

## Features

- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Excellent High-Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- Also Available in Green Molding Compound (Note 4)

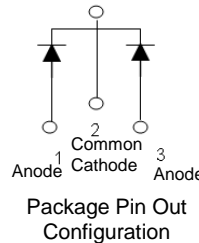
## Mechanical Data

- Case: TO263AB (D<sup>2</sup>PAK)
- 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)

TO263AB (D<sup>2</sup>PAK)



Top View



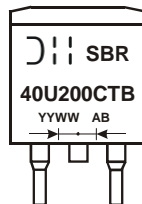
## Ordering Information (Notes 5)

Part Number	Case	Packaging
SBR40U200CTB	TO263AB (D <sup>2</sup> PAK)	50 Pieces/Tube
SBR40U200CTB-G (Note 4)	TO263AB (D <sup>2</sup> PAK)	50 Pieces/Tube
SBR40U200CTB-13	TO263AB (D <sup>2</sup> PAK)	800/Tape & Reel
SBR40U200CTB-13-G (Note 4)	TO263AB (D <sup>2</sup> PAK)	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 Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR40U200CTB-G.
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



SBR40U200CTB = Product Type Marking Code  
 AB = Foundry and Assembly Code (if applicable)  
 YYWW = Date Code Marking  
 YY = Year (ex: 15 = 2015)  
 WW = Week (01 - 53)

**Maximum Ratings** (@T<sub>A</sub> = +25°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 <sub>RRM</sub>	200	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current @ T <sub>C</sub> = +100°C	I <sub>O</sub>	40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	240	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (per leg)	R <sub>θJC</sub> R <sub>θJA</sub>	2 7	°C/W
Thermal Resistance Junction to Case (Note 6)			
Thermal Resistance, Junction to Ambient (Note 6)			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C unless, otherwise specified)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	V <sub>F</sub>	-	0.85 0.70	0.93 0.75	V	I <sub>F</sub> = 20A, T <sub>J</sub> = +25°C I <sub>F</sub> = 20A, T <sub>J</sub> = +125°C
Leakage Current (Note 7)	I <sub>R</sub>	-	-	0.2 40	mA	V <sub>R</sub> = 200V, T <sub>J</sub> = +25°C V <sub>R</sub> = 200V, T <sub>J</sub> = +125°C
Reverse Recovery Time	t <sub>rr</sub>	-	38	50	nS	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A, I <sub>RR</sub> = 0.25A
		-	25	35		I <sub>F</sub> = 1A, V <sub>R</sub> = 30V di/dt = 100A/μs, T <sub>J</sub> = +25°C

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

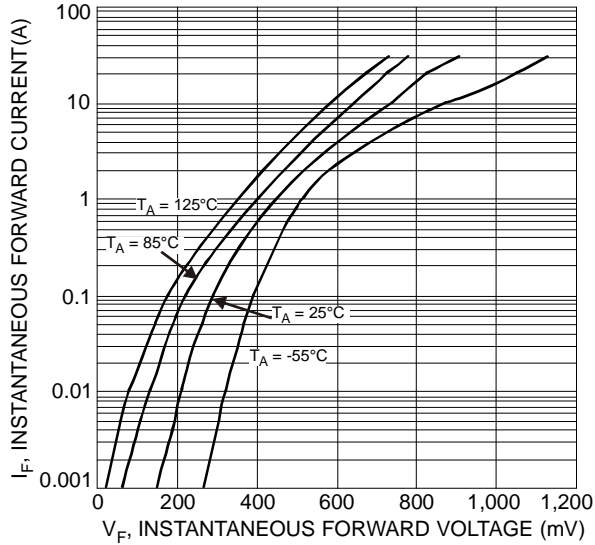


Fig. 1 Typical Forward Characteristics

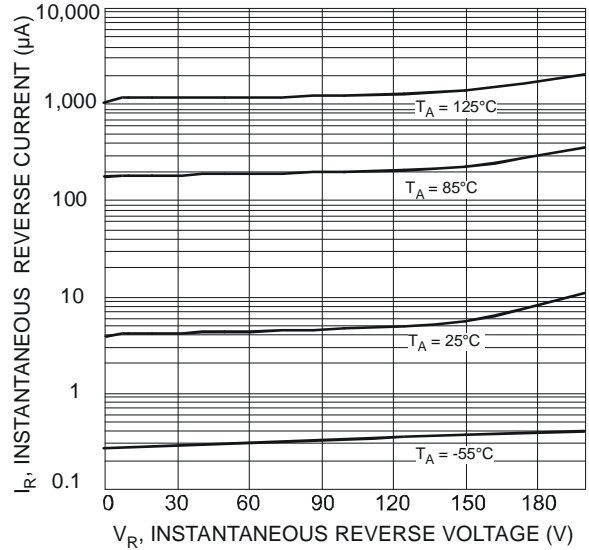


Fig. 2 Typical Reverse Characteristics

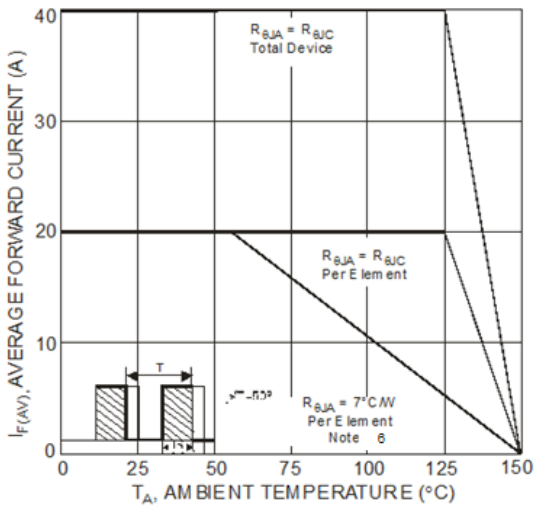
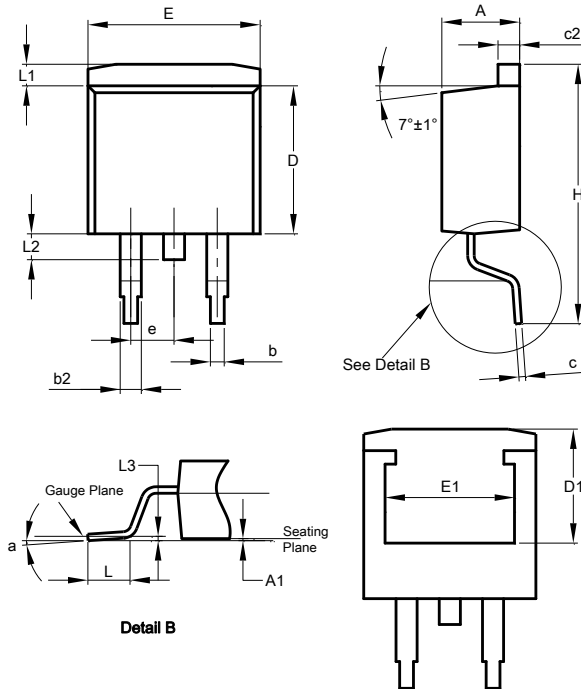


Fig. 3 Forward Current Derating Curve

**Package Outline Dimensions**

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

**TO263AB (D<sup>2</sup>PAK)**

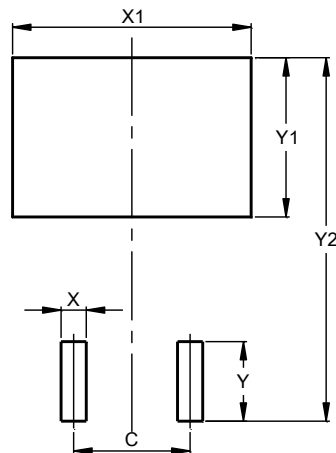


TO263AB (D <sup>2</sup> PAK)			
Dim	Min	Max	Typ
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	6.95	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
<b>All Dimensions in mm</b>			

**Suggested Pad Layout**

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

**TO263AB (D<sup>2</sup>PAK)**



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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