

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 V_F and excellent reverse leakage stability at high temperatures. They are ideal for use as a rectifiers, freewheel diodes or blocking diodes in:

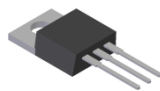
- DC-DC Converters
- AC-DC Adaptors

Features and Benefits

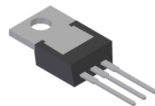
- Patented SBR technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.
- Reduced ultra-low forward voltage drop (V_F). Better efficiency and cooler operation.
- Reduced high temperature reverse leakage; Increased reliability against 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

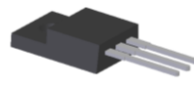
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic.
UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208③
- Marking Information: See Below
- Ordering Information: See Below
- Weight: TO-220AB – 1.85 grams (Approximate)
ITO-220AB – 1.65 grams (Approximate)



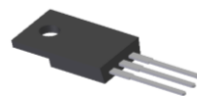
TO-220AB
Top View



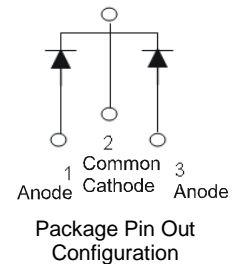
TO-220AB
Bottom View



ITO-220AB
Top View



ITO-220AB
Bottom View



Ordering Information (Notes 4 & 5)

Part Number	Case	Packaging
SBR30A100CT	TO-220AB	50 pieces/tube
SBR30A100CT-G	TO-220AB	50 pieces/tube
SBR30A100CTFP	ITO-220AB	50 pieces/tube
SBR30A100CTFP-G	ITO-220AB	50 pieces/tube
SBR30A100CTFP-JT	ITO-220AB (Type E)	50 pieces/tube
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) (@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	V _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current Per Device (Per Leg) (Total)	I _O	15 30	A
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 (2µS-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 (T _J = +25°C, I _{AS} = 10A, L = 8.5mH)	E _{AS}	550	mJ

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Package = TO-220AB (Note 6) Package = ITO-220AB (Note 6)	R _{θJC}	2 4	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	-	- 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°C V _R = 100V, T _J = +125°C

Notes: 6. Test with Aluminum heatsink 50 x 50 x 23 mm.
 7. Short duration pulse test used to minimize self-heating effect.

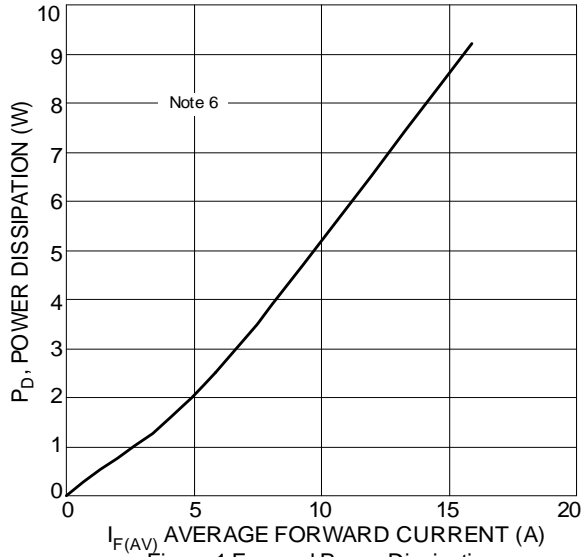


Figure 1 Forward Power Dissipation

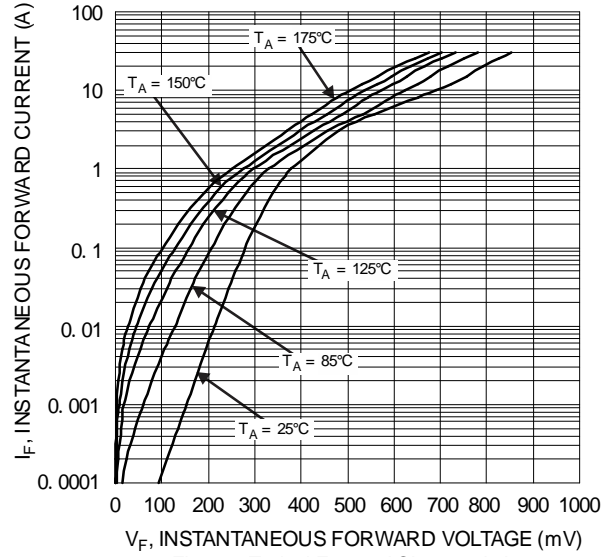


Figure 2 Typical Forward Characteristics

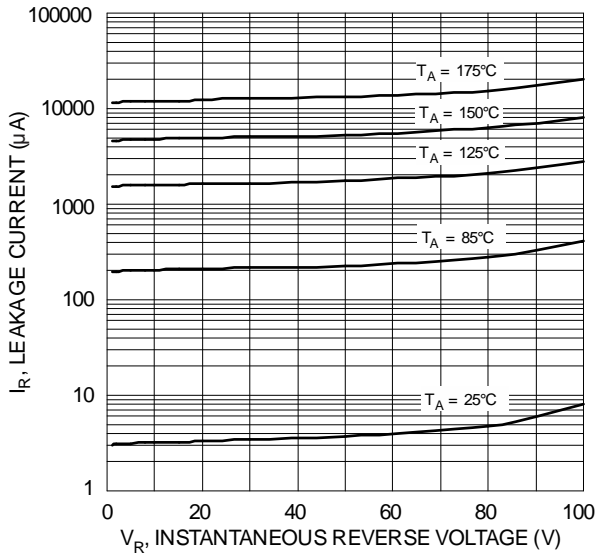


Figure 3 Typical Reverse Characteristics

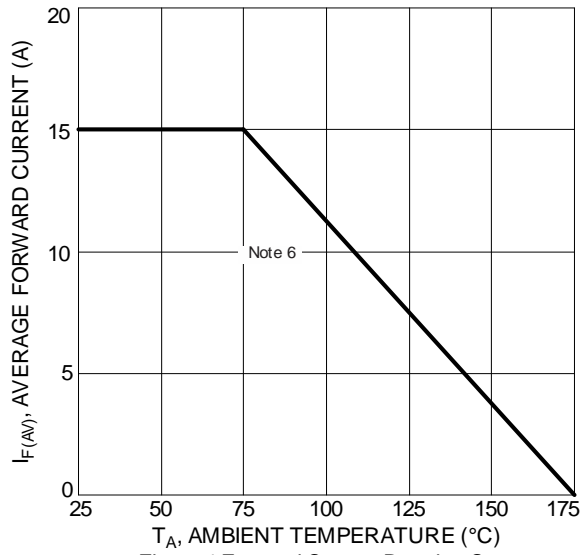


Figure 4 Forward Current Derating Curve

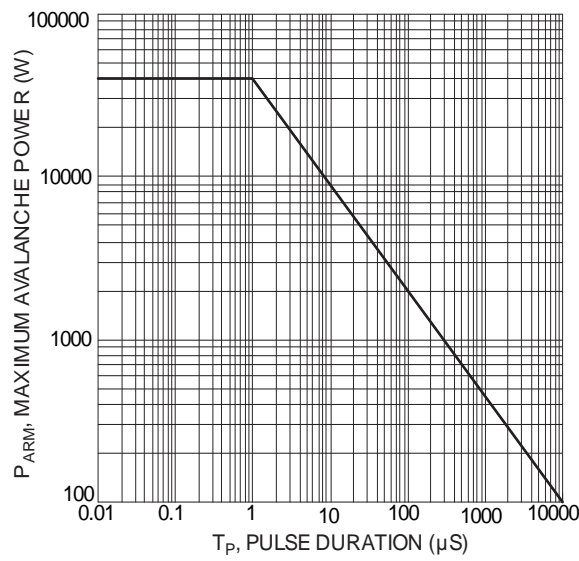
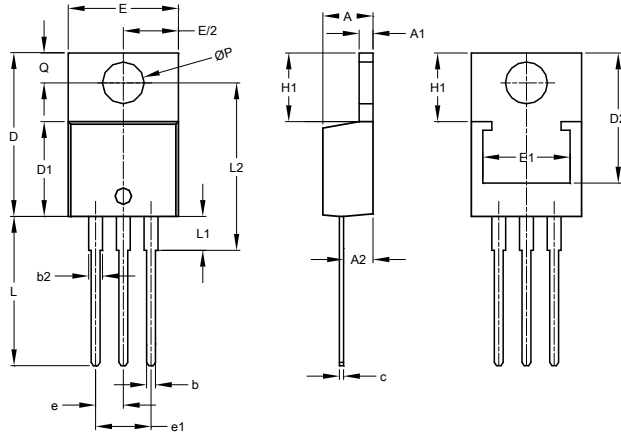


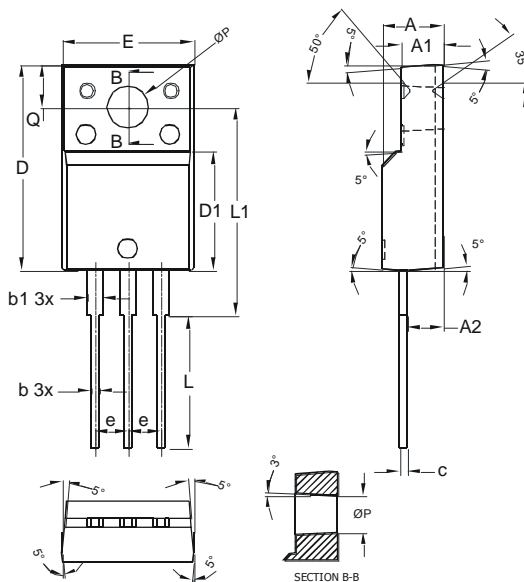
Figure 5 Maximum Avalanche Power Curve

Package Outline Dimensions

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



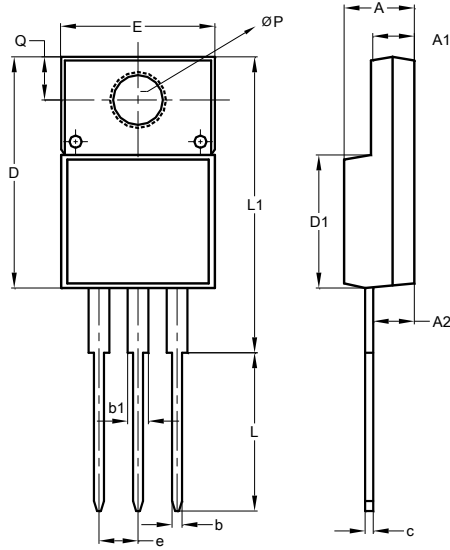
TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	6.35	-
L2	15.80	16.20	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
All Dimensions in mm			



ITO-220AB			
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
b3x	0.50	0.60	0.70
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			

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
A	4.36	4.77
A1	2.54	3.10
A2	2.54	2.80
b	0.55	0.75
b1	1.20	1.50
c	0.38	0.68
D	14.50	15.50
D1	8.38	8.89
e	2.41	2.67
E	9.72	10.27
L	9.87	10.67
L1	15.8	17.00
P	3.08	3.39
Q	2.60	3.00
All Dimensions in mm		

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