

### Features

- Patented Trench SBR<sup>®</sup> 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
- Soft, Fast Switching Capability
- TO263AB (D2PAK)
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in “Green” Packages: TO263AB (D2PAK)
  - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
  - **Halogen and Antimony Free. “Green” Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

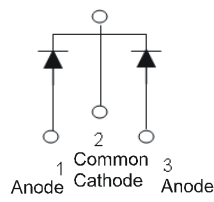
### Mechanical Data

- Case: TO263AB (D2PAK)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 1.6 grams (Approximate)
- Max Soldering Temperature +260°C for 30secs as per JEDEC J-STD-020

TO263AB (D2PAK)



Top View



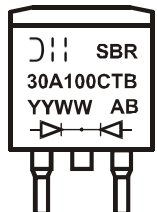
Package Pin-Out Configuration

### Ordering Information (Note 4)

	Part Number	Case	Packaging
	SBR30A100CTB	TO263AB (D2PAK)	50 Pieces/Tube
	SBR30A100CTB-13	TO263AB (D2PAK)	800/Tape & Reel
	SBR30A100CTB-G	TO263AB (D2PAK)	50 Pieces/Tube
	SBR30A100CTB-13-G	TO263AB (D2PAK)	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 [http://www.diodes.com/quality/lead\\_free/](http://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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

### Marking Information



= Manufacturer's Marking  
 SBR30A100CTB = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 18 = 2018)  
 WW = Week (01 to 53)

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , 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		$V_{RRM}$		V
Working Peak Reverse Voltage		$V_{RWM}$	100	
DC Blocking Voltage		$V_{RM}$		
Average Rectified Output Current @ $T_C = +150^\circ\text{C}$	Per Leg Total	$I_O$	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load		$I_{FSM}$	180	A
Repetitive Peak Avalanche Power (1 $\mu\text{s}$ , +25 $^\circ\text{C}$ )		$P_{ARM}$	8,000	W
Non-Repetitive Avalanche Energy ( $T_J = +25^\circ\text{C}$ , $I_{AS} = 7.5\text{A}$ , $L = 8.5\text{mH}$ )		$E_{AS}$	480	mJ

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction to Case (Per Leg) (Note 5)	$R_{\theta JC}$	3	$^\circ\text{C/W}$
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)	$V_F$	-	0.78	0.85	V	$I_F = 15\text{A}, T_J = +25^\circ\text{C}$ $I_F = 15\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	-	-	100	$\mu\text{A}$	$V_R = 100\text{V}, T_J = +25^\circ\text{C}$
				10	mA	$V_R = 100\text{V}, T_J = +125^\circ\text{C}$

Notes: 5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect.

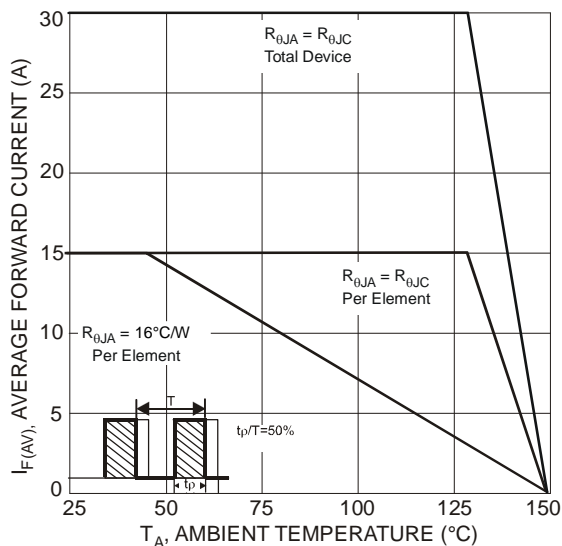


Figure 1 Forward Current Derating Curve

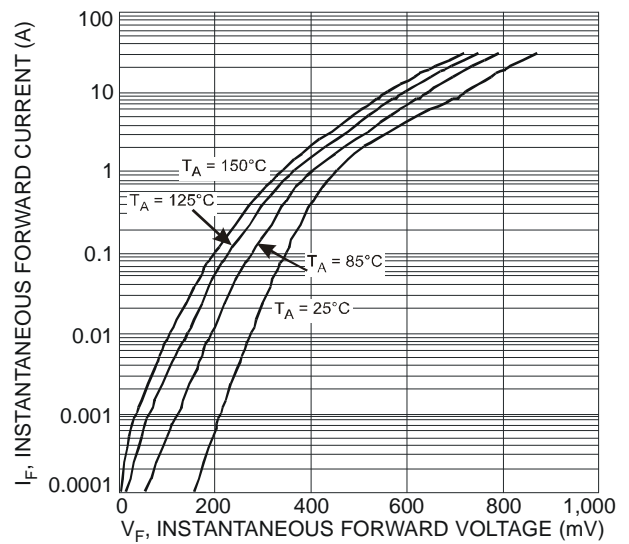
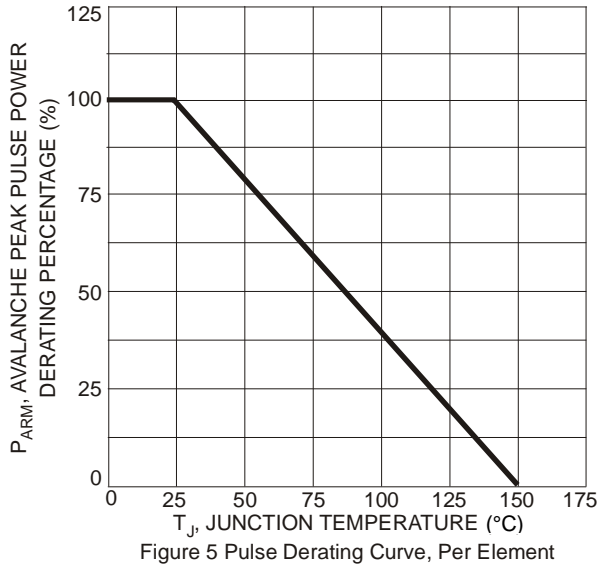
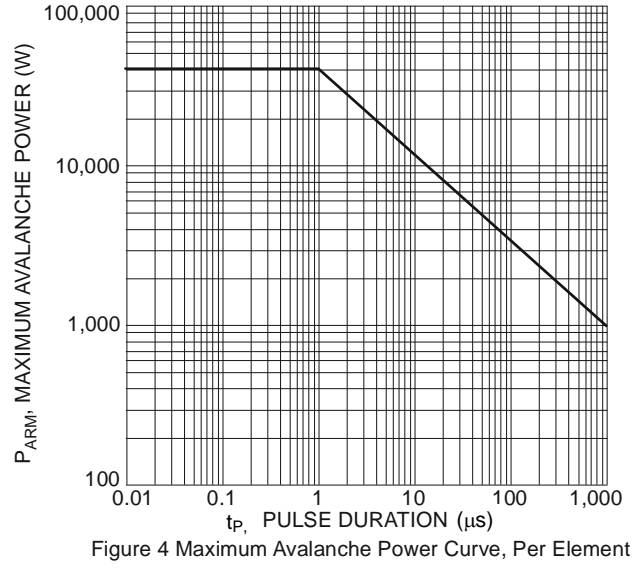
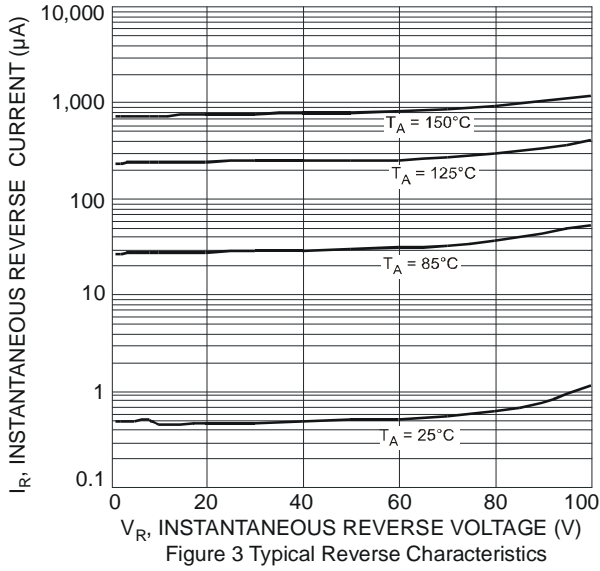


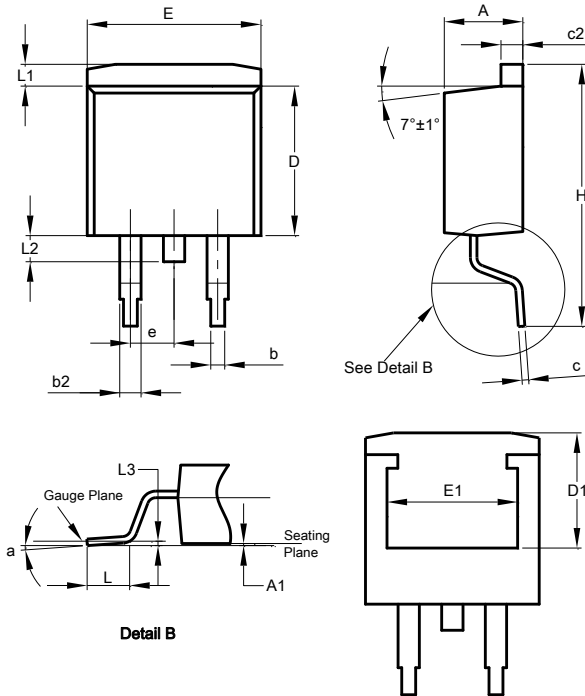
Figure 2 Typical Forward Characteristics



**Package Outline Dimensions**

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

**TO263AB (D2PAK)**

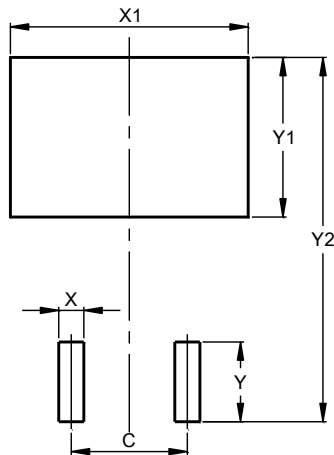


TO263AB (D2PAK)			
Dim	Min	Max	Typ
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	6.95	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
<b>All Dimensions in mm</b>			

**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

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