


## Features

- Designed as Bypass Diodes for Solar Panels
- Complies with IEC 61730-2 Solar Bypass Diode Standards ( $T_{Jmax} \leq T_J = T_{L/C} + R_{thL/C} * V_F * I_{se}$ , @  $T_A = 75^\circ\text{C}$ , 1hr. Short Circuit)
- Patented Super Barrier Rectifier Technology
- High Forward Surge Capability
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Lead Free Finish, RoHS Compliant (Note 1)**

## 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 
- Weight: 0.121 grams (approximate)



Top View


## Ordering Information (Note 2)

Part Number	Case	Packaging
SBR1045SD1-T	DO-201AD	1200/Tape & Reel, 13-inch

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.  
2. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR1045 = Product Type Marking Code  
 = Manufacturers' code marking  
 AB = Foundry and Assembly Code (if applicable)  
 YWW = Date Code Marking  
 Y = Last digit of year (ex: 7 for 2007)  
 WW = Week code (01 ~ 53)

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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 @ $T_C = 110^\circ\text{C}$	$I_O$	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	180	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg) (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	54 9	$^\circ\text{C/W}$
Operating Temperature Range	$V_R \leq 80\% V_{RRM}$	-65 to +150	$^\circ\text{C}$
	$V_R \leq 50\% V_{RRM}$	$\leq 180$	
	DC Forward Mode	$\leq 200$	
Storage Temperature Range	$T_{STG}$	-65 to +175	$^\circ\text{C}$

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	$V_{(BR)R}$	45	-	-	V	$I_R = 0.5\text{mA}$
Forward Voltage Drop	$V_F$	-	0.46	0.51	V	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$
		-	0.50	0.55		$I_F = 10\text{A}, T_J = 25^\circ\text{C}$
		-	0.48	0.53		$I_F = 10\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 4)	$I_R$	-	0.05	0.45	mA	$V_R = 45\text{V}, T_J = 25^\circ\text{C}$
		-	-	18		$V_R = 45\text{V}, T_J = 100^\circ\text{C}$
		-	18	100		$V_R = 45\text{V}, T_J = 150^\circ\text{C}$

Notes: 3. FR-4 PCB, 2oz. Copper, with minimum recommended pad layout as show on Diodes, Inc. suggest pad layout AP02001 at <http://www.diodes.com>.  
 4. Short duration pulse test used to minimize self-heating effect.

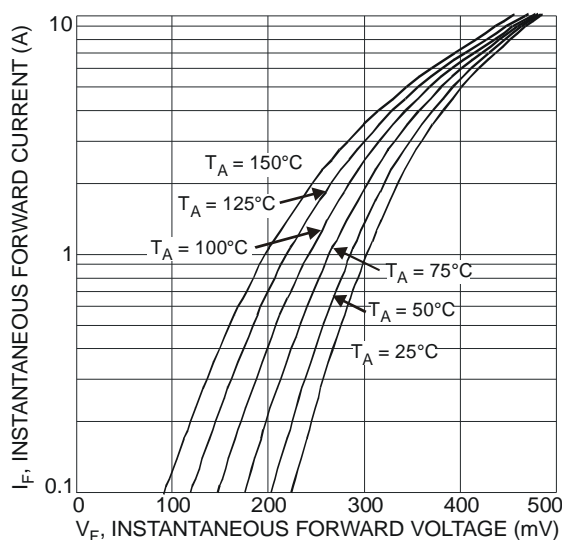


Fig. 1 Typical Forward Characteristics

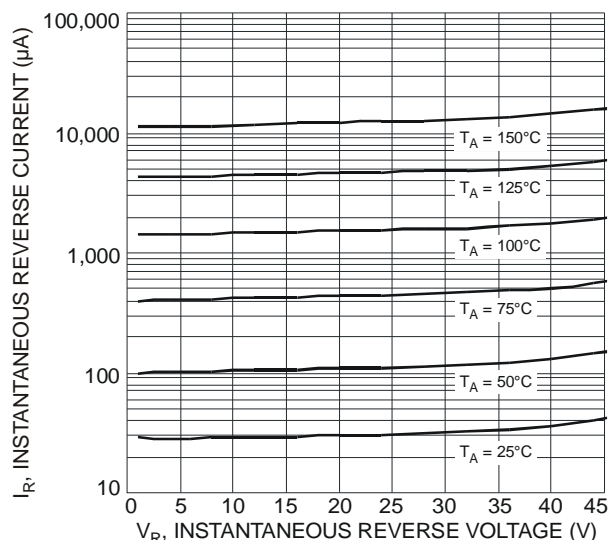


Fig. 2 Typical Reverse Characteristics

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SBR1045SD1

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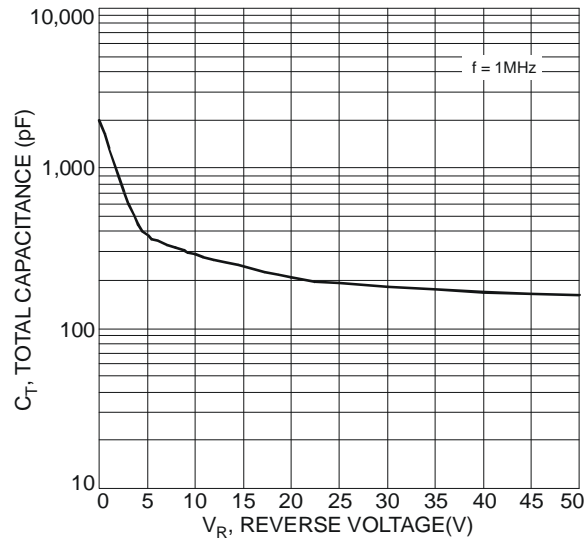
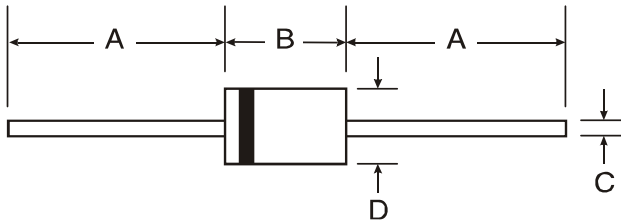


Fig 3. Typical Total Capacitance

## 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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