Product Summary

V_{RRM} (V)	Io (A)	$V_{F(MAX)}$ (V) @ +25°C	$I_{R(MAX)}$ (mA) @ +25°C
100	10 (Per leg) 20 (Total)	0.85	0.1

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)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at https://www.diodes.com/products/automotive/automotive-products/.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. https://www.diodes.com/quality/product-definitions**

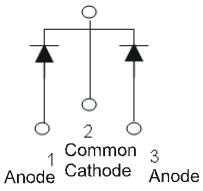
Description and Applications

The SBR20A100CTB 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

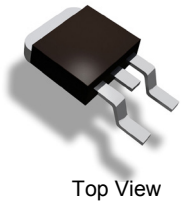
Mechanical Data

- 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 (e3)
- Polarity: See Below
- Weight: 1.6 grams (Approximate)



Package Pin Out Configuration

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



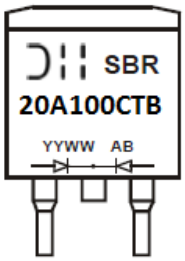
Top View

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) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ 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



= Manufacturer's Marking
SBR20A100CTB = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 20 = 2020)
WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@T_A = +25°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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	100	V
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°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	— — —	— 0.60 —	0.75 0.64 0.85	V	I_F = 10A, T_J = +25°C I_F = 10A, T_J = +125°C I_F = 20A, T_J = +25°C
Leakage Current (Note 6)	I_R	— —	— —	0.1 40	mA	V_R = 100V, T_J = +25°C V_R = 100V, T_J = +125°C

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

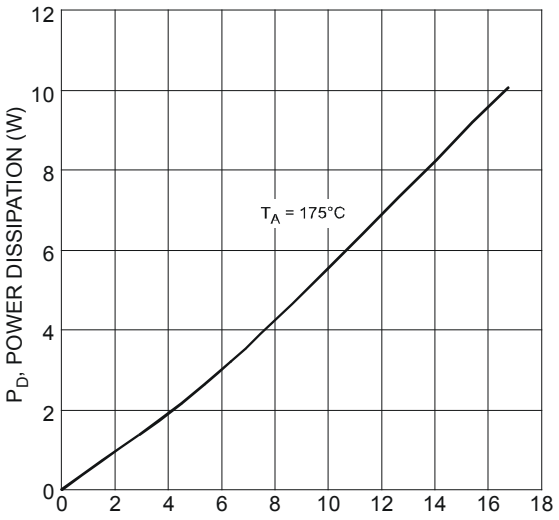


Figure 1 Forward Power Dissipation

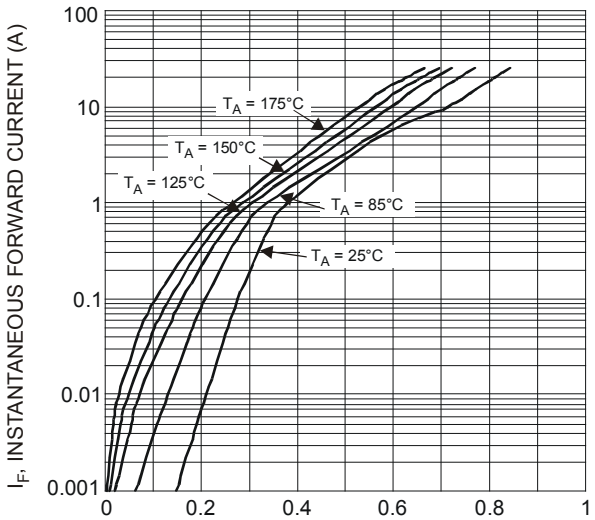


Figure 2 Typical Forward Characteristics

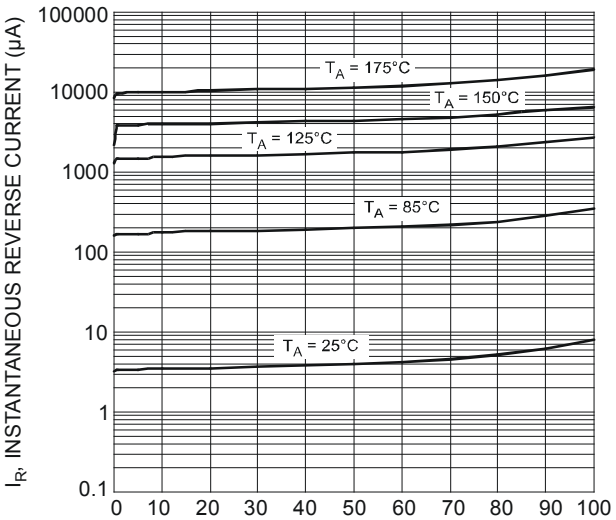


Figure 3 Typical Reverse Characteristics

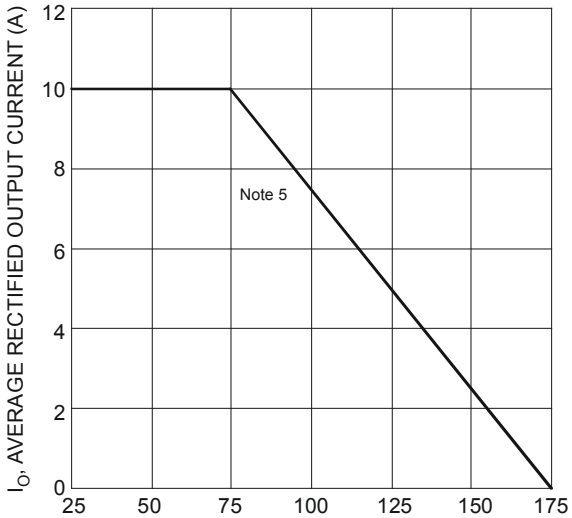
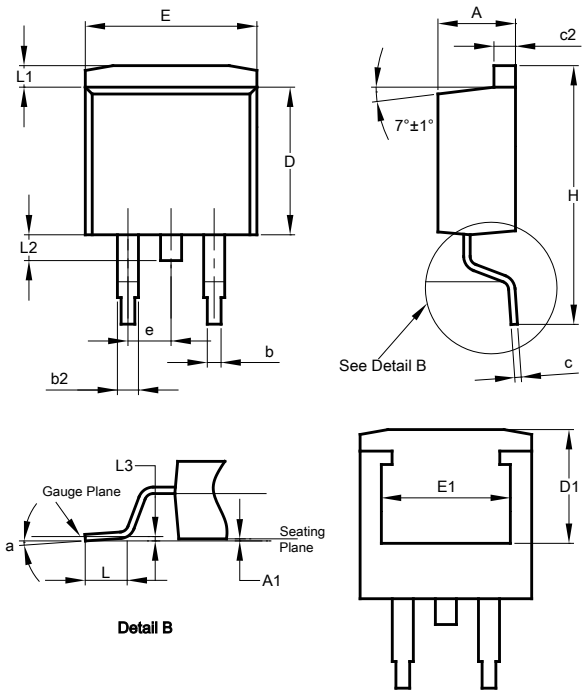


Figure 4 Forward Current Derating Curve

Package Outline Dimensions

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

TO263AB (D2PAK)

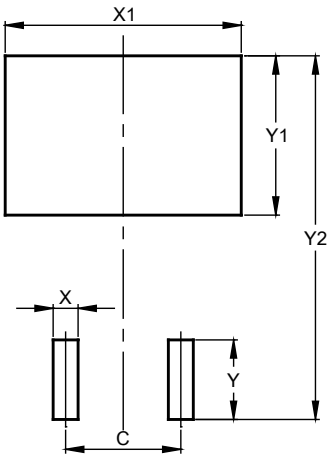


TO263AB (D2PAK)			
Dim	**Min**	**Max**	**Typ**
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	6.95	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
All Dimensions in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

Suggested Pad Layout

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

TO263AB (D2PAK)

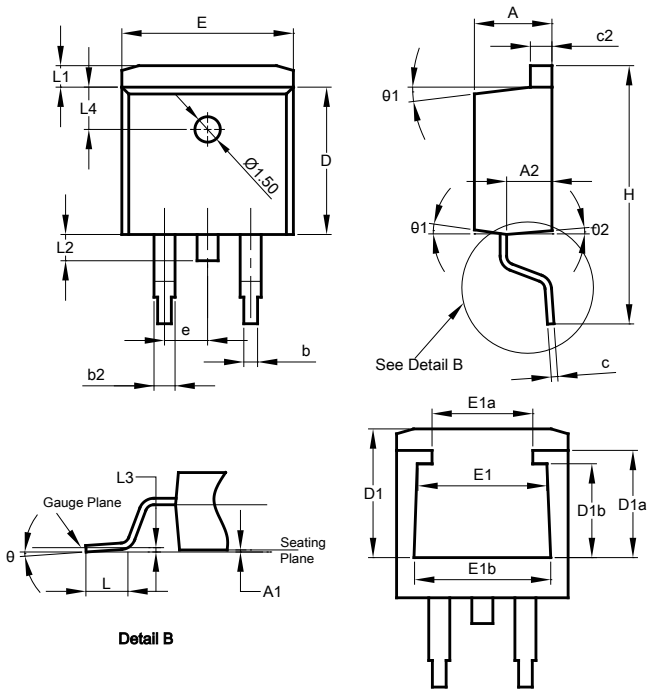


Dimensions	Value (in mm)
C	5.08
X	1.10
X1	10.41
Y	3.50
Y1	7.01
Y2	15.99

Package Outline Dimensions (Cont.)

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

TO263AB (D2PAK) (Type TH)

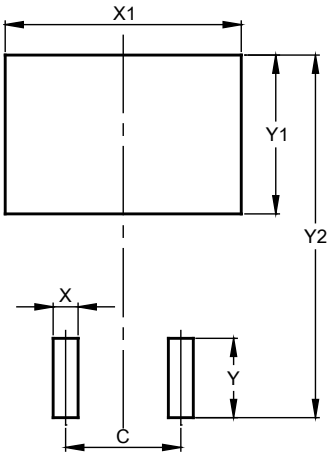


TO263AB (D2PAK) (Type TH)			
Dim	**Min**	**Max**	**Typ**
A	4.40	4.70	4.57
A1	0.00	0.20	0.10
A2	2.59	2.79	2.69
b	0.77	0.90	0.813
b2	1.20	1.36	1.27
c	0.356	0.47	0.381
c2	1.22	1.32	1.27
D	8.60	8.80	8.70
D1	6.60	7.80	7.60
D1a	5.33	6.53	6.33
D1b	4.54	5.74	5.54
e	2.54 BSC		
E	10.00	10.20	10.10
E1	6.67	7.87	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) (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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