

SBR30A45CTB

30A SBR[®] SUPER BARRIER RECTIFIER

Product Summary

V _{RRM} (V)	I ₀ (A)	V _{F(MAX)} (V) @ +25°C	I _{R(MAX)} (mA) @ +25°С
45	15 (Per leg)	0.55	0.5

Description and Applications

The SBR30A45CTB provides very low V_F and excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC/DC Converters
- AC/DC Adaptors

Features and Benefits

- Patented Trench SBR technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.
- Reduced ultra-low forward voltage drop (V_F); Better efficiency and cooler operation.
- Reduced high temperature reverse leakage; Increased reliability against thermal runaway failure in high temperature operation.
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: TO263 (D²PAK)
- Case Material: Molded Plastic, "Green" Molding compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Copper Lead frame. Solderable per MIL-STD-202, Method 208 (*)
- Polarity: See Below
- Weight: 1.6 grams (approximate)



Top View



Package Pin-Out Configuration

Ordering Information (Notes 4)

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) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied. 2. See http://www.diodes.com/guality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green"

 See nttp://www and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.



Marking Information



 $\begin{array}{l} {\sf SBR30A45CTB} = {\sf Product Type Marking Code} \\ {\sf AB} = {\sf Foundry and Assembly Code} \\ {\sf YYWW} = {\sf Date Code Marking} \\ {\sf YY} = {\sf Last two digits of year (ex: 14 = 2024)} \\ {\sf WW} = {\sf Week (01-53)} \end{array}$

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _{RM}	45	V
Average Rectified Output Current	lo	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 (1µs, 25°C)	P _{ARM}	8000	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (per leg) Thermal Resistance Junction to Case (Note 5) Thermal Resistance Junction to Ambient (Note 5)	R _{€JC} R _{€JA}	3 17	°C/W
Operating and Storage Temperature Range	TJ, T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	V _F	-	-	0.55 0.52	V	I _F = 15A, T _J = +25°C I _F = 15A, T _J = +125°C
Leakage Current (Note 6)	I _R	-		0.5 100		V _R = 45V, T _J = +25°C V _R = 45V, T _J = +125°C

Notes: 5. Device mounted on additional heatsink , (2inch*2inch Al board + 50mm*50mm*23mm Al heatsink.) 6. Short duration pulse test used to minimize self-heating effect.



SBR30A45CTB



Package Outline Dimensions



TO263				
Dim	Min	Max		
Α	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	_		
е	2.54 Typ			
Н	14.61	15.87		
L	1.78	2.79		
L1		1.67		
L2		1.77		
а	0°	8°		
All Dimensions in mm				

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Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.

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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