SBR20A200CTB

20A SBR®
SUPER BARRIER RECTIFIER

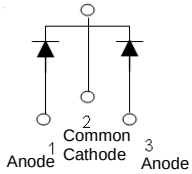
Features

- Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

Mechanical Data

- Case: D^2Pak
- 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)

Top View



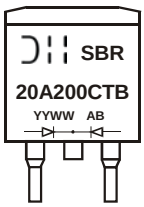
Package Pin Out Configuration

Ordering Information (Notes 2 & 3)

Part Number	Case	Packaging
SBR20A200CTB	D^2Pak	50 pieces/tube
SBR20A200CTB-G	D^2Pak	50 pieces/tube
SBR20A200CTB-13	D^2Pak	800/Tape & Reel
SBR20A200CTB-13-G	D^2Pak	800/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR20A200CTB-G.
3. For packaging details, go to our website at http://www.diodes.com.

Marking Information



SBR20A200CTB = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 07 = 2007)
WW = Week (01 - 53)

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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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	200	V
Average Rectified Output Current @ T_C = 150ºC	I_O	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	180	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg) Thermal Resistance Junction to Case (Note 4) Thermal Resistance, Junction to Ambient (Note 4)	 $R_{\theta JC}$ $R_{\theta JA}$	 4 43	ºC/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	- - 0.66	0.86 0.96 0.72	V	I_F = 10A, T_J = 25ºC I_F = 20A, T_J = 25ºC I_F = 10A, T_J = 125ºC
Leakage Current (Note 5)	I_R	-	0.003 0.51	0.1 10	mA	V_R = 200V, T_J = 25ºC V_R = 200V, T_J = 125ºC
Reverse Recovery Time	t_{rr}	- -	24 20	30 25	ns	I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A I_F = 1A, V_R = 30V, di/dt = 100A/µs, T_J = 25ºC

Notes: 4. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf
5. Short duration pulse test used to minimize self-heating effect.

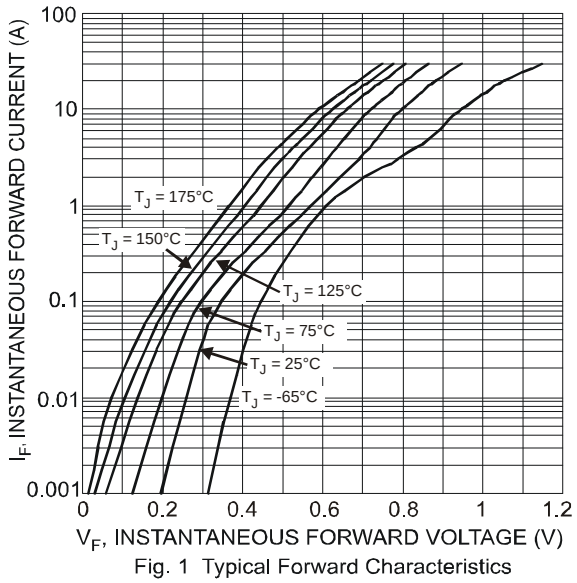


Fig. 1 Typical Forward Characteristics

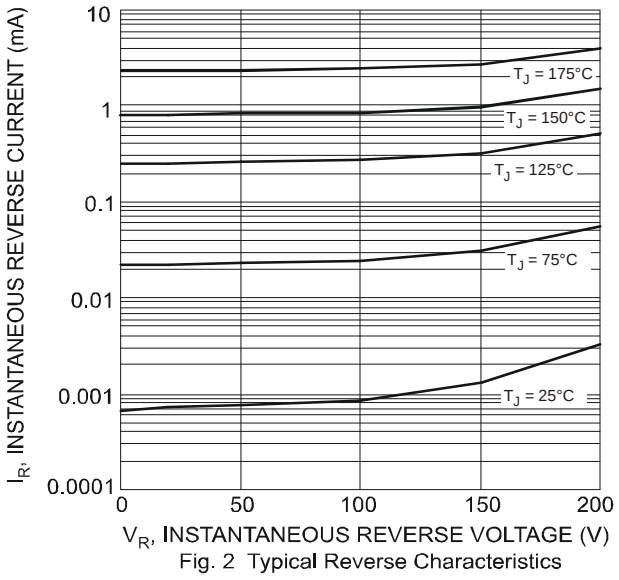


Fig. 2 Typical Reverse Characteristics

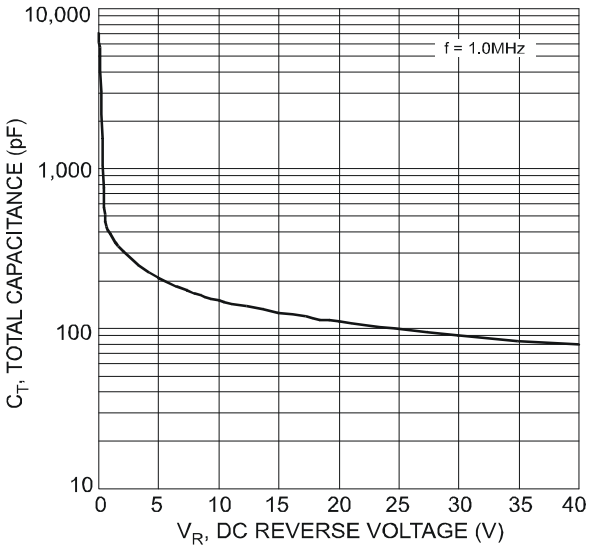


Fig. 3 Total Capacitance vs. Reverse Voltage

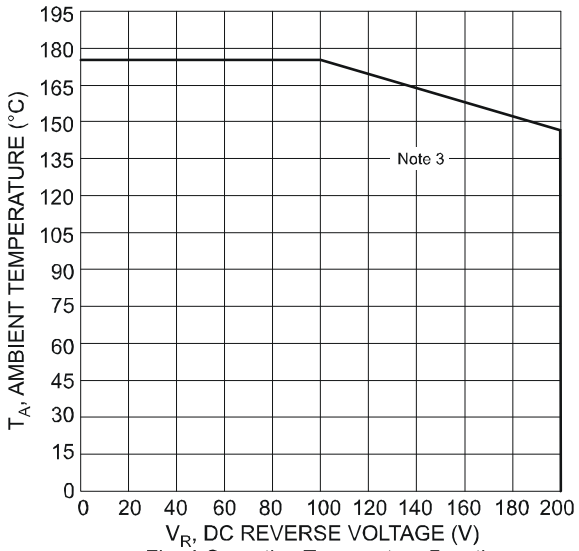
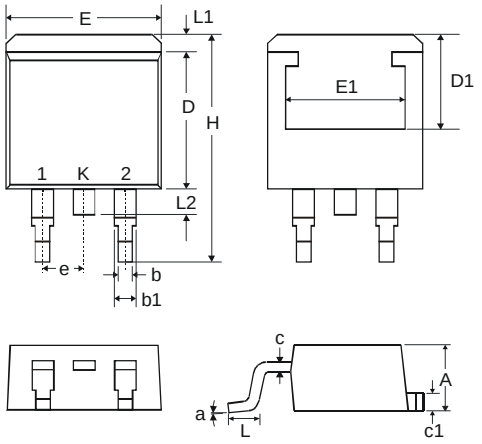


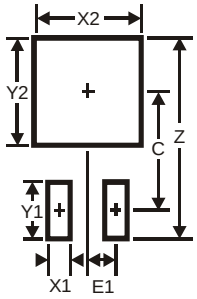
Fig. 4 Operating Temperature Derating

Package Outline Dimensions



D^2PAK		
Dim	**Min**	**Max**
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	16.9
X1	1.1
X2	10.8
Y1	3.5
Y2	11.4
C	9.5
E1	2.5

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