

30A SBR[®] SUPER BARRIER RECTIFIER

Product Summary

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V) @ +25°C	I _{R(MAX)} (mA) @ +25°C
100	15 (Per leg) 30 (Total)	0.8	0.1

Description and Applications

The SBR30A100CT & SBR30A100CTFP provide very low VF and excellent reverse leakage stability at high temperatures. They are ideal for use as a rectifiers, freewheel diodes or blocking diodes in:

- DC-DC Converters
- AC-DC Adaptors

Features and Benefits

- Patented SBR technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.
- Reduced ultra-low forward voltage drop (V_F).
 Better efficiency and cooler operation.
- Reduced high temperature reverse leakage; Increased reliability against thermal runaway failure in high temperature operation.
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- 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[®]
- Marking Information: See Below
- · Ordering Information: See Below
- Weight: TO-220AB 1.85 grams (Approximate)
 ITO-220AB 1.65 grams (Approximate)



TO-220AB Top View



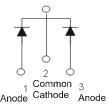
TO-220AB Bottom View



ITO-220AB Top View



ITO-220AB Bottom View



Package Pin Out Configuration

Ordering Information (Notes 4 & 5)

	Part Number	Case	Packaging
Po	SBR30A100CT	TO-220AB	50 pieces/tube
Ph	SBR30A100CT-G	TO-220AB	50 pieces/tube
Pb	SBR30A100CTFP	ITO-220AB	50 pieces/tube
(Pb) Green	SBR30A100CTFP-G	ITO-220AB	50 pieces/tube
Pb	SBR30A100CTFP-JT	ITO-220AB (Type E)	50 pieces/tube
Pb	SBR30A100CTFP-JT-G	ITO-220AB (Type E)	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: SBR30A100CT-G.
- 5. For packaging details, go to our website at http"//www.diodes.com/products/packages.html.



Marking Information



SBR30A100CT = 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)



SBR30A100CTFP = 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	VRRM VRWM VRM	100	V
Average Rectified Output Current Per Device (Per Leg) (Total)	Io	15 30	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	250	A
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I _{RRM}	3	A
Isolation Voltage (ITO-220AB Only) From Terminal to Heatsink t = 3 seconds	V _{AC}	2,000	V
Non-Repetitive Avalanche Energy (TJ = +25°C, IAS = 10A, L = 8.5mH)	Eas	550	mJ

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance			
Package = TO-220AB (Note 6)	$R_{ heta JC}$	2	°C/W
Package = ITO-220AB (Note 6)	0.0	4	
Operating and Storage Temperature Range	T_J , T_{STG}	-65 to +175	°C

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

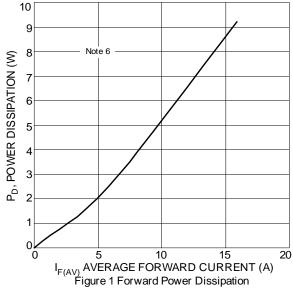
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF	-	- 0.63	0.80 0.67	V	I _F = 15A, T _J = +25°C I _F = 15A, T _J = +125°C
Leakage Current (Note 7)	I _R	-	-	0.1 10	mA	$V_R = 100V, T_J = +25^{\circ}C$ $V_R = 100V, T_J = +125^{\circ}C$

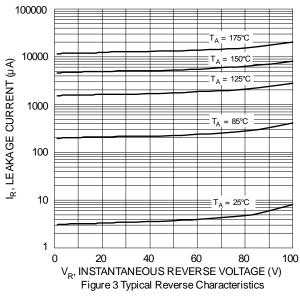
Notes: 6. Test with Aluminum heatsink 50 x 50 x 23 mm.

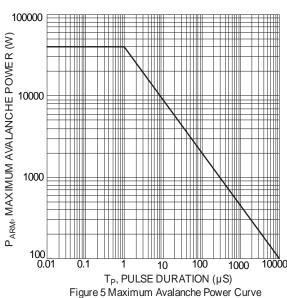
^{7.} Short duration pulse test used to minimize self-heating effect.

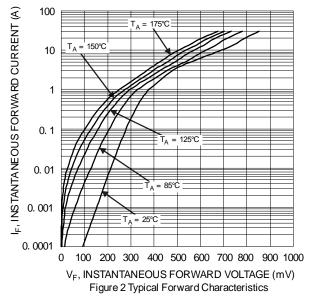


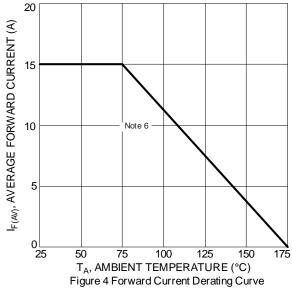








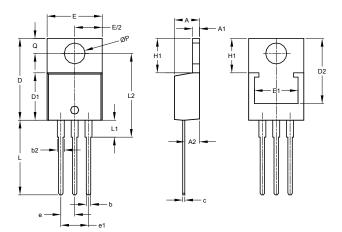




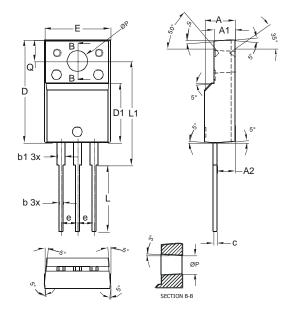


Package Outline Dimensions

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	-	
A1	0.51	1.39	-	
A2	2.04	2.92	-	
b	0.39	1.01	0.81	
b2	1.15	1.77	1.24	
C	0.356	0.61	-	
D	14.22	16.51	-	
D1	8.39	9.01	-	
D2	11.45	12.87	-	
е	-	-	2.54	
e1	-	-	5.08	
Е	9.66	10.66	-	
E1	6.86	8.89	-	
H1	5.85	6.85	-	
L	12.70	14.73	-	
L1	-	6.35	-	
L2	15.80	16.20	16.00	
Р	3.54	4.08	-	
Q	2.54	3.42	-	
All Dimensions in mm				

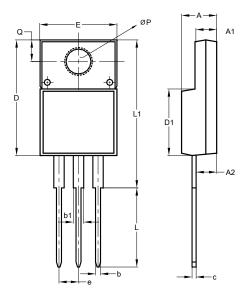


ITO-220AB				
Dim	Min	Тур	Max	
Α	4.50	4.70	4.90	
A1	3.04	3.24	3.44	
A2	2.56	2.76	2.96	
b	0.50	0.60	0.75	
b1	1.10	1.20	1.35	
C	0.50	0.60	0.70	
D	15.67	15.87	16.07	
D1	8.99	9.19	9.39	
е		2.54		
Е	9.91	10.11	10.31	
٦	9.45	9.75	10.05	
L1	15.80	16.00	16.20	
Р	2.98	3.18	3.38	
ø	3.10	3.30	3.50	
All Dimensions in mm				



Package Outline Dimensions (continued)

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



ITO220AB			
	(Type E)	
Dim	Min	Max	
Α	4.36	4.77	
A1	2.54	3.10	
A2	2.54	2.80	
b	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	
Q	2.60	3.00	
All Dimensions in mm			



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