

10A SBR® **SUPER BARRIER RECTIFIER**

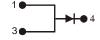
Features

- Ultra-Low Forward Voltage Drop
- **Excellent High Temperature Stability**
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- Lead Free Finish, RoHS Compliant (Note 2)
- "Green" Molding Compound (No Br, Sb)

Mechanical Data

- Case: D Pak (TO-252)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 @3
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.4 grams (approximate)





Package Pin Out Configuration

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	>
RMS Reverse Voltage	V _{R(RMS)}	31	V
Average Rectified Output Current @T _C = 110°C	lo	10	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	125	А

Thermal Characteristics @TA = 25°C unless otherwise specified

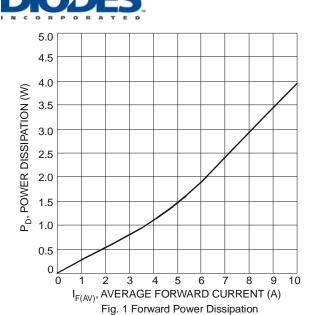
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Thermal Resistance Junction to Case Thermal Resistance Junction to Ambient (Note 3)	R _θ JC R _θ JA	2.0 34	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

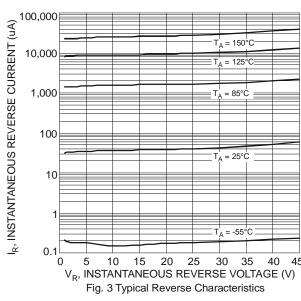
Electrical Characteristics @T_A = 25°C unless otherwise specified

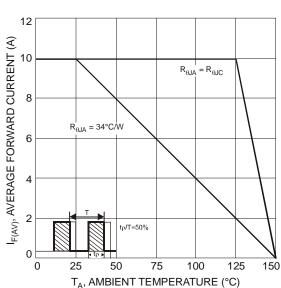
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V _F	-	-	0.57	V	$I_F = 10A, T_J = 25^{\circ}C$
			=	0.54		$I_F = 10A, T_J = 125$ °C
Leakage Current (Note 1)	I_R	-	-	0.5	mA	$V_R = 45V, T_J = 25^{\circ}C$

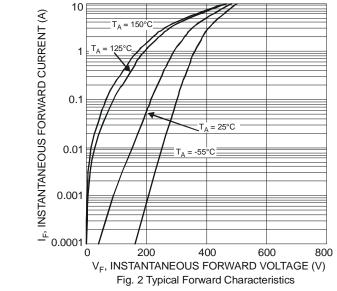
Notes:

- 1. Short duration pulse test used to minimize self-heating effect.
- 2. EU Directive 2002/95/EC (RoHS). All applicable RoHŠ exemptions applied, see EU Directive 2002/95/EC Annex Notes.
- 3. Polymide PCB 2 oz. Copper, minimum recommended pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.









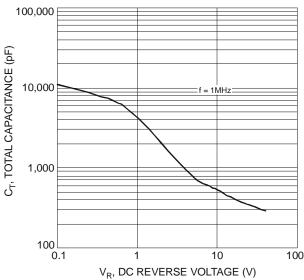


Fig. 4 Total Capacitance vs. Reverse Voltage

150 T_A, DERATED AMBIENT TEMPERATURE (°C) 125 100 75 50 25 0 0 20 25 30 35 40 45 15 V_R, DC REVERSE VOLTAGE (V) Fig. 6 Operating Temperature Derating

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Fig. 5 Forward Current Derating Curve



Ordering Information (Note 4)

Part Number	Case	Packaging
SBR10U45D1-13	D Pak (TO-252)	80 pieces/tube
	D 1 ak (10-232)	2500 pieces/reel

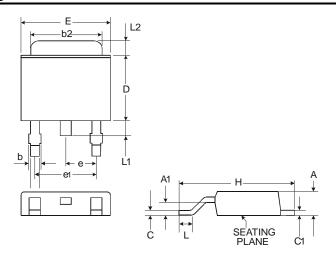
Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



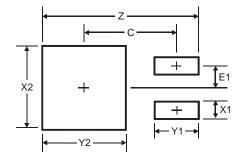
SBR10U45 = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two digits of year, (ex: 07 = 2007) WW = Week (01-52)

Package Outline Dimensions



DPAK				
Dim	Min	Max		
Α	2.18	2.40		
A1	0.89	1.14		
b	0.61	Тур.		
b2	5.20	5.50		
С	0.45	0.58		
C1	0.45	0.58		
D	5.40	6.20		
Е	6.35	6.80		
е	2.28	Тур.		
e1	4.57	Тур.		
Н	9.00	10.40		
L	0.51	_		
L1	0.64	1.02		
L2	0.88	1.27		
All Dimensions in mm				

Suggested Pad Layout



Dimensions	Value (in mm)
Z	11.6
X1	1.5
X2	7.0
Y1	2.5
Y2	7.0
С	6.9
E1	2.3

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