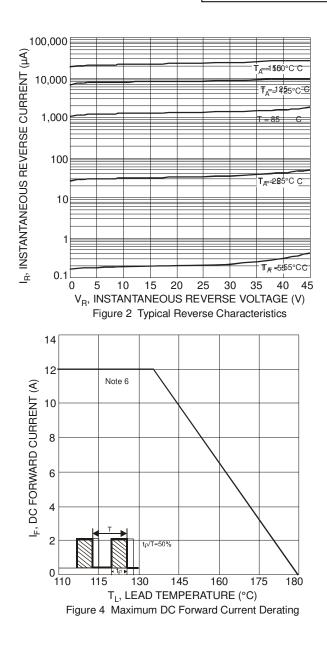
# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V <sub>(BR)R</sub>	45	—	-	V	$I_R = 0.5 mA$
Forward Voltage Drop	V <sub>F</sub>		0.43 0.40	0.48 0.44	V	$I_F = 12A, T_J = +25^{\circ}C$ $I_F = 12A, T_J = +125^{\circ}C$
Leakage Current (Note 7)	I <sub>R</sub>		50  27	500 40 100	'nА	$V_R = 45V, T_J = +25^{\circ}C$ $V_R = 45V, T_J = +125^{\circ}C$ $V_R = 45V, T_J = +150^{\circ}C$

 Device mounted on 2" x 2" (50mm x 50mm) copper pad, with lead length 0.5".
Short duration pulse test used to minimize self-heating effect. Notes:



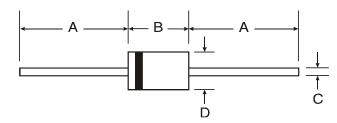






## **Package Outline Dimensions**

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



DO-201AD				
Dim	Min	Max		
Α	25.40			
В	7.20	9.50		
С	1.20	1.30		
D	4.80	5.30		
All Dimensions in mm				

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