SBR10U300CT
SBR10U300CTFP

10A SBR®
SUPER BARRIER RECTIFIER

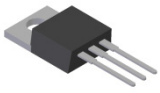
Please click here to visit our online spice models database.

Features

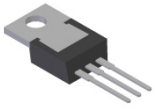
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **Also Available in Green Molding Compound (Note 4)**

Mechanical Data

- Case: TO-220AB and 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 e3
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: TO-220AB – 1.85 grams (approximate)
  ITO-220AB -1.65 grams (approximate)



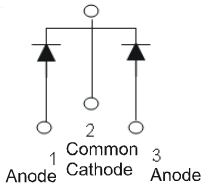
TO-220AB
Top View



TO-220AB
Bottom View

ITO-220AB
Top View

ITO-220AB
Bottom View



Package Pin Out
Configuration

Maximum Ratings @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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	300	V
Average Rectified Output Current @T_C = 150ºC	I_O	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I_{RRM}	3	A
Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec.	V_{AC}	2000	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB	$R_{\theta JC}$	 2 4	ºC/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	- 0.64 -	0.86 0.71 0.92	V	I_F = 5A, T_J = 25ºC I_F = 5A, T_J = 125ºC I_F = 10A, T_J = 25ºC
Leakage Current (Note 1)	I_R	-	-	0.2 25	mA	V_R = 300V, T_J = 25ºC V_R = 300V, T_J = 125ºC
Reverse Recovery Time	t_{rr}	- -	25 28	30 35	ns	I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A I_F = 1A, V_R = 30V di/dt = 100A/µs, T_J = 25ºC

Notes: 1. Short duration pulse test used to minimize self-heating effect.
2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes.*
3. Using heatsink (by Black Aluminum 45mm * 20mm * 12mm).

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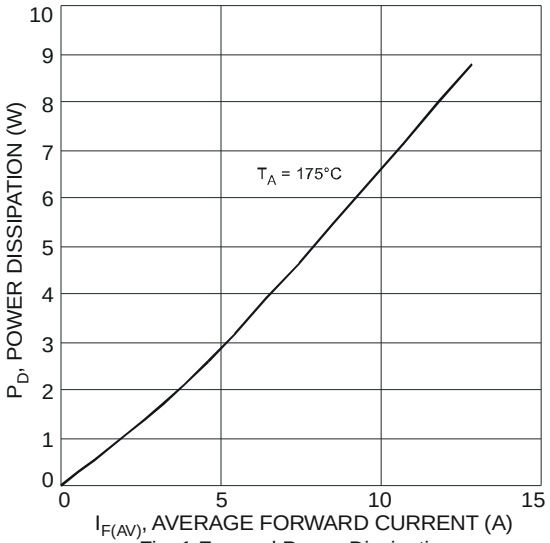

Fig. 1 Forward Power Dissipation

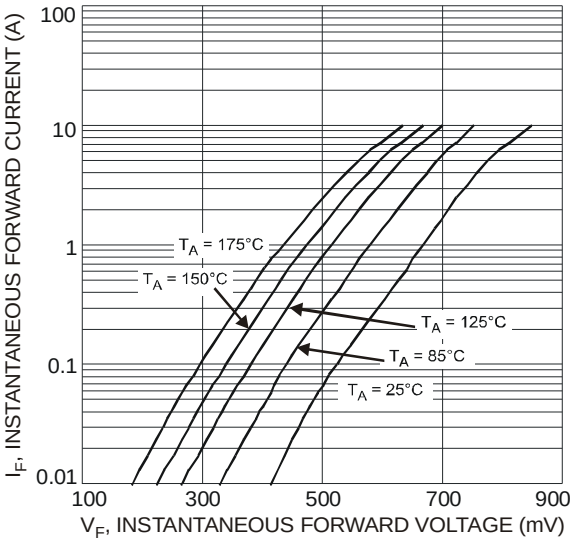

Fig. 2 Typical Forward Characteristics

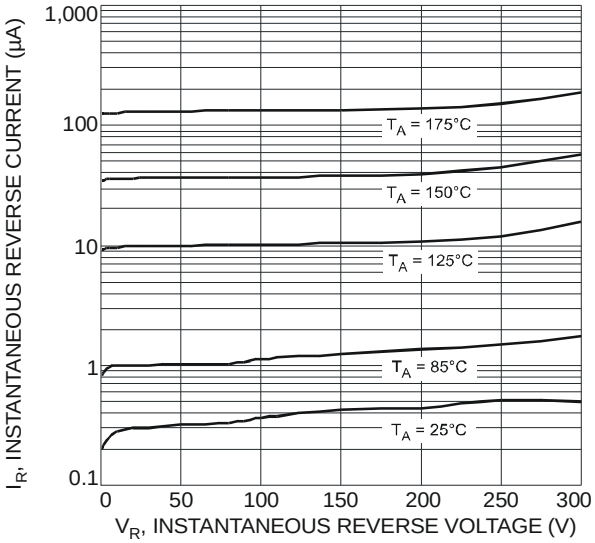

Fig. 3 Typical Reverse Characteristics

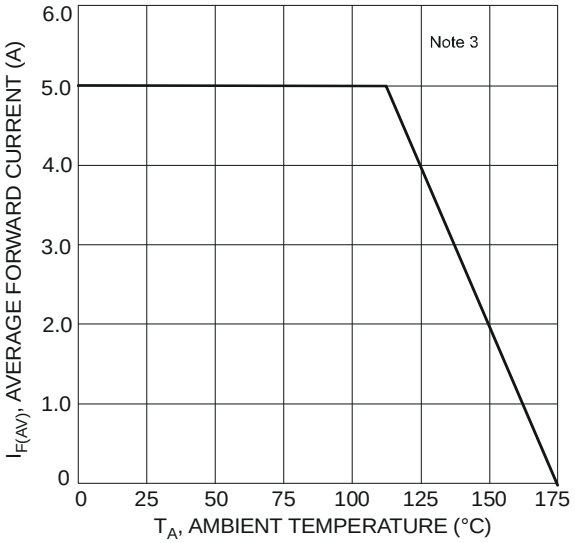

Fig. 4 Forward Current Derating Curve

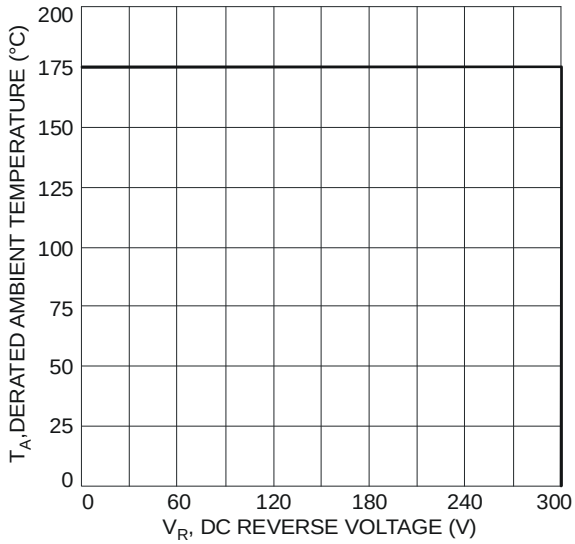

Fig. 5 Operating Temperature Derating

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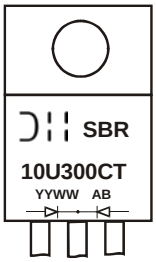
Ordering Information (Notes 4 & 5)

Part Number	Case	Packaging
SBR10U300CT	TO-220AB	50 pieces/tube
SBR10U300CT-G	TO-220AB	50 pieces/tube
SBR10U300CTFP	ITO-220AB	50 pieces/tube
SBR10U300CTFP-G	ITO-220AB	50 pieces/tube
SBR10U300CTFP-JT	ITO-220AB (Alternate)	50 pieces/tube

Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
5. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR10U300CT-G.

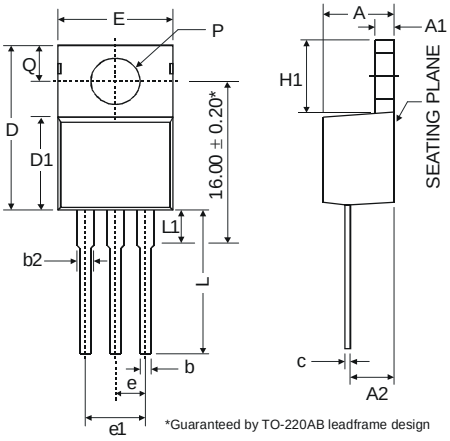
Marking Information



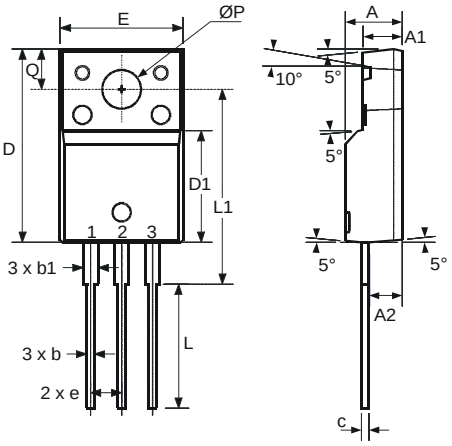
SBR10U300CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 06 = 2006)
WW = Week (01 - 53)

SBR10U300CTFP = 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)

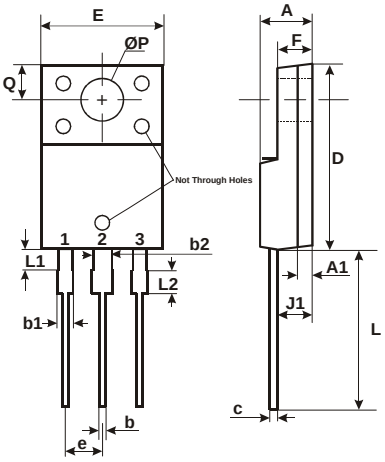
Package Outline Dimensions



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
b2	1.15	1.24	1.77
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			
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		
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		

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