

Features

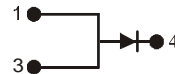
- Ultra-Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **“Green” Molding Compound (No Br, Sb)**



Top View

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 ^(E3)
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.4 grams (approximate)



Package Pin Out Configuration

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	$V_{R(RMS)}$	31	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}	125	A

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

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance			
Thermal Resistance Junction to Case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	34	
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

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

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

- 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. Polyimide 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>.

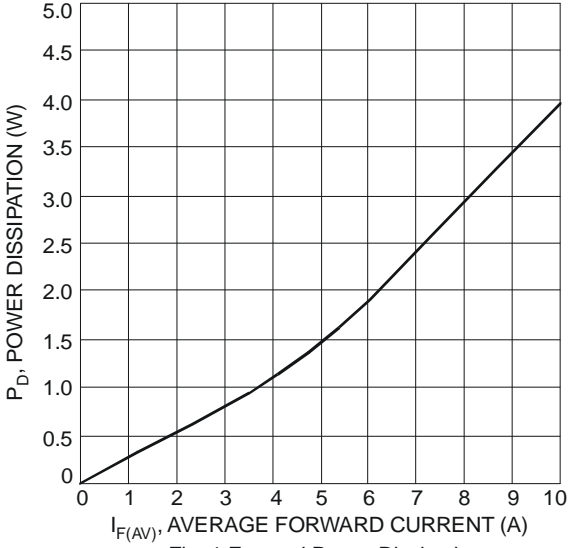


Fig. 1 Forward Power Dissipation

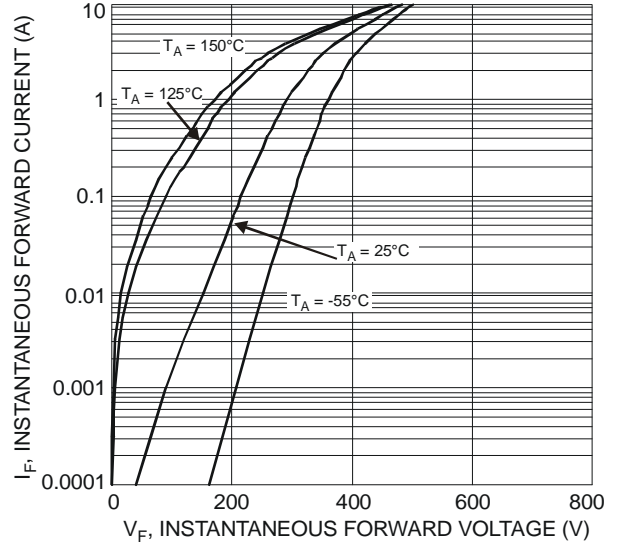


Fig. 2 Typical Forward Characteristics

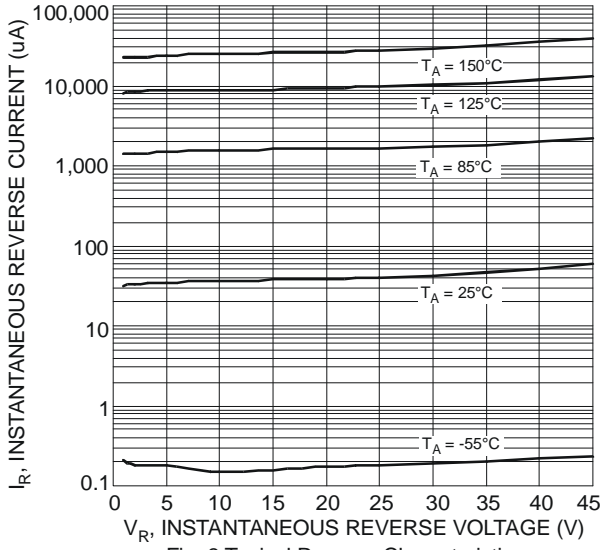


Fig. 3 Typical Reverse Characteristics

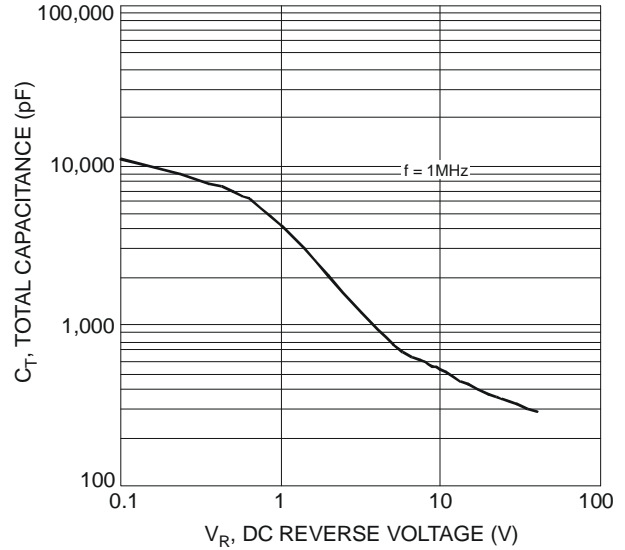


Fig. 4 Total Capacitance vs. Reverse Voltage

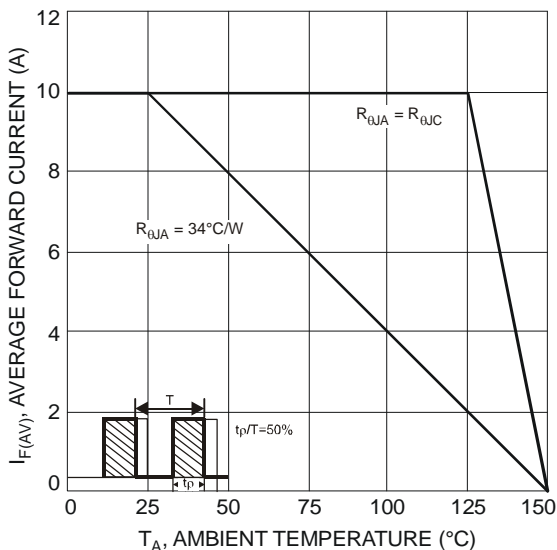


Fig. 5 Forward Current Derating Curve

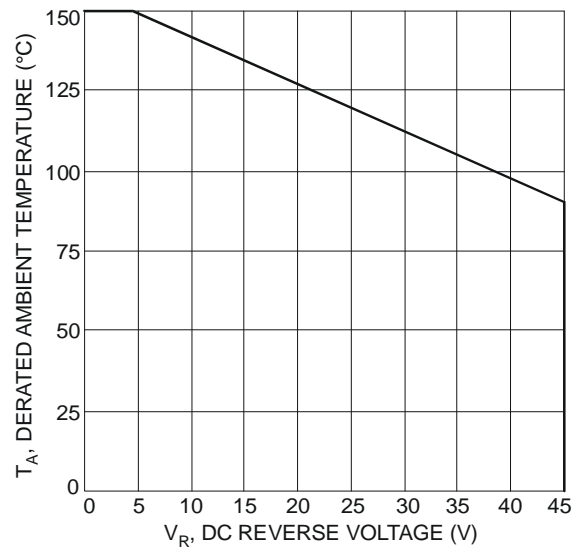
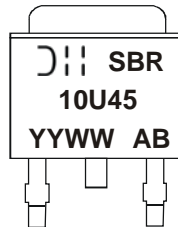


Fig. 6 Operating Temperature Derating

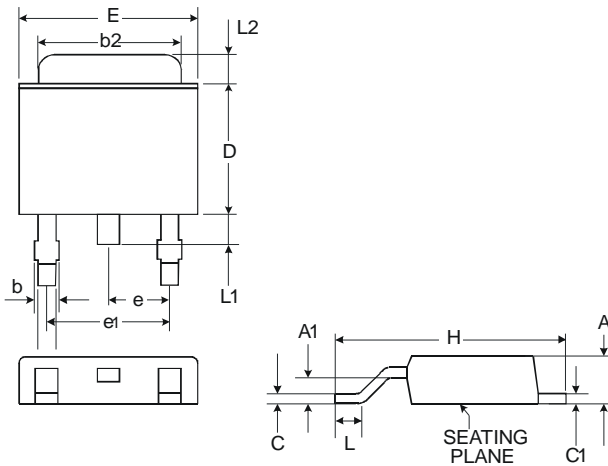
Ordering Information (Note 4)

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

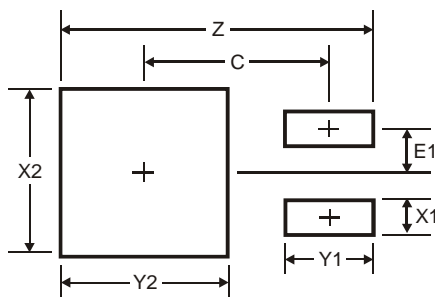
Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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
A	2.18	2.40
A1	0.89	1.14
b	0.61 Typ.	
b2	5.20	5.50
C	0.45	0.58
C1	0.45	0.58
D	5.40	6.20
E	6.35	6.80
e	2.28 Typ.	
e1	4.57 Typ.	
H	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
C	6.9
E1	2.3

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