

Features

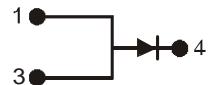
- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**

Mechanical Data

- Case: DPAK (TO252)
- 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 ^(E3)
- Weight: 0.33 grams (approximate)



Top View



Polarity

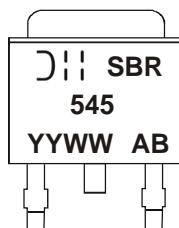
Ordering Information (Note 2)

Part Number	Case	Packaging
SBR545D1-13	DPAK (TO252)	2500/Tape & Reel, 13-inch

Notes:

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2). All applicable RoHS exemptions applied.
2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR545 = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year (ex: 11 = 2011)
 WW = Week (01 - 53)

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}		
Working Peak Reverse Voltage	V_{RWM}	45	V
DC Blocking Voltage	V_{RM}		
Average Rectified Output Current @ $T_C = 140^\circ\text{C}$	I_O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms	I_{FSM}	90	A
Single Half Sine-Wave Superimposed on Rated Load			

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction to Case (Note 3)	$R_{\theta JC}$	3	°C/W
Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	24	
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	V_F	-	-	0.49	V	$I_F = 5\text{A}, T_J = 25^\circ\text{C}$
		-	-	0.44		$I_F = 5\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 4)	I_R	-	-	500	μA	$V_R = 45\text{V}, T_J = 25^\circ\text{C}$
		-	-	40		$V_R = 45\text{V}, T_J = 125^\circ\text{C}$

Notes:
 3. Device mounted 2inch*2inch Polyimide with 501.12mm² copper pad.
 4. Short duration pulse test used to minimize self-heating effect.

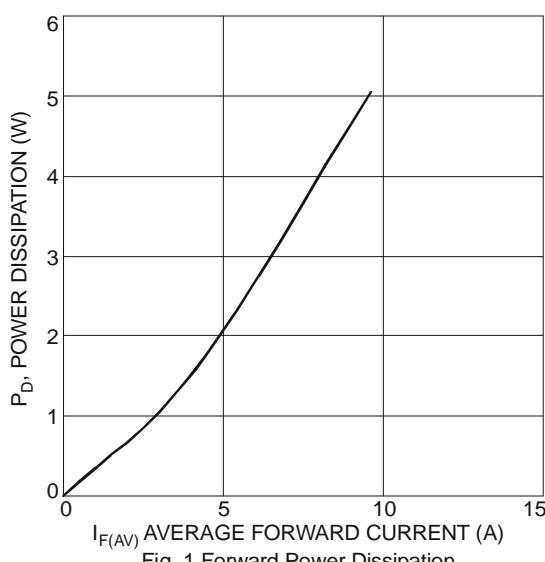


Fig. 1 Forward Power Dissipation

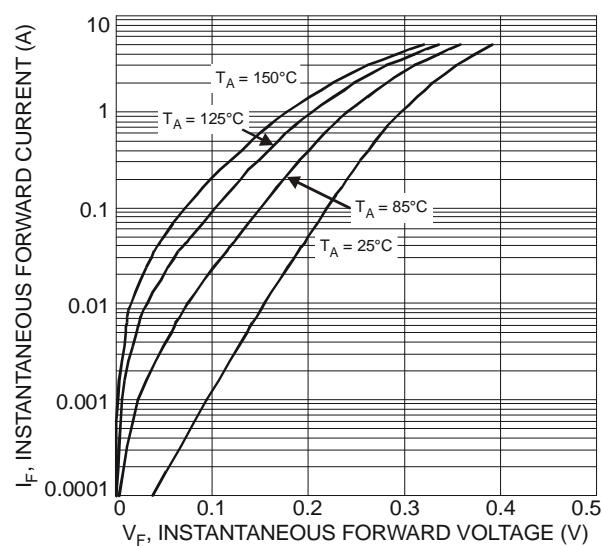


Fig. 2 Typical Forward Characteristics

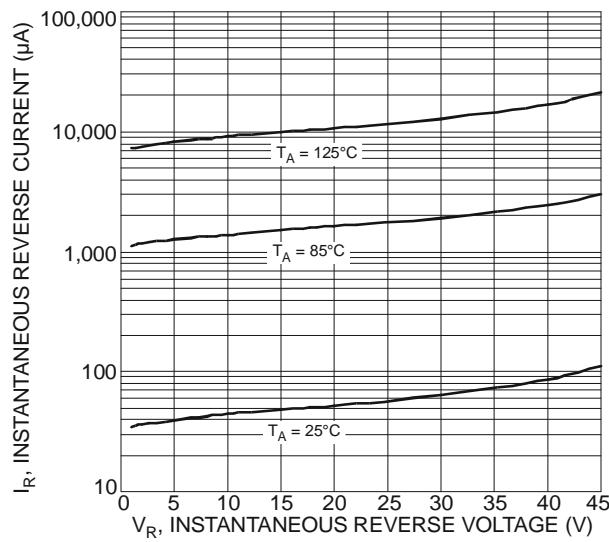


Fig. 3 Typical Reverse Characteristics

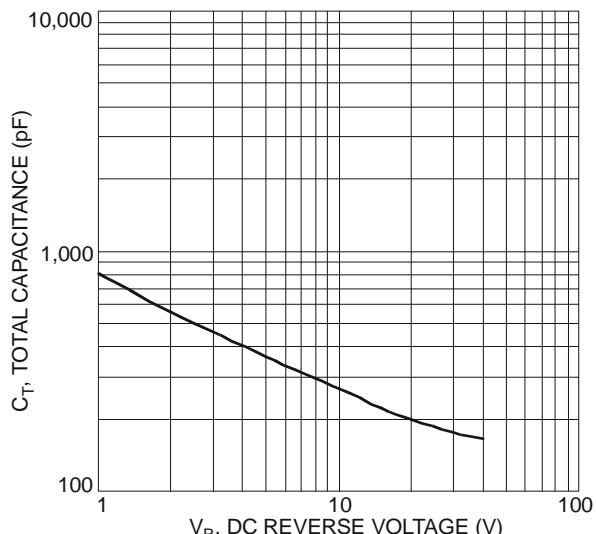


Fig. 4 Total Capacitance vs. Reverse Voltage

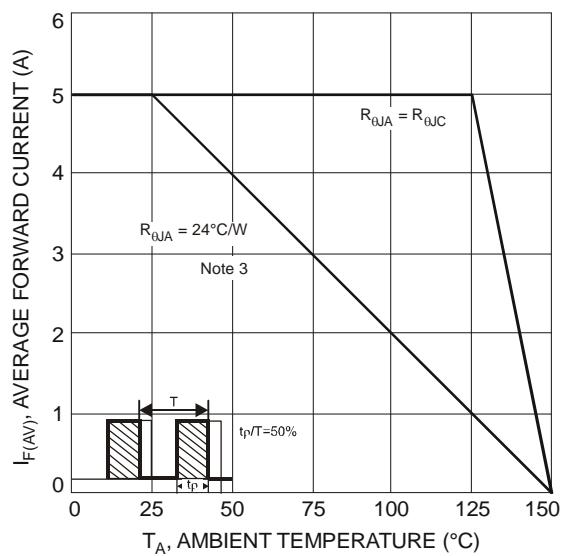
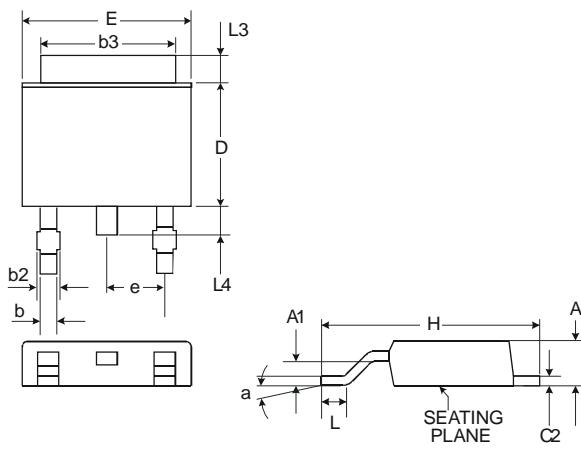


Fig. 5 Forward Current Derating Curve

Package Outline Dimensions



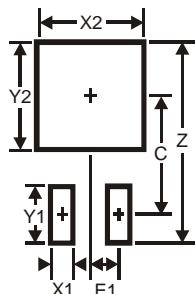
DPAK			
Dim	Min	Typ	Max
A	2.19	2.29	2.39
A1	0.97	1.07	1.17
b	0.64	0.76	0.88
b2	0.76	0.95	1.14
b3	5.21	5.33	5.50
C2	0.45	0.51	0.58
D	6.00	6.10	6.20
E	6.45	6.58	6.70
e	2.286 Typ.		
H	9.40	9.91	10.41
L	1.40	1.59	1.78
L3	0.88	1.08	1.27
L4	0.64	0.83	1.02
a	0°	-	10°
All Dimensions in mm			

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SBR545D1

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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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