



**THE DATASHEET OF
SBR40U200CTB-13**



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)

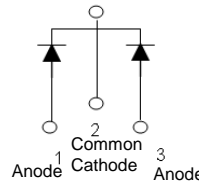
Mechanical Data

- Case: TO263AB (D²PAK)
- 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 (D²PAK)



Top View



Package Pin Out Configuration

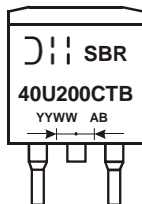
Ordering Information (Notes 5)

Part Number	Case	Packaging
SBR40U200CTB	TO263AB (D ² PAK)	50 Pieces/Tube
SBR40U200CTB-G (Note 4)	TO263AB (D ² PAK)	50 Pieces/Tube
SBR40U200CTB-13	TO263AB (D ² PAK)	800/Tape & Reel
SBR40U200CTB-13-G (Note 4)	TO263AB (D ² 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 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_A = +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 _{RRM}	200	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current @ T _C = +100°C	I _O	40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	240	A

Thermal Characteristics

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

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

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

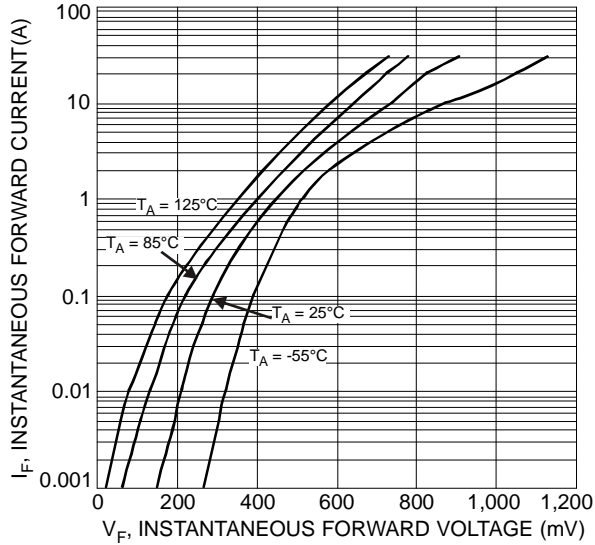


Fig. 1 Typical Forward Characteristics

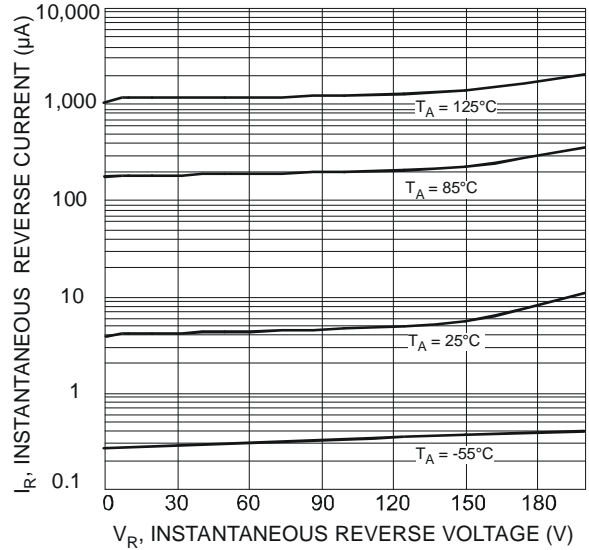


Fig. 2 Typical Reverse Characteristics

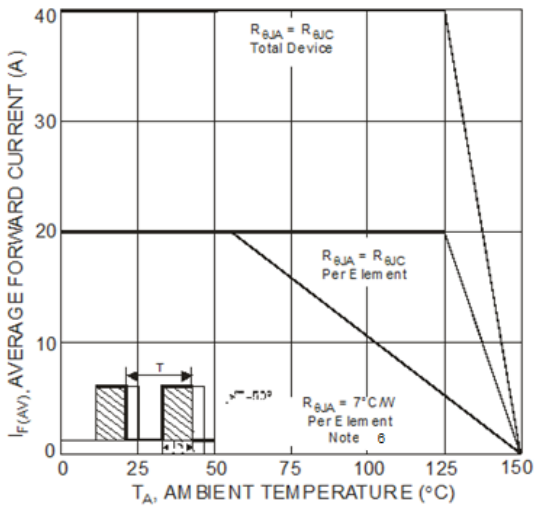
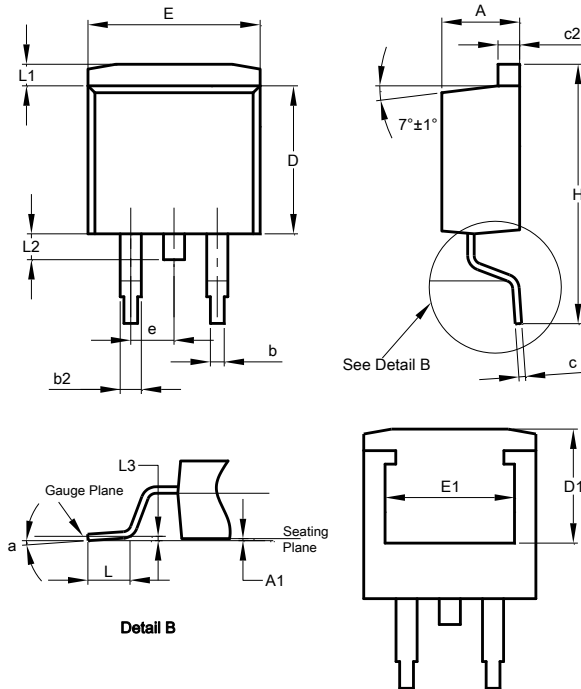


Fig. 3 Forward Current Derating Curve

Package Outline Dimensions

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

TO263AB (D²PAK)

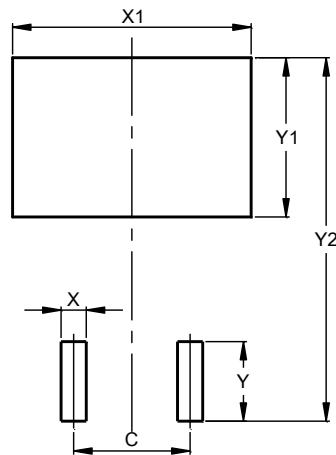


TO263AB (D ² PAK)			
Dim	Min	Max	Typ
A	4.07	4.82	-
A1	0.00	0.25	-
b	0.51	0.99	-
b2	1.15	1.77	-
c	0.356	0.73	-
c2	1.143	1.65	-
D	8.39	9.65	-
D1	6.55	6.95	-
e	2.54 TYP		
E	9.66	10.66	-
E1	6.23	8.23	-
H	14.61	15.87	-
L	1.78	2.79	-
L1	-	1.67	-
L2	-	1.77	-
L3	-	-	0.254
a	0°	8°	-
All Dimensions in mm			

Suggested Pad Layout

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