



**THE DATASHEET OF
SBR2045CT-G**

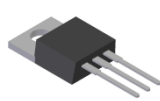


Features

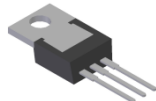
- Low Forward Voltage Drop
- Patented Superior Barrier Rectifier SBR[®] Technology
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- TO220AB, ITO220AB and ITO220AB (Type E)
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Packages: TO220AB and ITO220AB
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

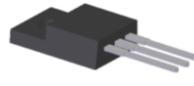
- Case: TO220AB, ITO220AB and ITO220AB (Type E)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: TO220AB – 1.85 grams (Approximate)
ITO220AB – 1.65 grams (Approximate)
ITO220AB (Type E) – 1.65 grams (Approximate)



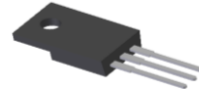
TO220AB
Top View



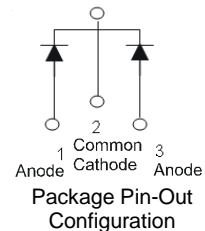
TO220AB
Bottom View



ITO220AB
Top View



ITO220AB
Bottom View



Ordering Information (Notes 4 and 5)



Part Number	Case	Packaging
SBR2045CT	TO220AB	50 Pieces/Tube
SBR2045CT-G	TO220AB	50 Pieces/Tube
SBR2045CTFP	ITO220AB	50 Pieces/Tube
SBR2045CTFP-G	ITO220AB	50 Pieces/Tube
SBR2045CTFP-JT	ITO220AB (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/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: SBR2045CT-G.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



SBR2045CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 16 = 2016)
WW = Week (01 to 53)



SBR2045CTFP = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 16 = 2016)
WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _{RM}	45	V
Average Rectified Output Current (Per Leg) (Total)	I _O	10 20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	120	A
Peak Repetitive Reverse Surge Current (2µs-1KHz)	I _{RRM}	2	A
Isolation Voltage (ITO220AB Only) From Terminal to Heatsink t = 3 sec.	V _{AC}	2000	V

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Package: TO220AB(Note 6) Package: ITO220AB(Note 6)	R _{θJC}	2 4	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°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	-	- 0.43	0.54 0.49	V	I _F = 10A, T _J = +25°C I _F = 10A, T _J = +125°C
Leakage Current (Note 7)	I _R	-	-	0.3 50	mA	V _R = 45V, T _J = +25°C V _R = 45V, 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.

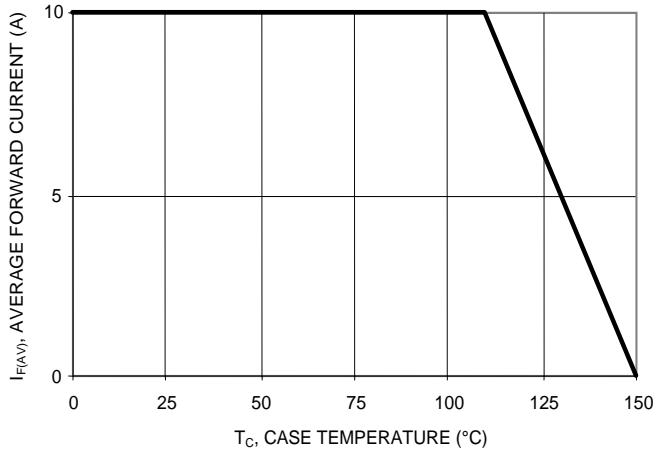


Figure 1. Current Derating Curve, Per Element

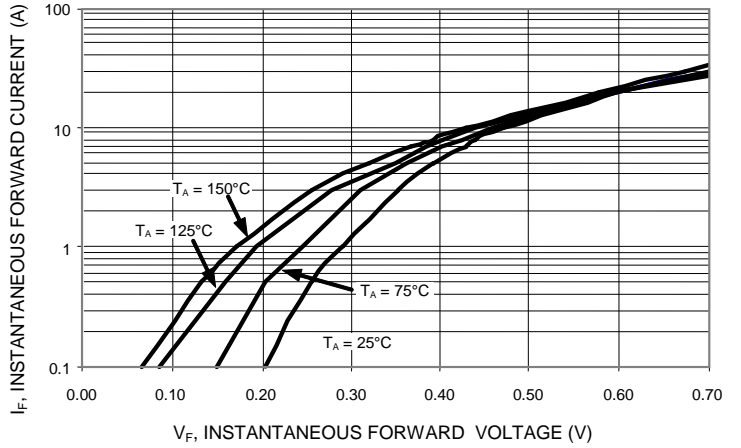


Figure 2. Typical Forward Characteristics, Per Element

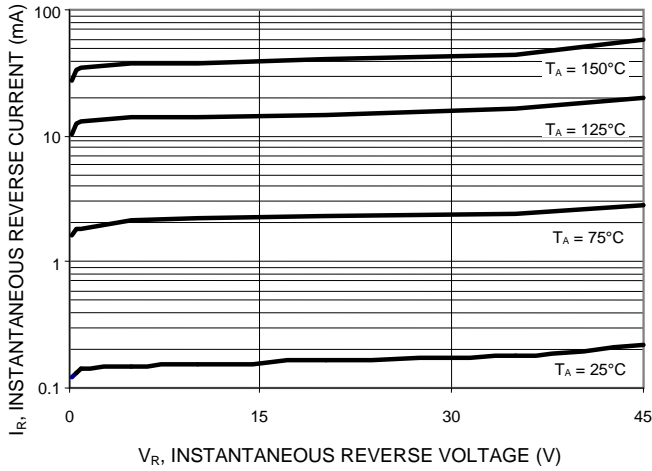


Figure 3. Typical Reverse Characteristics, Per Element

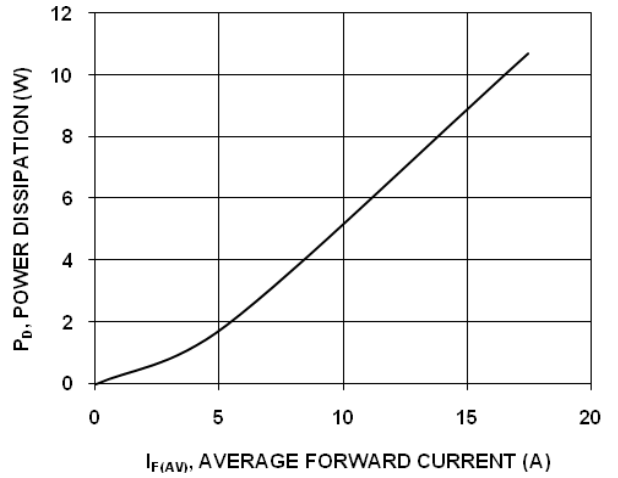
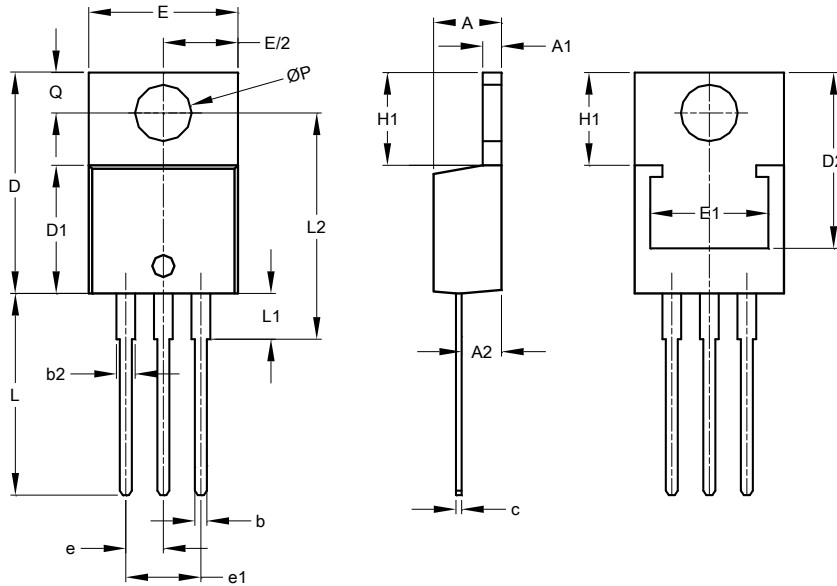


Figure 4. Forward Power Dissipation

Package Outline Dimensions

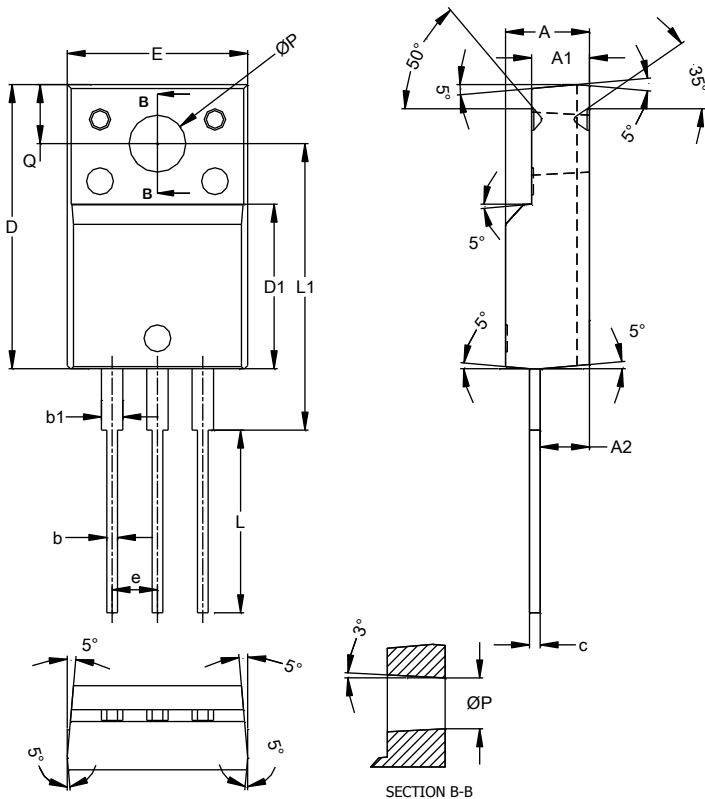
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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			

ITO220AB

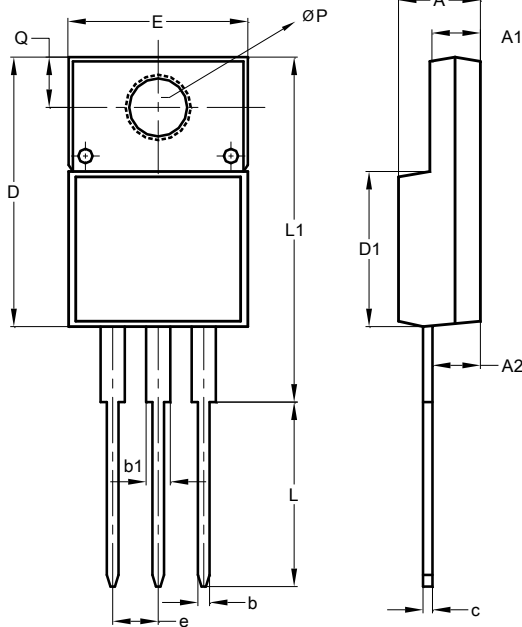


ITO220AB			
Dim	Min	Max	Typ
A	4.50	4.90	4.70
A1	3.04	3.44	3.24
A2	2.56	2.96	2.76
b	0.50	0.75	0.60
b1	1.10	1.35	1.20
c	0.50	0.70	0.60
D	15.67	16.07	15.87
D1	8.99	9.39	9.19
E	9.91	10.31	10.11
e	--	--	2.54
L	9.45	10.05	9.75
L1	15.80	16.20	16.00
P	2.98	3.38	3.18
Q	3.10	3.50	3.30
All Dimensions in mm			

Package Outline Dimensions (Cont.)

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

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		

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