

## 20A SBR<sup>®</sup> SUPER BARRIER RECTIFIER

### **Features**

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

### **Mechanical Data**

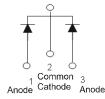
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe.
   Solderable per MIL-STD-202, Method 208 63
- Weight: TO-220AB 1.85 grams (approximate)
   ITO-220AB 1.65 grams (approximate)











TO-220AB Top View

TO-220AB Bottom View

ITO-220AB Top View

ITO-220AB Bottom View

Package Pin Out Configuration

## Ordering Information (Notes 4 and 5)

	Part Number	Case	Packaging
Pro)	SBR20150CT	TO-220AB	50 pieces/tube
Ph	SBR20150CT-G	TO-220AB	50 pieces/tube
P	SBR20150CTFP	ITO-220AB	50 pieces/tube
Green	SBR20150CTFP-G	ITO-220AB	50 pieces/tube
Po	SBR20150CTFP-JT	ITO-220AB (Alternate)	50 pieces/tube
Green	SBR20150CTFP-JT-G	ITO-220AB (Alternate)	50 pieces/tube

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 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: SBR20150CT-G.
- 5. For packaging details, go to our website at http://www.diodes.com.

## **Marking Information**



SBR20150CT = 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 - 53)



SBR20150CTFP = 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 - 53)



## Maximum Ratings (Per Leg) (@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	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	150	V
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current (Per Leg) (Total)	lo	10 20	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	150	А
Peak Repetitive Reverse Surge Current (2µS - 1Khz)	I <sub>RRM</sub>	2	Α
Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec.	V <sub>AC</sub>	2000	V

# Thermal Characteristics (Per Leg)

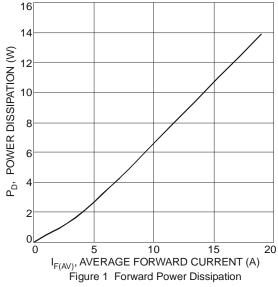
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance			
Package = TO-220AB	$R_{ heta JC}$	2	°C/W
Package = ITO-220AB	•	4	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

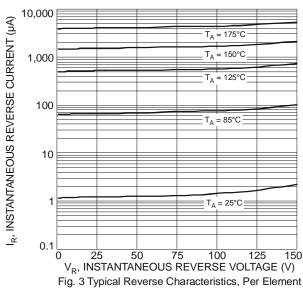
## Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

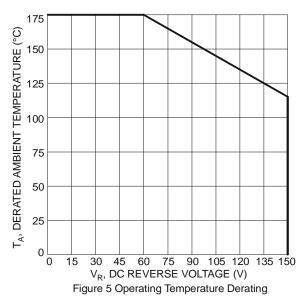
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	-	- 0.71	0.88 0.79	I V	I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	-	-	0.1 10	mA	V <sub>R</sub> = 150V, T <sub>J</sub> = +25°C V <sub>R</sub> = 150V, T <sub>J</sub> = +125°C

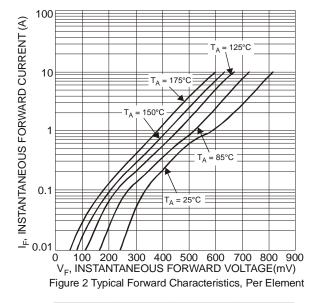
Notes: 6. Short duration pulse test used to minimize self-heating effect.

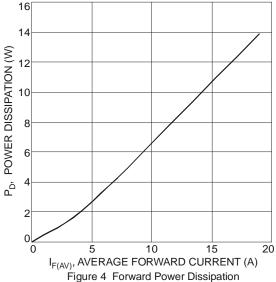








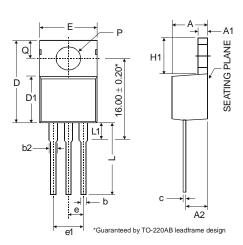




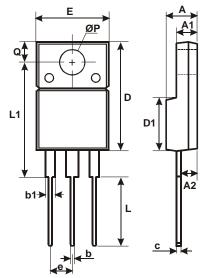


# **Package Outline Dimensions**

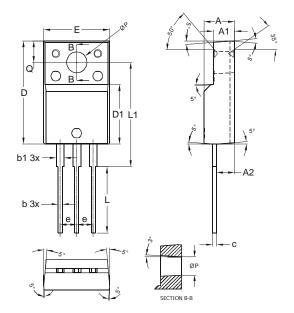
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



TO-220AB				
Dim	Min	Тур	Max	
Α	3.56	•	4.82	
<b>A1</b>	0.51	ı	1.39	
A2	2.04	1	2.92	
b	0.39	0.81	1.01	
b2	1.15	1.24	1.77	
С	0.356	1	0.61	
D	14.22	ı	16.51	
D1	8.39	1	9.01	
е	2.54			
e1		5.08		
Е	9.66	ı	10.66	
H1	5.85	-	6.85	
L	12.70	-	14.73	
L1	-	-	6.35	
Р	3.54	-	4.08	
q	2.54	-	3.42	
All Dimensions in mm				



ITO-220AB					
Alternate					
Dim	Dim Min				
Α	4.36	4.77			
A1	2.54	3.1			
A2	2.54	2.8			
b	0.55	0.75			
b1	1.2	1.5			
C	0.38	0.68			
D	14.5	15.5			
D1	8.38	8.89			
Е	9.72	10.27			
е	2.41	2.67			
٦	9.87	10.67			
L1	15.8	17			
ØΡ	3.08	3.39			
Ø	2.6	3.0			
All Dimensions in mm					



ITO-220AB				
Dim	Min	Тур	Max	
Α	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	
С	0.50	0.60	0.70	
ם	15.67	15.87	16.07	
D1	8.99	9.19	9.39	
е	2.54			
Е	9.91	10.11	10.31	
L	9.45	9.75	10.05	
L1	15.80	16.00	16.20	
Р	2.98	3.18	3.38	
ø	3.10	3.30	3.50	
All Dimensions in mm				



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