

Features

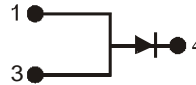
- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **“Green” Molding Compound (No Br, Sb)**



Top View

Mechanical Data

- Case: DPAK (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: 0.33 grams (approximate)



Polarity

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	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 = 140°C	I _O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	90	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance		29	°C/W
Thermal Resistance Junction to Ambient (Note 3)	R _{θJA}		
Thermal Resistance Junction to Case (Note 3)	R _{θJC}		
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	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V _{(BR)R}	45	-	-	V	I _R = 0.45mA
Forward Voltage Drop (per leg)	V _F	-	0.42	0.48	V	I _F = 5A, T _J = 25°C
		-	0.37	0.41		I _F = 5A, T _J = 125°C
		-	-	0.58		I _F = 10A, T _J = 25°C
		-	0.50	0.56		I _F = 10A, T _J = 125°C
Leakage Current (Note 2)	I _R	-	50	500	μA	V _R = 45V, T _J = 25°C
		-	12	40		mA
Total Capacitance	C _T	-	400	-	pF	V _R = 5V, f = 1MHz T _J = 25°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. Device mounted on polyimide substrate, 240mm² Copper pad, double-sided PC Board.

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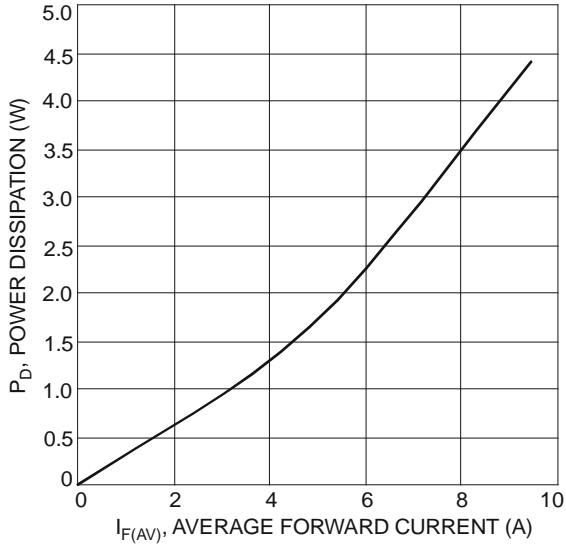


Fig. 1 Forward Power Dissipation

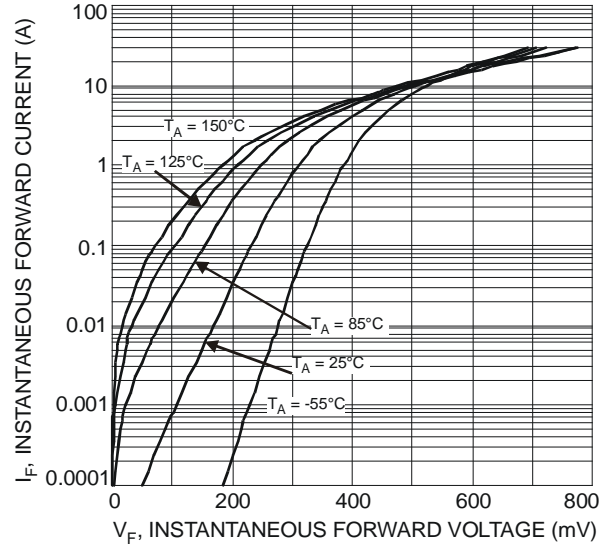


Fig. 2 Typical Forward Characteristics

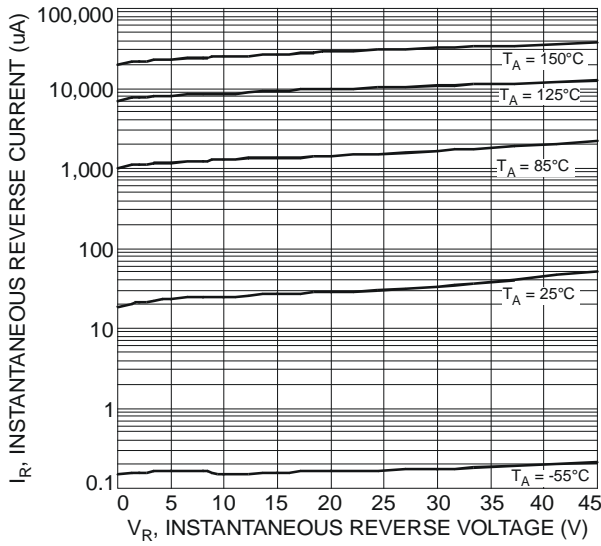


Fig. 3 Typical Reverse Characteristics

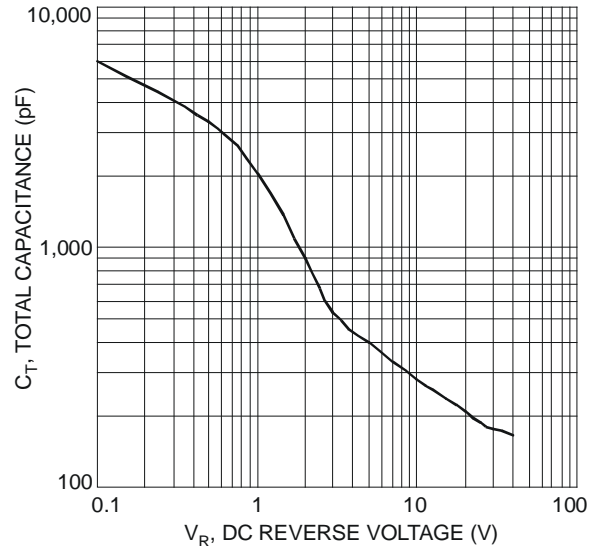


Fig. 4 Total Capacitance vs. Reverse Voltage

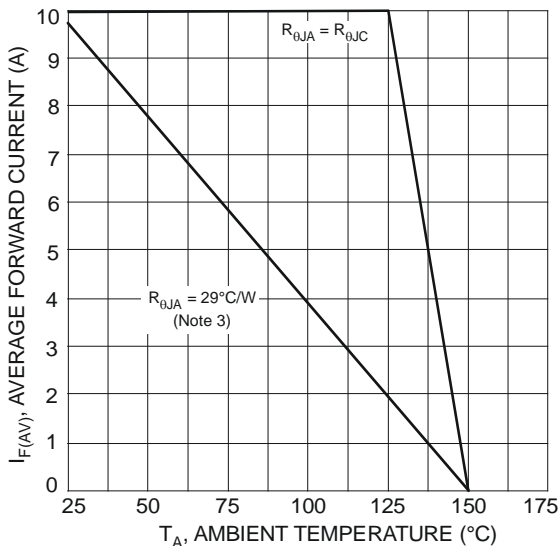


Fig. 5 Forward Current Derating Curve

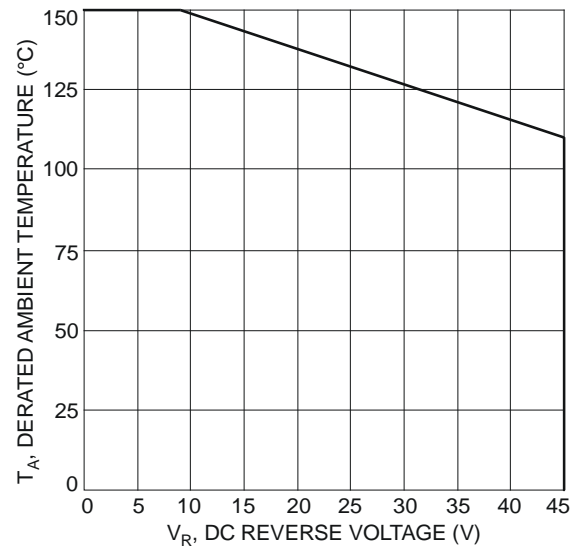


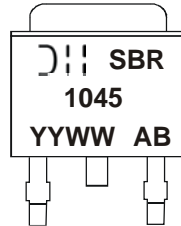
Fig. 6 Operating Temperature Derating

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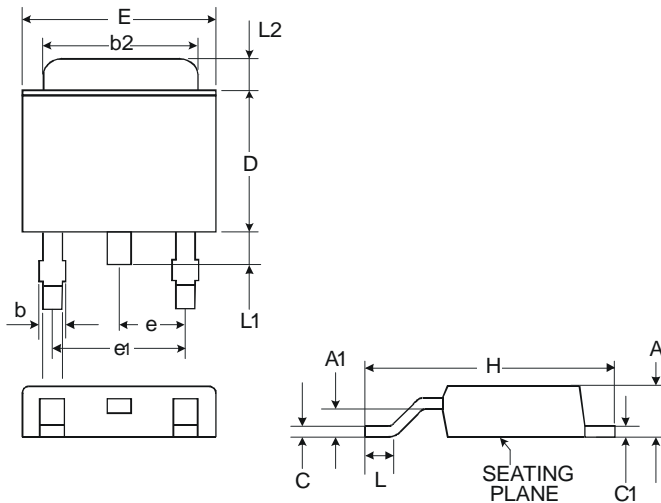
Ordering Information (Note 3)

Part Number	Case	Packaging
SBR1045D1-13	DPAK (TO-252)	80 pieces/tube 2500/Tape & Reel, 13-inch

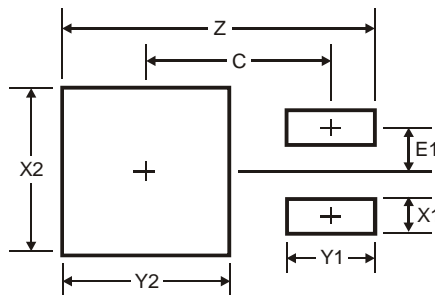
Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information


SBR1045 = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year, ex: 08 = 2008
 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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