

## Features

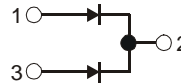
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **“Green” Molding Compound (No Br, Sb)**

## Mechanical Data

- Case: 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 <sup>(E3)</sup>
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.34 grams (approximate)



Top View



Polarity

## Maximum Ratings @T<sub>A</sub> = 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 <sub>RRM</sub>	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	31	V
Average Rectified Output Current @T <sub>C</sub> = 110°C	I <sub>O</sub>	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	90	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg) (Note 3) Package = TO-252	R <sub>θJA</sub>	47	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	45	-	-	V	I <sub>R</sub> = 0.5mA
Forward Voltage Drop (Per Leg)	V <sub>F</sub>	-	-	0.55	V	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C I <sub>F</sub> = 5A, T <sub>J</sub> = 85°C
Leakage Current (Note 1)	I <sub>R</sub>	-	-	0.5	mA	V <sub>R</sub> = 45V, T <sub>J</sub> = 25°C V <sub>R</sub> = 45V, T <sub>J</sub> = 125°C

- Notes:
1. Short duration pulse test used to minimize self-heating effect.
  2. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7*.
  3. Device mounted on polyimide substrate 2" x 2", 2oz. Copper, 1 x MRP double-sided, PC boards.

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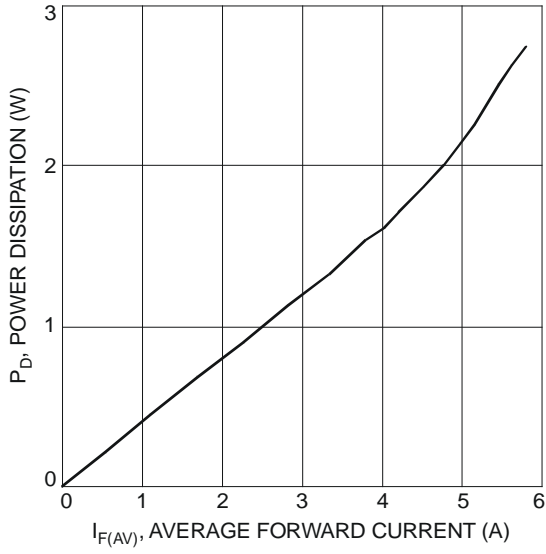


Fig. 1 Forward Power Dissipation

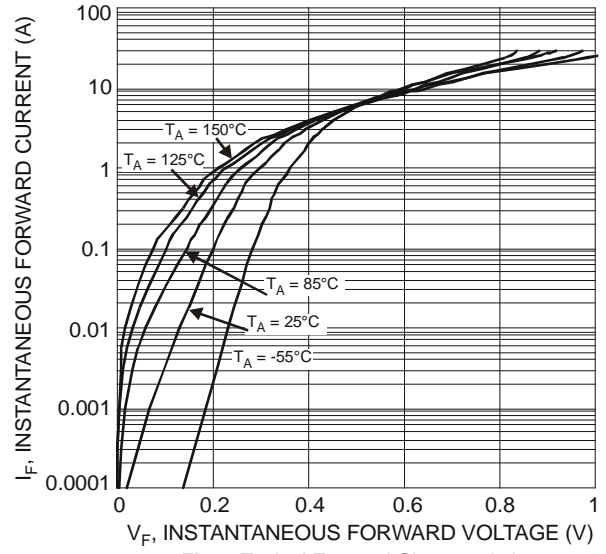


Fig. 2 Typical Forward Characteristics

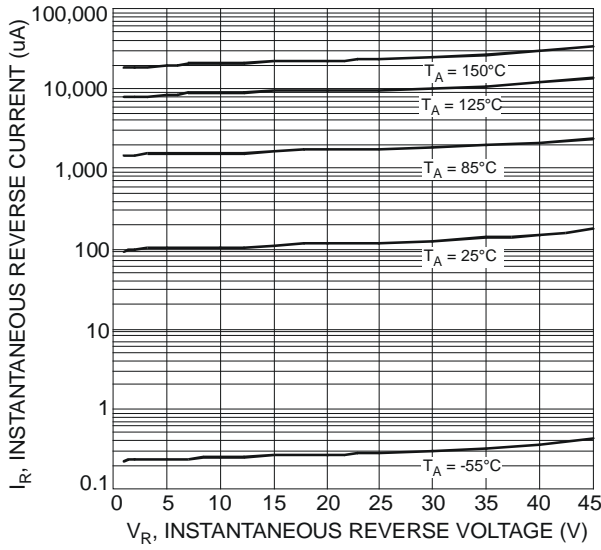


Fig. 3 Typical Reverse Characteristics

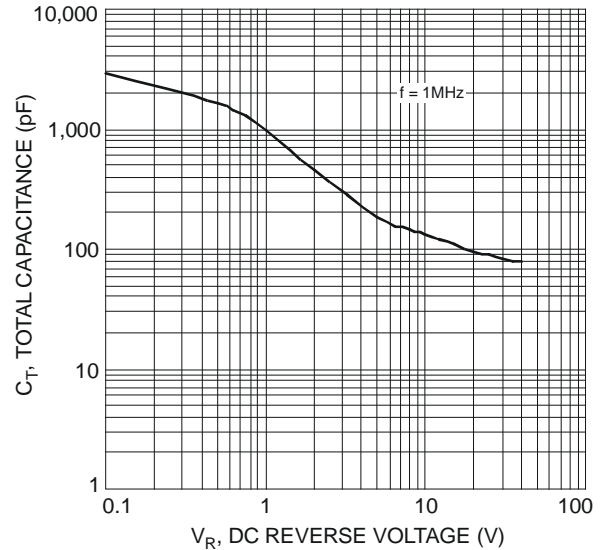


Fig. 4 Total Capacitance vs. Reverse Voltage

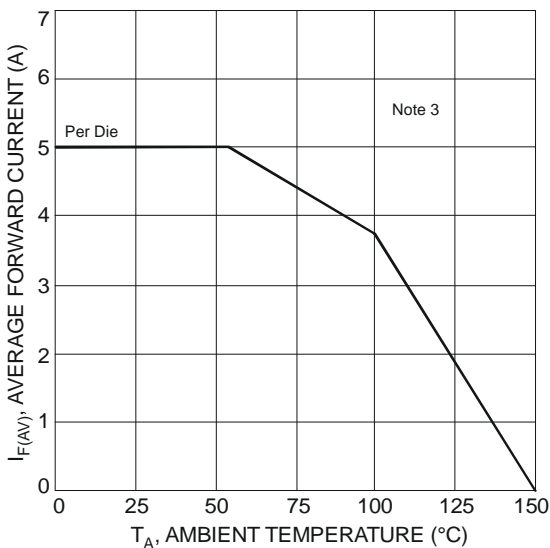


Fig. 5 Forward Current Derating Curve

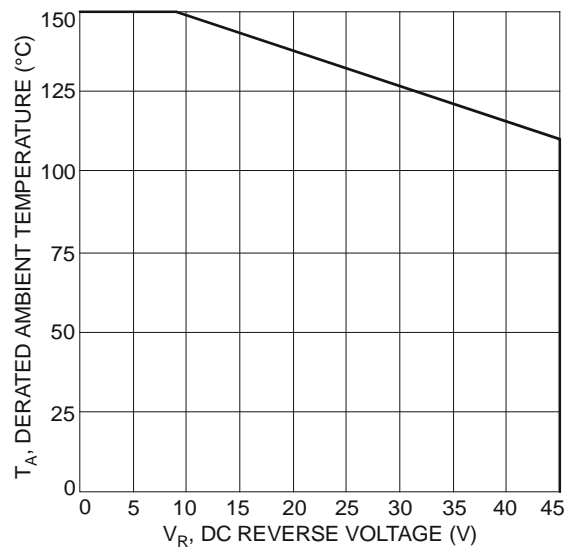


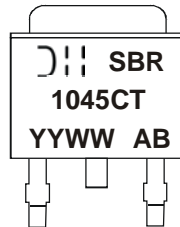
Fig. 6 Operating Temperature Derating

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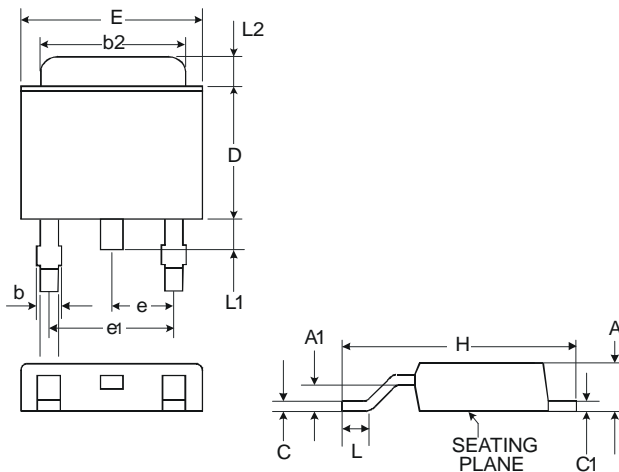
**Ordering Information** (Note 3)

Part Number	Case	Packaging
SBR1045CTL-13	DPAK (TO-252)	80 pieces/tube 2500 pieces/reel

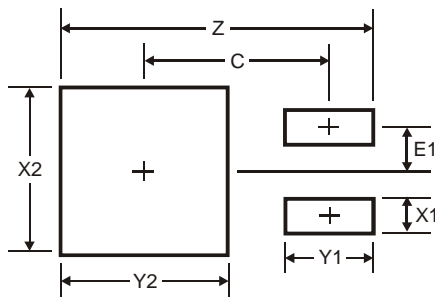
Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**


SBR1045CT = 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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