

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

## **Product Summary (Per leg)**

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F (MAX)</sub> (V) @ +25°C	I <sub>R (MAX)</sub> (mA) @ +25°C
150	10	0.82	0.1

## **Features and Benefits**

- 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)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Also Available in Green Molding Compound

#### **Application**

- Switching Power Supplies
- DC-DC Converters
- · Freewheeling Diodes

#### **Mechanical Data**

- Case: TO-220AB, ITO-220AB, ITO-220AB (Type E)
- 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 (3)
- Weight: TO-220AB 1.85 grams (Approximate)
   ITO-220AB 1.65 grams (Approximate)



TO-220AB Top View



TO-220AB Bottom View



ITO-220AB Top



ITO-220AB Bottom View



Package Pin Out Configuration

## Ordering Information (Notes 4 & 5)

	Part Number	Case	Packaging
Pro)	SBR20A150CT	TO-220AB	50 pieces/tube
Phy	SBR20A150CT-G	TO-220AB	50 pieces/tube
Pv)	SBR20A150CTFP	ITO-220AB	50 pieces/tube
Creen	SBR20A150CTFP-G	ITO-220AB	50 pieces/tube
Ph. Green	SBR20A150CTFP-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/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: SBR20A150CT-G.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

## **Marking Information**



SBR20A150CT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two Digits of Year (ex: 14 = 2014) WW = Week (01 – 53)



SBR20A150CTFP = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two Digits of Year (ex: 14 = 2014) WW = Week (01 – 53)



#### Maximum Ratings (Per Leg) (@TA = +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 <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	150	٧
Average Rectified Output Current Per Device (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>	180	А
Peak Repetitive Reverse Surge Current (2µS-1Khz)	I <sub>RRM</sub>	3	A
Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec.	Vac	2,000	V

# Thermal Characteristics (Per Leg)

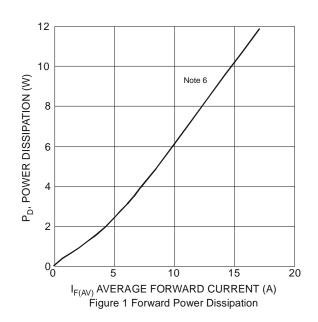
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 6) Package = TO-220AB Package = ITO-220AB	$R_{ heta JC}$	2 4	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

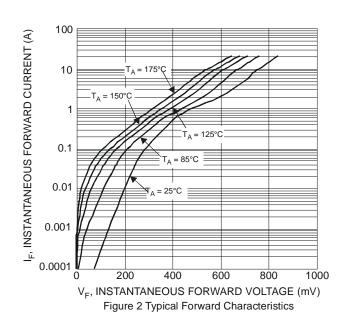
# Electrical Characteristics (Per Leg) (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	1 1	— 0.64	0.82 0.68	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 7)	I <sub>R</sub>		1	0.1 10	I IIIA	$V_R = 150V, T_J = +25^{\circ}C$ $V_R = 150V, T_J = +125^{\circ}C$

Notes: 6. Device mounted on additional heatsink, (50mm x 50mm x 23mm Al heatsink).

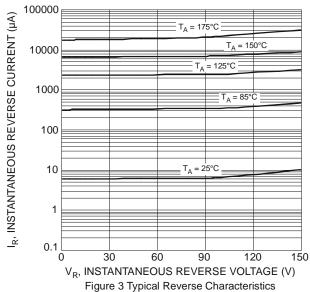
<sup>7.</sup> Short duration pulse test used to minimize self-heating effect.

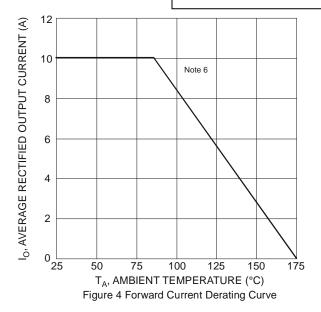






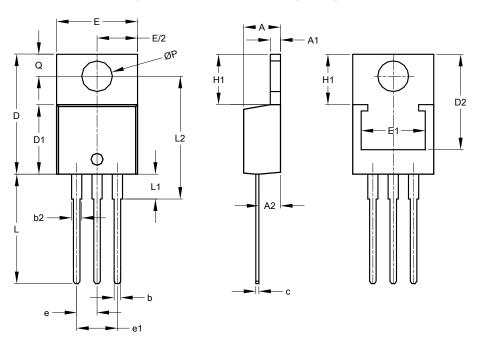






# **Package Outline Dimensions**

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

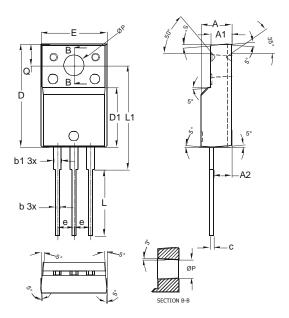


TO220AB				
Dim	Min	Max	Тур	
Α	3.56	4.82	-	
<b>A1</b>	0.51	1.39	-	
A2	2.04	2.92	-	
q	0.39	1.01	0.81	
b2	1.15	1.77	1.24	
O	0.356	0.61	-	
D	14.22	16.51	-	
D1	8.39	9.01	-	
D2	11.45	12.87	-	
е	-	-	2.54	
<b>e</b> 1	-	-	5.08	
Е	9.66	10.66	-	
E1	6.86	8.89	-	
H1	5.85	6.85	-	
Г	12.70	14.73	-	
L1	-	6.35	-	
L2	15.80	16.20	16.00	
Р	3.54	4.08	-	
Ø	2.54	3.42	-	
All Dimensions in mm				

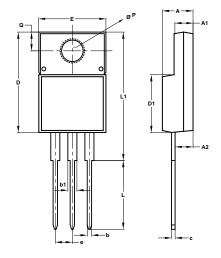


## Package Outline Dimensions (continued)

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



	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	
D	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	
q	3.10	3.30	3.50	
All Dimensions in mm				



ITO-220AB				
(Type E)				
Dim	Min	Max		
Α	4.36	4.77		
A1	2.54	3.10		
A2	2.54	2.80		
p	0.55	0.75		
b1	1.20	1.50		
С	0.38	0.68		
D	14.50	15.50		
D1	8.38	8.89		
е	2.41	2.67		
Е	9.72	10.27		
L	9.87	10.67		
L1	15.8	17.00		
Р	3.08	3.39		
Ø	2.60	3.00		
All Dimensions in mm				



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