

## Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**

## Mechanical Data

- Case: TO-220AB, ITO-220AB, D<sup>2</sup>Pak
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: TO-220AB – 2.1 grams (approximate)  
 ITO-220AB – 1.9 grams (approximate)  
 D<sup>2</sup>Pak – 1.6 grams (approximate)



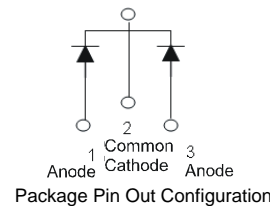
TO-220AB



ITO-220AB



D<sup>2</sup>Pak



## 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>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	141	V
Average Rectified Output Current @ T <sub>C</sub> = 140°C	I <sub>O</sub>	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	150	A
Peak Repetitive Reverse Surge Current (2µs-1KHz)	I <sub>RRM</sub>	3	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg) Package = TO-220AB & D <sup>2</sup> Pak Package = ITO-220AB	R <sub>θJC</sub>	2 4	°C/W
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
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	200	-	-	V	I <sub>R</sub> = 0.2mA
Forward Voltage Drop	V <sub>F</sub>	-	0.60	0.82	V	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C
			-	0.65		I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C
			-	0.88		I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C
Leakage Current (Note 1)	I <sub>R</sub>	-	-	0.2	mA	V <sub>R</sub> = 200V, T <sub>J</sub> = 25°C
				25		V <sub>R</sub> = 200V, T <sub>J</sub> = 125°C
Reverse Recovery Time	t <sub>rr</sub>	-	24	30	ns	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A, I <sub>RR</sub> = 0.25A
			-	20		25

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
 2. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7*.

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SBR10U200

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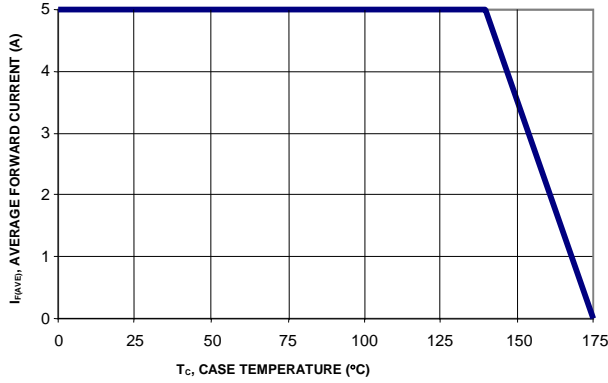


Figure 1: Current Derating Curve, Per Element

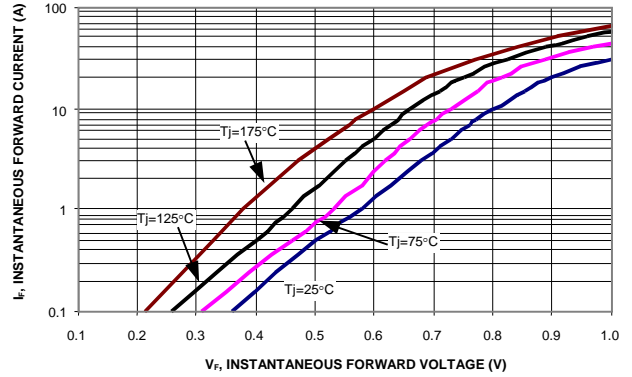


Figure 2: Typical Forward Characteristics, Per Element

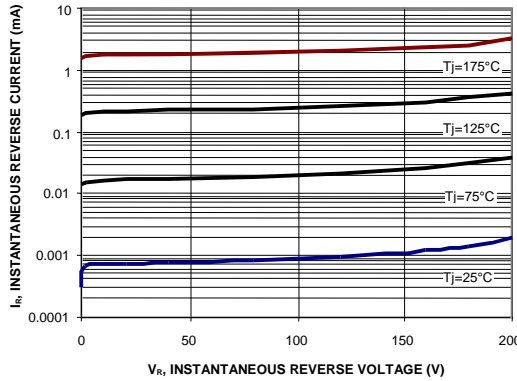


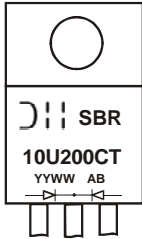
Figure 3: Typical Reverse Characteristics, Per Element

**Ordering Information** (Note 3)

Part Number	Case	Packaging
SBR10U200CT	TO-220AB	50 pieces/tube
SBR10U200CTFP	ITO-220AB	50 pieces/tube
SBR10U200CTB	D <sup>2</sup> Pak	50 pieces/tube

Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

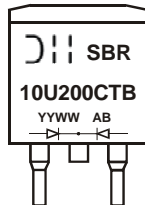
**Marking Information**



SBR10U200CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year, ex: 06 = 2006  
WW = Week (01-52)

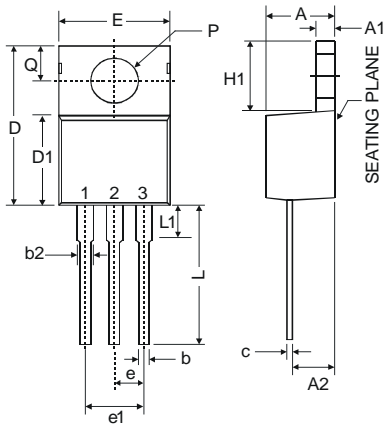


SBR10U200CTFP = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year, ex: 06 = 2006  
WW = Week (01-52)

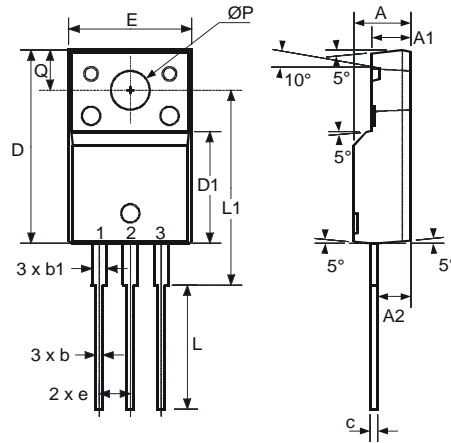


SBR10U200CTB = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year, ex: 06 = 2006  
WW = Week (01-52)

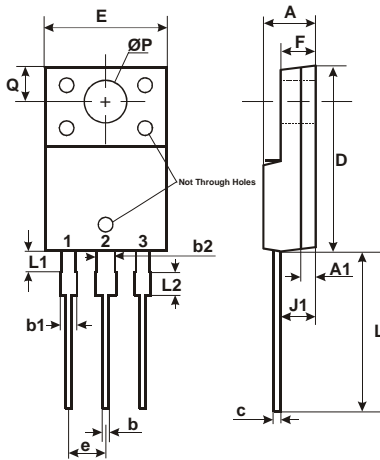
**Package Outline Dimensions**



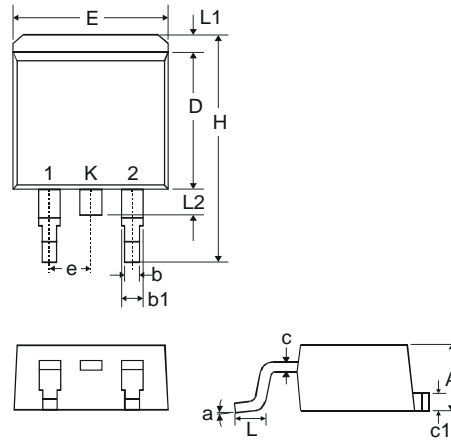
TO-220AB			
Dim	Min	Typ	Max
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e	2.54		
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
All Dimensions in mm			



ITO-220AB (Note 4)			
Dim	Min	Typ	Max
A	4.50	4.70	4.90
A1	3.04	3.24	3.44
A2	2.56	2.76	2.96
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
c	0.50	0.60	0.70
D	15.67	15.87	16.07
D1	8.99	9.19	9.39
e	2.54		
E	9.91	10.11	10.31
L	9.45	9.75	10.05
L1	15.80	16.00	16.20
P	2.98	3.18	3.38
Q	3.10	3.30	3.50
All Dimensions in mm			



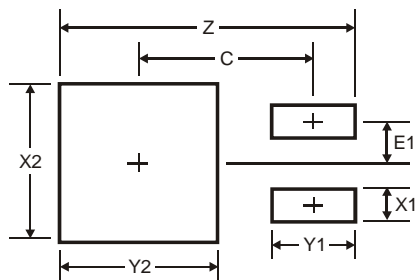
ITO-220AB ALTERNATE (Note 4)		
DIM.	MIN.	MAX.
A	4.30	4.70
A1	1.3	
b	0.50	0.75
b1	1.10	1.35
b2	1.50	1.75
c	0.50	0.75
D	14.80	15.20
E	9.96	10.36
e	2.54 typ	
F	2.80	3.20
J1	2.50	2.90
L	12.80	13.60
L1	1.70	1.90
L2	1.90	2.10
ØP	3.50 typ	
Q	2.70 typ	
All Dimensions in mm		



D²PAK		
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
E	9.66	10.66
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		

Notes: 4. For product manufactured with Date Code 0733 (week 33, 2007) and newer, please refer to ITO-220AB dimensions. For product manufactured prior to Date Code 0733, please refer to ITO-220AB ALTERNATE dimensions.

**Suggested Pad Layout**



D²Pak	
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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