

Features

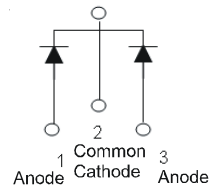
- Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**



Top View

Mechanical Data

- Case: TO263 (D²Pak)
- 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: 1.6 grams (approximate)



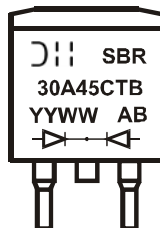
Package Pin-Out Configuration

Ordering Information (Notes 2 & 3)

Part Number	Qualification	Case	Packaging
SBR30A45CTB	Commercial	TO263	50 pieces/tube
SBR30A45CTB-G	Commercial	TO263	50 pieces/tube
SBR30A45CTB-13	Commercial	TO263	800/Tape & Reel
SBR30A45CTB-13-G	Commercial	TO263	800/Tape & Reel
SBR30A45CTBQ-13	Automotive	TO263	800/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
 2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30A45CTB-G.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR30A45CTB = 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 – 53)

SBR is a registered trademark of Diodes Incorporated.

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}		
Average Rectified Output Current @ $T_C = 150^\circ\text{C}$	I_O	30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	175	A
Repetitive Peak Avalanche Power (1 μs , 25 $^\circ\text{C}$)	P_{ARM}	8000	W

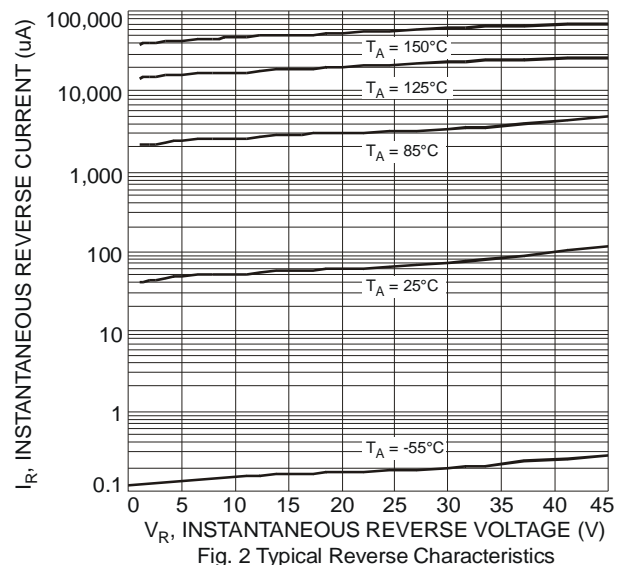
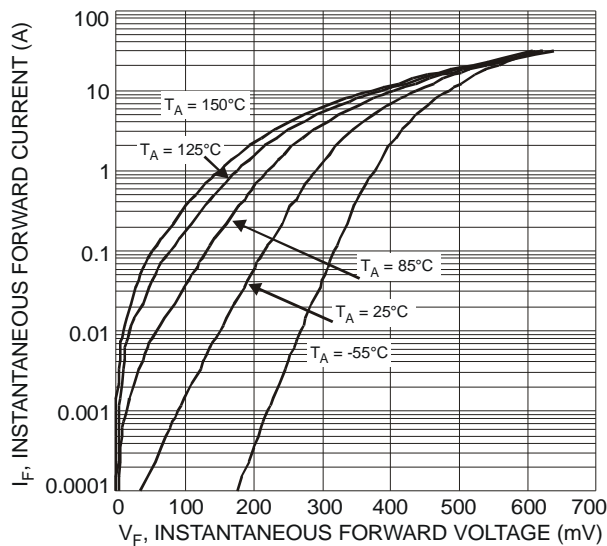
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg)			
Thermal Resistance Junction to Case	$R_{\theta JC}$	1.5	$^\circ\text{C}/\text{W}$
Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	16	
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 (per leg)	V_F	-	-	0.55	V	$I_F = 15\text{A}, T_J = 25^\circ\text{C}$
		-	-	0.52		$I_F = 15\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 5)	I_R	-	-	0.5	mA	$V_R = 45\text{V}, T_J = 25^\circ\text{C}$
		-	-	100		$V_R = 45\text{V}, T_J = 125^\circ\text{C}$

Notes: 4. Device mounted on additional heatsink, (Black Aluminum, 50mm x 37mm x 15mm)
5. Short duration pulse test used to minimize self-heating effect.



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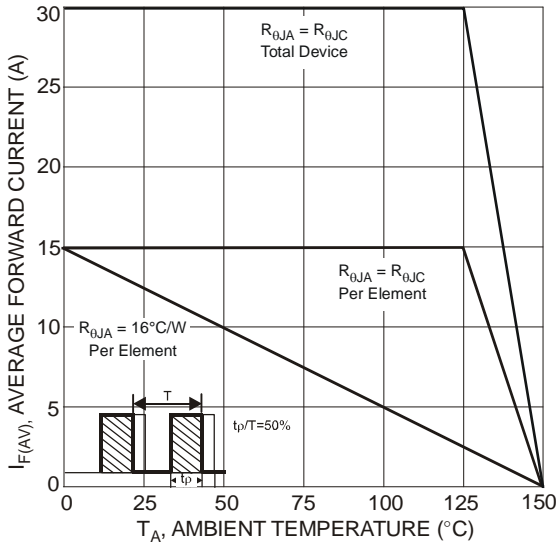


Fig. 3 Forward Current Derating Curve

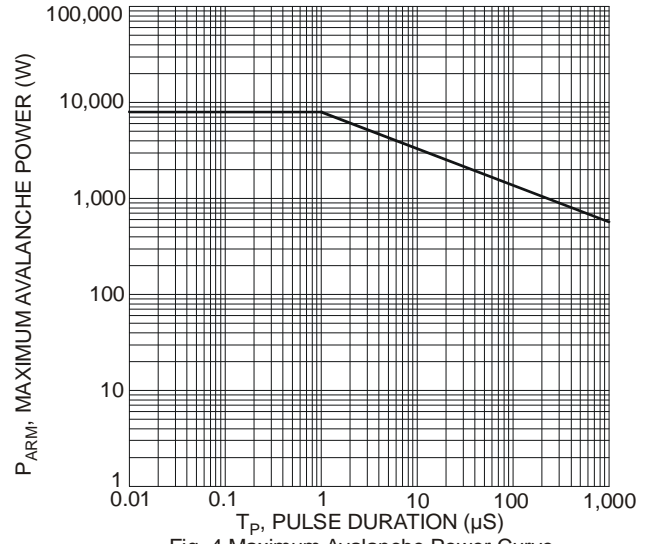
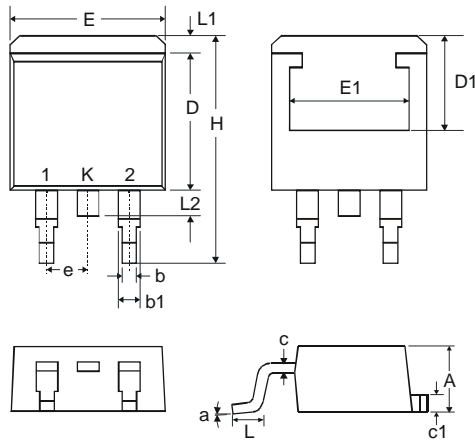


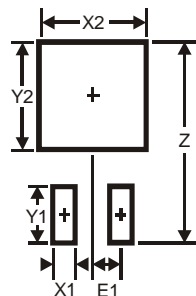
Fig. 4 Maximum Avalanche Power Curve

Package Outline Dimensions



TO263		
Dim	Min	Max
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	16.9
X1	1.1
X2	10.8
Y1	3.5
Y2	7.01
E1	2.5

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