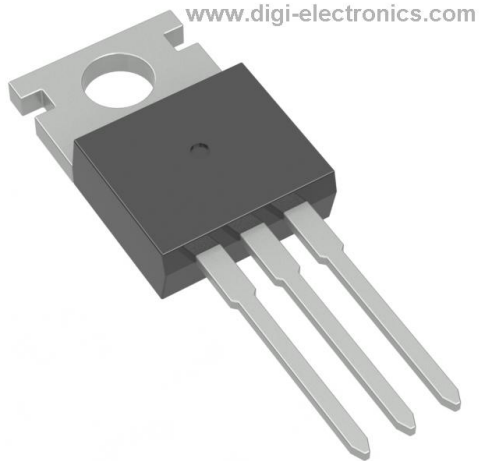


SBR10U300CT Datasheet



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	SBR10U300CT-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	SBR10U300CT
Description	DIODE ARR SBR 300V 5A TO220-3
Detailed Description	Diode Array 1 Pair Common Cathode 300 V 5A Through Hole TO-220-3

This model SBR10U300CT is available at DiGi Electronics.

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RFQ Email: Info@DiGi-Electronics.com

DiGi is a global authorized distributor of electronic components.

Purchase and inquiry

Manufacturer Product Number:

SBR10U300CT

Series:

SBR*

Diode Configuration:

1 Pair Common Cathode

Voltage - DC Reverse (Vr) (Max):

300 V

Voltage - Forward (Vf) (Max) @ If:

920 mV @ 10 A

Reverse Recovery Time (trr):

35 ns

Operating Temperature - Junction:

-65°C ~ 175°C

Package / Case:

TO-220-3

Base Product Number:

SBR10

Manufacturer:

Diodes Incorporated

Product Status:

Active

Technology:

Super Barrier

Current - Average Rectified (Io) (per Diode):

5A

Speed:

Fast Recovery =< 500ns, > 200mA (Io)

Current - Reverse Leakage @ Vr:

200 µA @ 300 V

Mounting Type:

Through Hole

Supplier Device Package:

TO-220-3

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0080

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



SBR10U300CT
SBR10U300CTFP

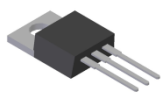
10A SBR
SUPER BARRIER RECTIFIER

Features

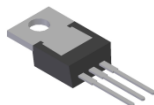
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier SBR® Technology
- Soft, Fast Switching Capability
- TO220AB, ITO220AB, ITO220AB (Type E)
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Packages: TO220AB, ITO220AB
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

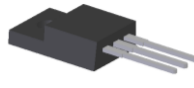
- Case: TO220AB and ITO220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (Ⓜ)
- Weight:
 - TO220AB – 1.85 grams (Approximate)
 - ITO220AB, ITO220AB (Type E) – 1.65 grams (Approximate)



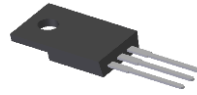
TO220AB
Top View



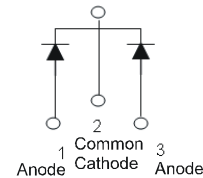
TO220AB
Bottom View



ITO220AB,
ITO220AB (Type E)
Top View



ITO220AB,
ITO220AB (Type E)
Bottom View



Package Pin-Out
Configuration

Ordering Information (Notes 4 and 5)

Part Number	Case	Packaging
SBR10U300CT	TO220AB	50 Pieces/Tube
SBR10U300CT-G (NRND) (Note 6)	TO220AB	50 Pieces/Tube
SBR10U300CTFP	ITO220AB	50 Pieces/Tube
SBR10U300CTFP-G	ITO220AB	50 Pieces/Tube
SBR10U300CTFP-JT	ITO220AB (Type E)	50 Pieces/Tube

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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: SBR10U300CT-G.
 5. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
 6. NRND: Not recommended for new design.

Marking Information



Ⓜ = Manufacturer's Marking
SBR10U300CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 20 = 2020)
WW = Week (01 to 53)



Ⓜ = Manufacturer's Marking
SBR10U300CTFP = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 20 = 2020)
WW = Week (01 to 53)



SBR10U300CT
SBR10U300CTFP

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	300	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current @T _C = +150°C	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 (2μS-1kHz)	I _{RRM}	3	A
Isolation Voltage (ITO220AB Only) From Terminal to Heatsink t = 3s.	V _{AC}	2000	V

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Per Leg)	R _{θJC}	2	°C/W
Package = TO220AB			
Package = ITO220AB, ITO220AB (Type E)		4	
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

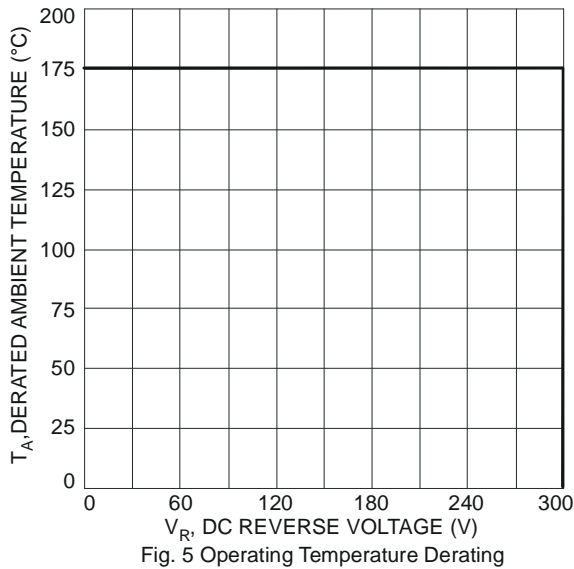
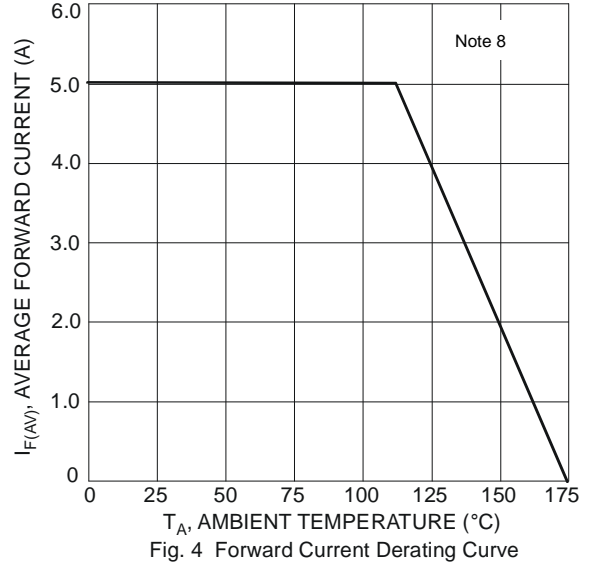
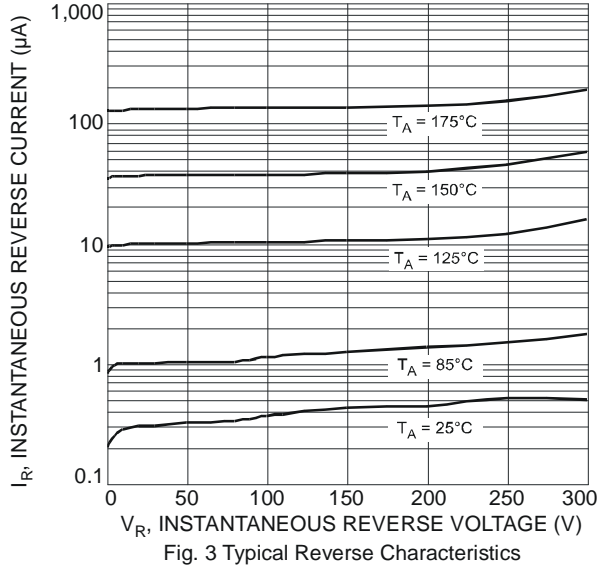
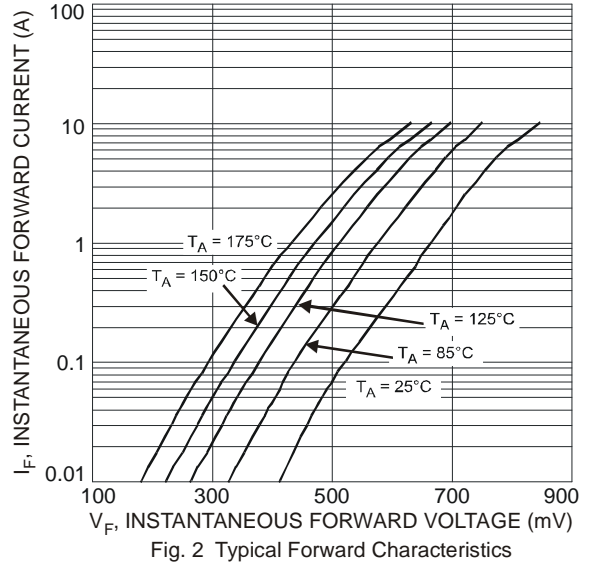
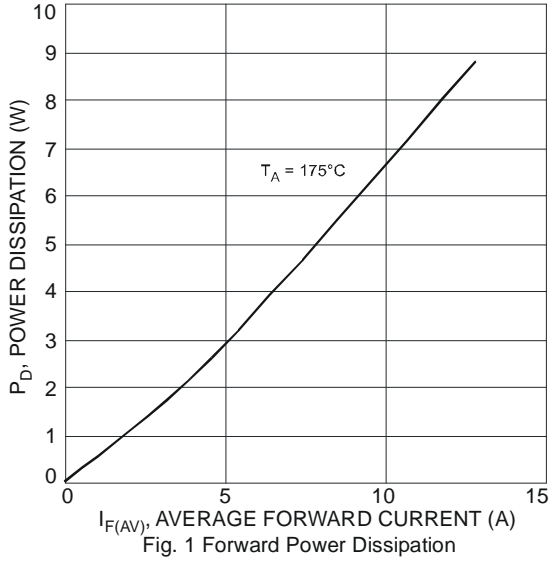
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	—	—	0.86	V	I _F = 5A, T _J = +25°C
			0.64	0.71		I _F = 5A, T _J = +125°C
			—	0.92		I _F = 10A, T _J = +25°C
Leakage Current (Note 7)	I _R	—	—	0.2	mA	V _R = 300V, T _J = +25°C
				25		V _R = 300V, T _J = +125°C
Reverse Recovery Time	t _{RR}	—	25	30	ns	I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A
			28	35		I _F = 1A, V _R = 30V di/dt = 100A/μs, T _J = +25°C

Notes: 7. Short duration pulse test used to minimize self-heating effect.
8. Using heatsink (by Black Aluminum 45mm * 20mm * 12mm).



SBR10U300CT
SBR10U300CTFP



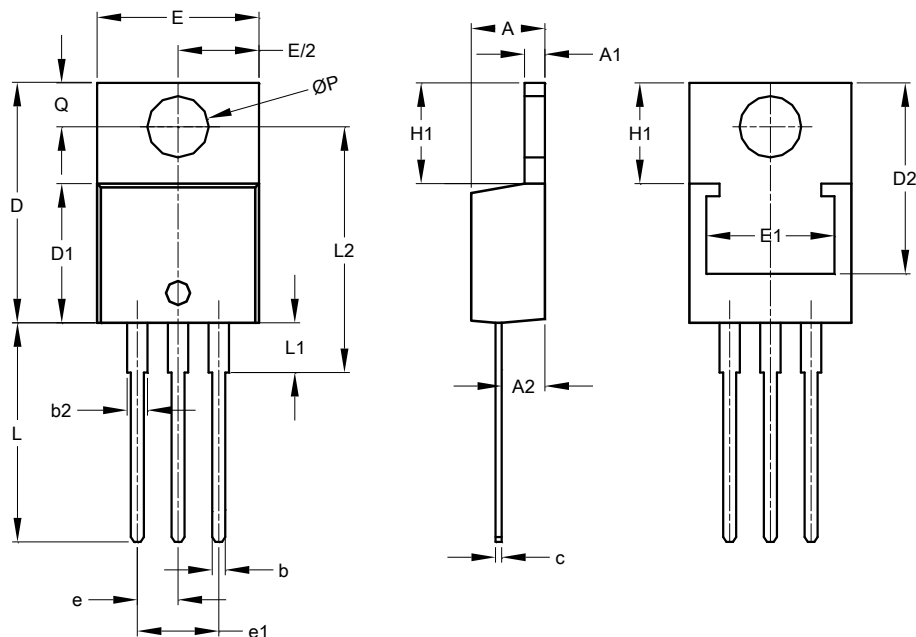


SBR10U300CT
SBR10U300CTFP

Package Outline Dimensions

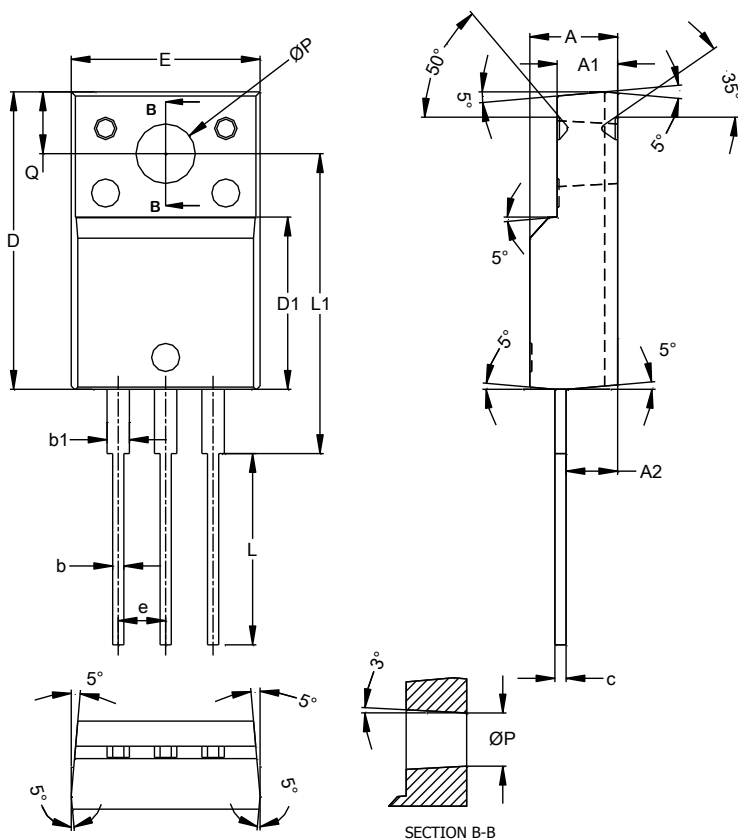
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(1) Package Type: TO220AB



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	-	4.42	-
L2	15.80	17.51	16.00
P	3.54	4.08	-
Q	2.54	3.42	-
All Dimensions in mm			

(2) Package Type: ITO220AB

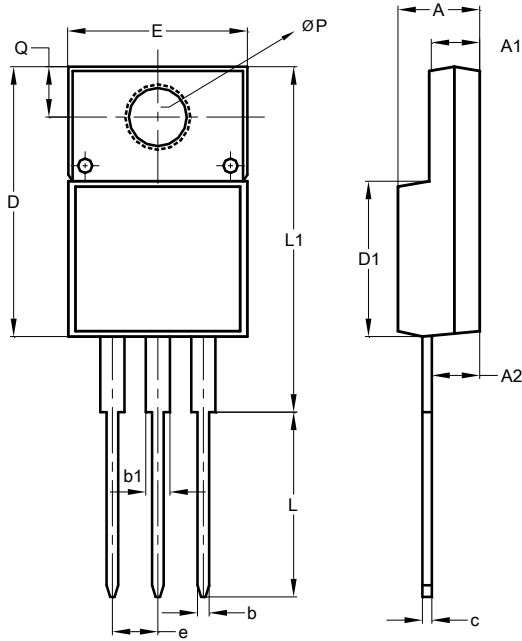


ITO220AB			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	3.04	3.44	3.24
A2	2.56	2.96	2.76
b	0.50	0.75	0.60
b1	1.10	1.35	1.20
c	0.50	0.70	0.60
D	15.67	16.07	15.87
D1	8.99	9.39	9.19
E	9.91	10.31	10.11
e	--	--	2.54
L	9.45	10.05	9.75
L1	15.80	16.20	16.00
P	2.98	3.38	3.18
Q	3.10	3.50	3.30
All Dimensions in mm			

Package Outline Dimensions (continued)

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(3) Package Type: ITO220AB (Type E)



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		



SBR10U300CT
SBR10U300CTFP

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