

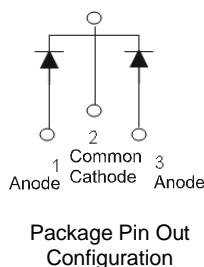
## Product Summary

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>F(MAX)</sub> (V) @ +25°C	I <sub>R(MAX)</sub> (mA) @ +25°C
100	10 (Per leg) 20 (Total)	0.85	0.1

## Description and Applications

The SBR20A100CTB provides very low V<sub>F</sub> 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



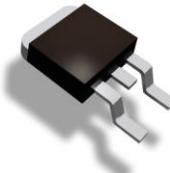
## Features and Benefits

- 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<sub>F</sub>); 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: TO263AB (D2PAK), TO263AB (D2PAK) (Type TH)
- 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 Leadframe Solderable per MIL-STD-202, Method 208
- Polarity: See Below
- Weight: 1.6 grams (Approximate)

TO263AB (D2PAK)  
TO263AB (D2PAK) (Type TH)



Top View

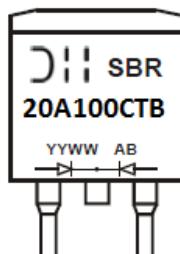
## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR20A100CTB	TO263AB (D2PAK)	50 Pieces/Tube
SBR20A100CTB-13	TO263AB (D2PAK)	800/Tape & Reel
SBR20A100CTB	TO263AB (D2PAK) (Type TH)	50 Pieces/Tube
SBR20A100CTB-13	TO263AB (D2PAK) (Type TH)	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/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" 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



DII = Manufacturer's Marking  
 SBR20A100CTB = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 16 = 2016)  
 WW = Week (01 to 53)

**Maximum Ratings (Per Leg) (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)**

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	100	V
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current (Per Leg) (Total)	$I_O$	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	250	A
Peak Repetitive Reverse Surge Current (2μs-1KHz)	$I_{RRM}$	3	A

**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Per Leg) (Note 5)	$R_{\theta JC}$	5	°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +175	°C

**Electrical Characteristics (Per Leg) (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)**

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	—	—	0.75	V	$I_F = 10\text{A}, T_J = +25^\circ\text{C}$ $I_F = 10\text{A}, T_J = +125^\circ\text{C}$ $I_F = 20\text{A}, T_J = +25^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	0.1 100	mA	$V_R = 100\text{V}, T_J = +25^\circ\text{C}$ $V_R = 100\text{V}, T_J = +125^\circ\text{C}$

Notes:  
 5. Device mounted on Aluminum substrate 2inch square.  
 6. Short duration pulse test used to minimize self-heating effect.

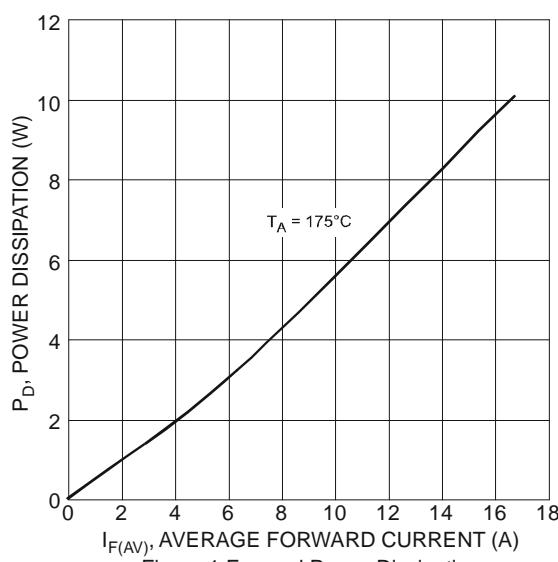


Figure 1 Forward Power Dissipation

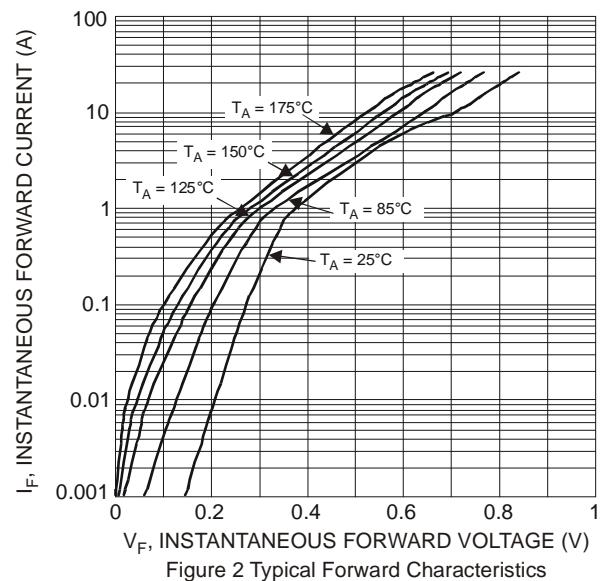


Figure 2 Typical Forward Characteristics

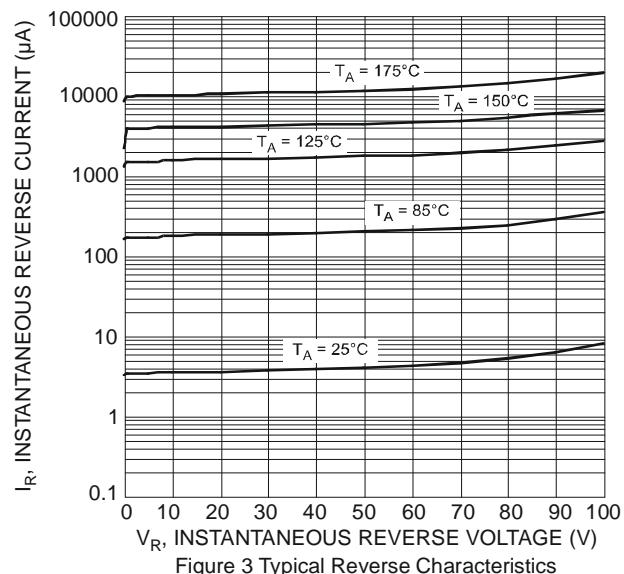


Figure 3 Typical Reverse Characteristics

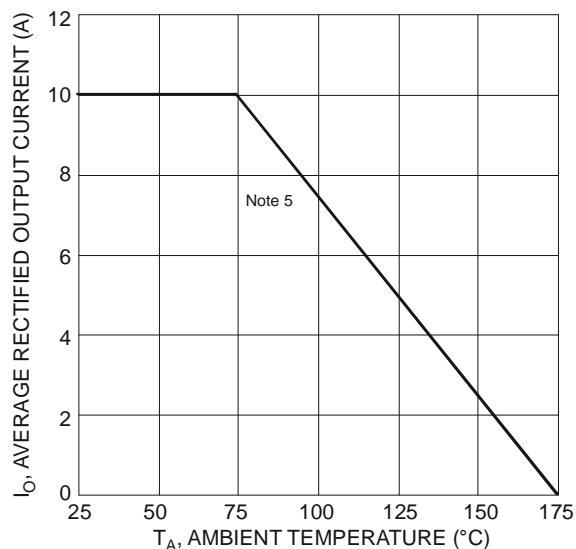
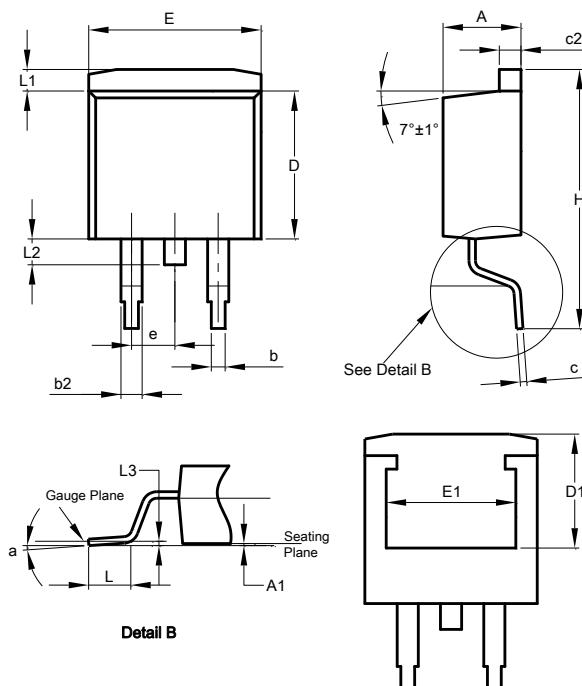


Figure 4 Forward Current Derating Curve

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO263AB (D2PAK)



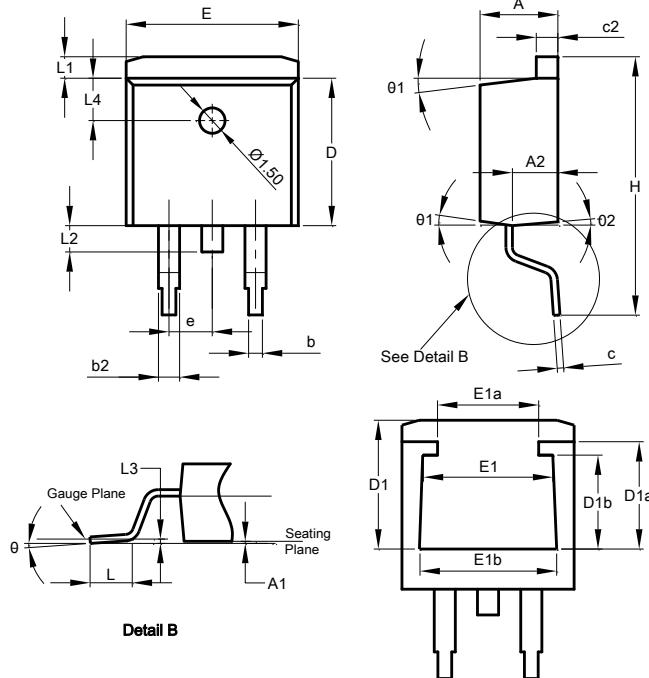
TO263AB (D2PAK)			
Dim	Min	Max	Typ
<b>A</b>	4.07	4.82	-
<b>A1</b>	0.00	0.25	-
<b>b</b>	0.51	0.99	-
<b>b2</b>	1.15	1.77	-
<b>c</b>	0.356	0.73	-
<b>c2</b>	1.143	1.65	-
<b>D</b>	8.39	9.65	-
<b>D1</b>	6.55	6.95	-
<b>e</b>	2.54 TYP		
<b>E</b>	9.66	10.66	-
<b>E1</b>	6.23	8.23	-
<b>H</b>	14.61	15.87	-
<b>L</b>	1.78	2.79	-
<b>L1</b>	-	1.67	-
<b>L2</b>	-	1.77	-
<b>L3</b>	-	-	0.254
<b>a</b>	$0^\circ$	$8^\circ$	-

All Dimensions in mm

## Package Outline Dimensions (Cont.)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO263AB (D2PAK) (Type TH)



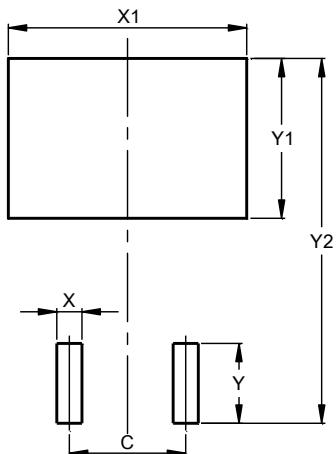
TO263AB (D2PAK) (Type TH)			
Dim	Min	Max	Typ
A	4.40	4.70	4.57
A1	0.00	0.20	0.10
A2	2.59	2.79	2.69
b	0.77	0.90	0.813
b2	1.20	1.36	1.27
c	0.356	0.47	0.381
c2	1.22	1.32	1.27
D	8.60	8.80	8.70
D1	6.60	7.80	7.60
D1a	5.33	6.53	6.33
D1b	4.54	5.74	5.54
e	2.54 BSC		
E	10.00	10.20	10.10
E1	6.67	7.87	7.67
E1a	4.94	6.14	5.94
E1b	7.06	8.26	8.06
H	14.70	15.50	15.10
L	2.00	2.60	2.30
L1	1.17	1.40	1.27
L2	1.45	1.70	1.55
L3	0.25 BSC		
L4	2.50 REF		
θ	0°	8°	5°
θ1	5°	9°	7°
θ2	1°	5°	3°

All Dimensions in mm

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO263AB (D2PAK), TO263AB (D2PAK) (Type TH)



Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

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