

SBR2045CTFP

20A SBR SUPER BARRIER RECTIFIER

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 (3)
- Weight: TO220AB 1.85 grams (Approximate)
 ITO220AB 1.65 grams (Approximate)
 ITO220AB (Type E) 1.65 grams (Approximate)







TO220AB Bottom View



ITO220AB Top View



ITO220AB Bottom View



Package Pin-Out Configuration

Ordering Information (Notes 4 and 5)

	Part Number	Case	Packaging
9	SBR2045CT	TO220AB	50 Pieces/Tube
	SBR2045CT-G	TO220AB	50 Pieces/Tube
9	SBR2045CTFP	ITO220AB	50 Pieces/Tube
	SBR2045CTFP-G	ITO220AB	50 Pieces/Tube
9	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	V_{RRM}		
Working Peak Reverse Voltage	V _{RWM}	45	V
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current (Per Leg) (Total)	Io	10 20	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	120	Α
Peak Repetitive Reverse Surge Current (2µs-1KHz)	I _{RRM}	2	Α
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)	$R_{ heta JC}$	2	°C/W
Package: ITO220AB(Note 6)	000	4	
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

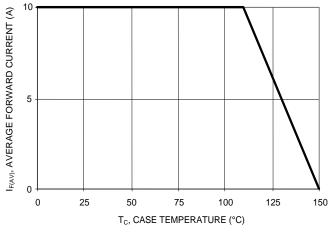
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VE	-	-	0.54	. v	$I_F = 10A, T_J = +25^{\circ}C$
orward voilage Brop	V F	-	0.43	0.49		$I_F = 10A, T_J = +125^{\circ}C$
Leakage Current (Note 7)	I_	-	-	0.3		$V_R = 45V, T_J = +25^{\circ}C$
eakage Current (Note 1)	IR	-	-	50		$V_R = 45V, T_J = +125^{\circ}C$

Notes:

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



SBR2045CT SBR2045CTFP



T_A = 150°C

T_A = 150°C

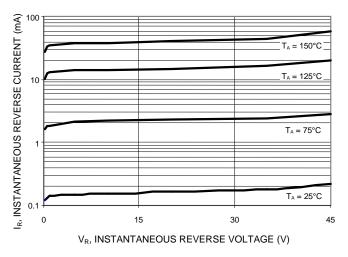
T_A = 25°C

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V_F, INSTANTANEOUS FORWARD VOLTAGE (V)

Figure 1. Current Derating Curve, Per Element

Figure 2. Typical Forward Characteristics, Per Element



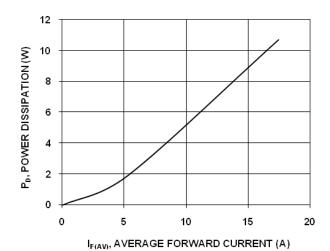


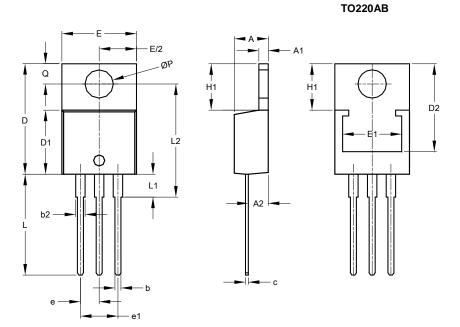
Figure 3. Typical Reverse Characteristics, Per Element

Figure 4. Forward Power Dissipation



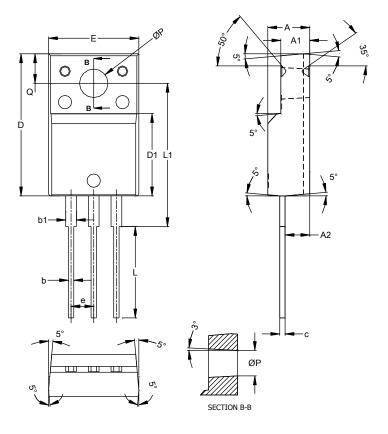
Package Outline Dimensions

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



	TO220AB				
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		
С	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	-	4.42	-		
L2	15.80	17.51	16.00		
Р	3.54	4.08	-		
Q	2.54	3.42	-		
All Dimensions in mm					

ITO220AB



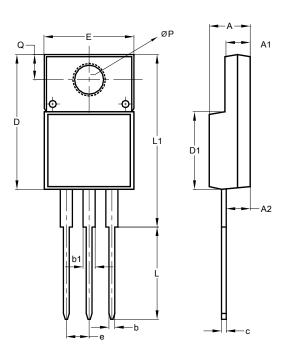
ITO220AB				
Dim	Min	Max	Тур	
Α	4.50	4.90	4.70	
A1	3.04	3.44	3.24	
A2	2.56	2.96	2.76	
b	0.50	0.75	0.60	
b1	1.10	1.35	1.20	
С	0.50	0.70	0.60	
D	15.67	16.07	15.87	
D1	8.99	9.39	9.19	
E	9.91	10.31	10.11	
е			2.54	
L	9.45	10.05	9.75	
L1	15.80	16.20	16.00	
Р	2.98	3.38	3.18	
Q	3.10	3.50	3.30	
All Dimensions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