


## Features

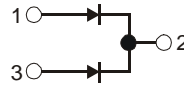
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**

## Mechanical Data

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: 0.34 grams (approximate)



Top View



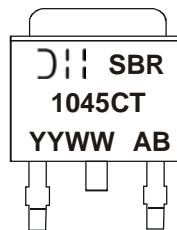
Polarity

## Ordering Information (Note 2)

Part Number	Case	Packaging
SBR1045CTL-13	TO252 (DPAK)	2500 pieces/reel

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



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 - 53)

## 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	I <sub>FSM</sub>	90	A
Single Half Sine-Wave Superimposed on Rated Load			

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## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg) (Note 3)	$R_{\theta JA}$	47	$^{\circ}\text{C/W}$
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
Reverse Breakdown Voltage (Note 4)	$V_{(BR)R}$	45	-	-	V	$I_R = 0.5\text{mA}$
Forward Voltage Drop (Per Leg)	$V_F$	-	0.5	0.55 0.53	V	$I_F = 5\text{A}, T_J = 25^{\circ}\text{C}$ $I_F = 5\text{A}, T_J = 85^{\circ}\text{C}$
Leakage Current (Note 4)	$I_R$	-	13	0.5 100	mA	$V_R = 45\text{V}, T_J = 25^{\circ}\text{C}$ $V_R = 45\text{V}, T_J = 125^{\circ}\text{C}$

Notes: 3. Device mounted on polyimide substrate 2" x 2", 2oz. Copper, 1 x MRP double-sided, PC boards.  
 4. Short duration pulse test used to minimize self-heating effect.

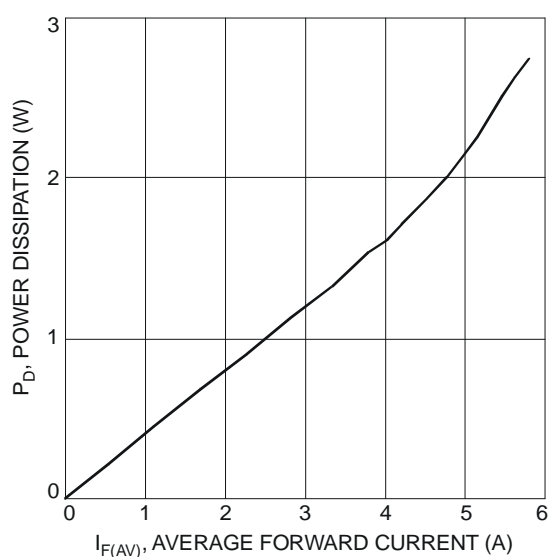


Fig. 1 Forward Power Dissipation

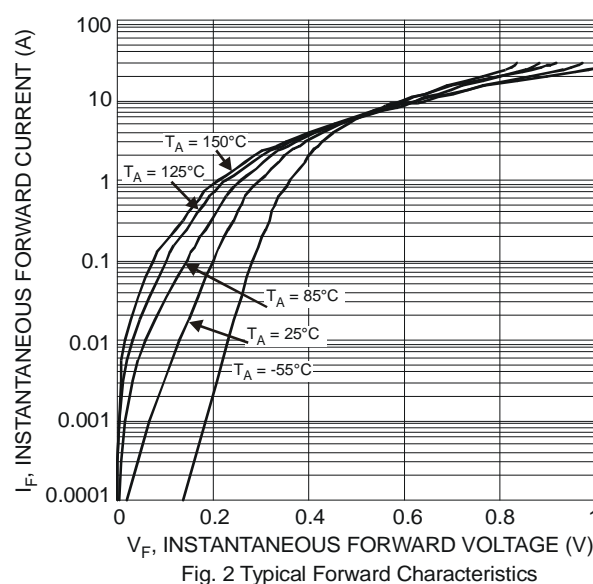


Fig. 2 Typical Forward Characteristics

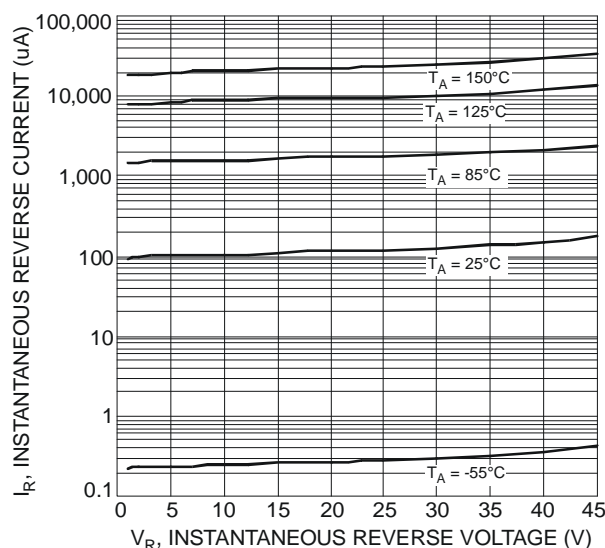


Fig. 3 Typical Reverse Characteristics

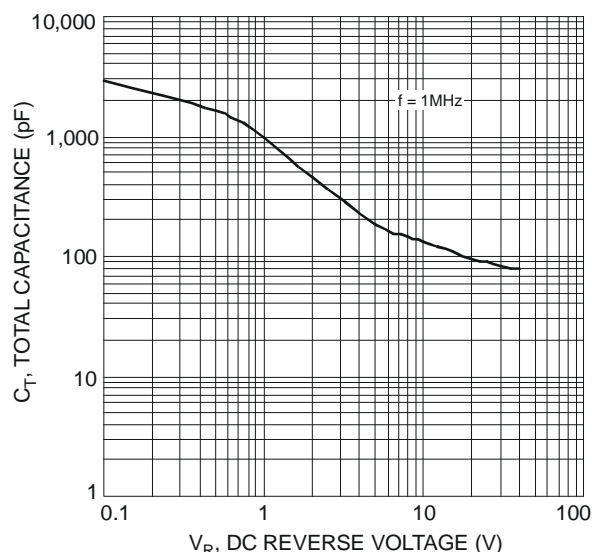


Fig. 4 Total Capacitance vs. Reverse Voltage

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SBR1045CTL

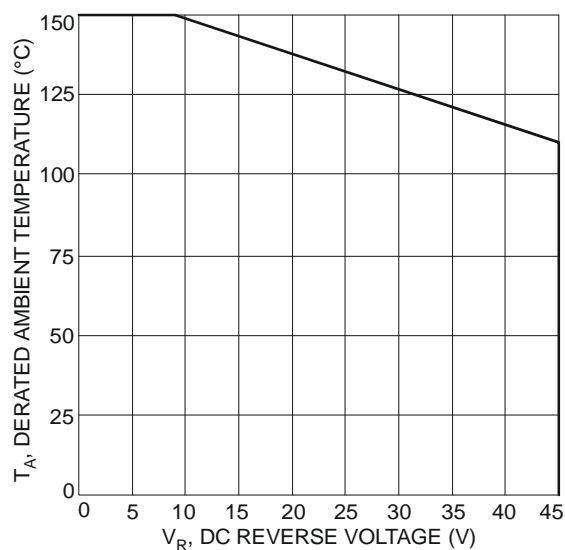
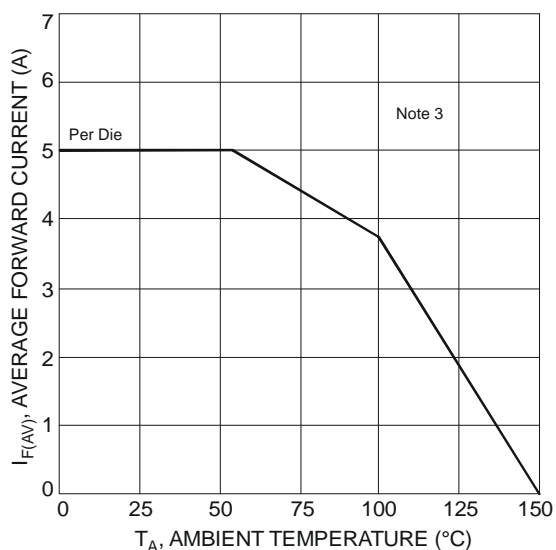
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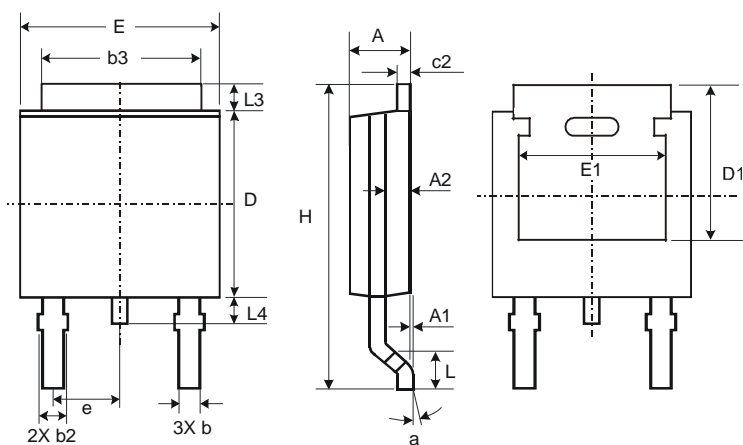
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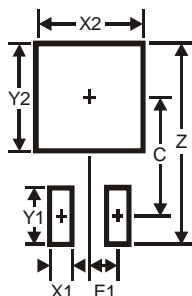
## Package Outline Dimensions



TO252			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c2	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	—	—
e	—	—	2.286
E	6.45	6.70	6.58
E1	4.32	—	—
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	—
All Dimensions in mm			

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## 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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