



**THE DATASHEET OF
SBR1045SD1-T**

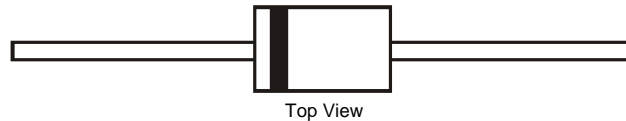


Features

- 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)



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%.

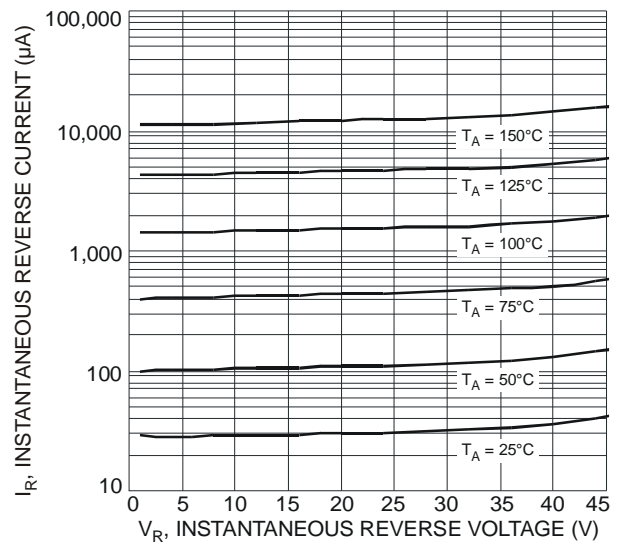
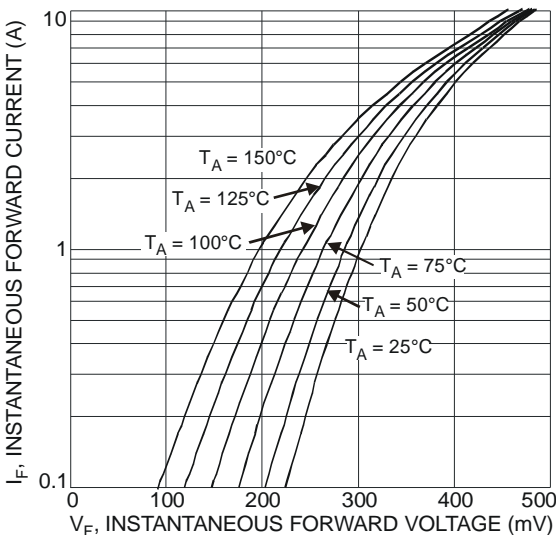
Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	45	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_{RM}		
RMS Reverse Voltage	$V_{R(RMS)}$	32	V
Average Rectified Output Current @ $T_C = 110^\circ\text{C}$	I_O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms 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)	$R_{\theta JA}$	54	$^\circ\text{C/W}$
	$R_{\theta JL}$	9	
Operating Temperature Range	T_J	$V_R \leq 80\% V_{RRM}$	-65 to +150
		$V_R \leq 50\% V_{RRM}$	≤ 180
		DC Forward Mode	≤ 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.


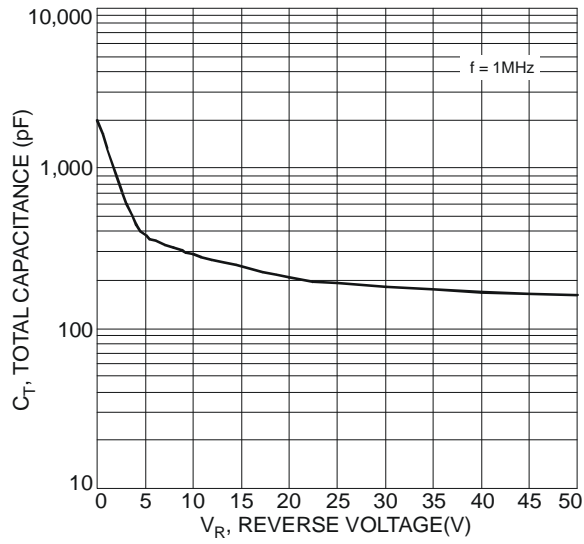
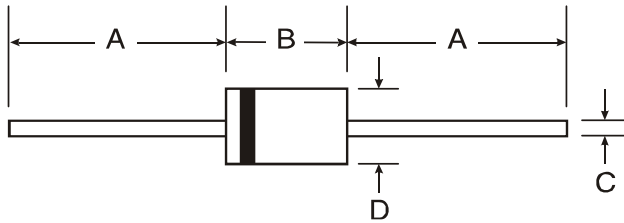


Fig 3. Typical Total Capacitance

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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