

### SBR10U40CT, SBR10U40CTFP

#### 10A SBR<sup>®</sup> SUPER BARRIER RECTIFIER

#### Features

- Ultra Low Forward Voltage Drop
- **Excellent High Temperature Stability**
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Also Available in Green Molding Compound
- 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 208 @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

#### Ordering Information (Notes 4 & 5)

	Part Number	Case	Packaging		
Þ	SBR10U40CT	TO-220AB	50 pieces/tube		
PD,	SBR10U40CT-G	TO-220AB	50 pieces/tube		
Þ	SBR10U40CTFP	ITO-220AB	50 pieces/tube		
<b>B</b>	SBR10U40CTFP-G	ITO-220AB	50 pieces/tube		
<b>Pb</b>	SBR10U40CTFP-JT	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/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: SBR10U40CT-G.

5. For packaging details, go to our website at http:// www.diodes.com/products/packages.html.

### **Marking Information**



SBR10U40CT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 15 = 2015) WW = Week (01 - 53)



SBR10U40CTFP = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 15 = 2015) WW = Week (01 - 53)



# Maximum Ratings (Per Leg) (@T<sub>A</sub> = +25°C unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	40	V
Average Rectified Output Current Per Device (Per Leg) (Total)	lo	5 10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	150	А
Peak Repetitive Reverse Surge Current (2µS-1kHz)	I <sub>RRM</sub>	3	А
Isolation Voltage (ITO-220AB Only) From Terminal to Heatsink, t = 3 seconds	V <sub>AC</sub>	2,000	V

## **Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Package = TO-220AB Package = ITO-220AB	$R_{ ext{ heta}JC}$	2 4	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

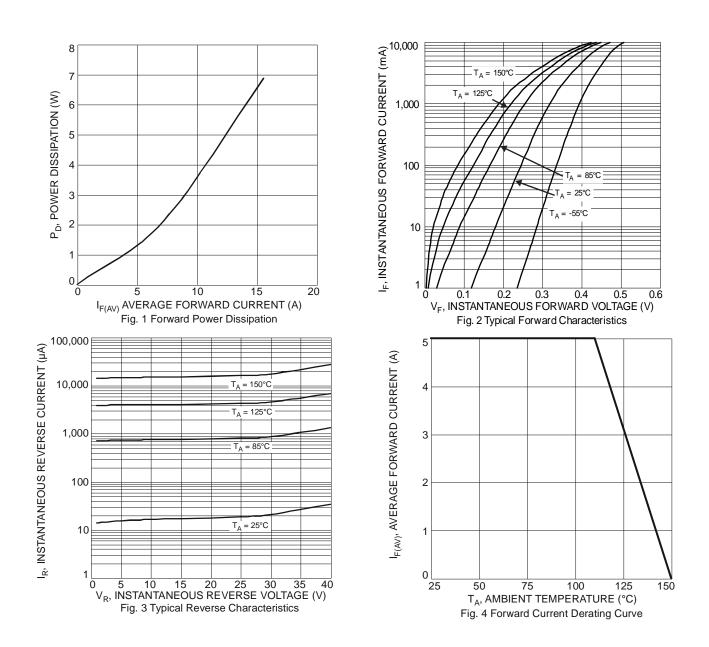
# Electrical Characteristics (Per Leg) @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF	-	- 0.35 -	0.44 0.38 0.52		I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	-	-	0.5 100	mA	V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C V <sub>R</sub> = 40V, T <sub>J</sub> = +125°C

Note: 6. Short duration pulse test used to minimize self-heating effect.

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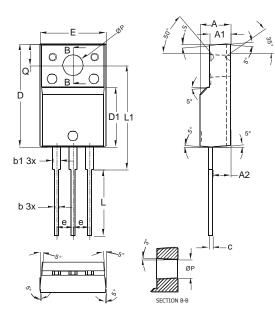


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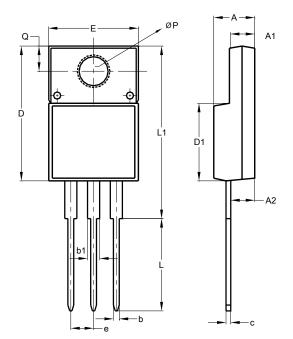


## **Package Outline Dimensions**

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



ITO-220AB					
Dim	Min	Тур	Max		
Α	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		
С	0.50	0.60	0.70		
D	15.67	15.87	16.07		
D1	8.99	9.19	9.39		
е		2.54			
E	9.91	10.11	10.31		
L	9.45	9.75	10.05		
L1	15.80	16.00	16.20		
Р	2.98	3.18	3.38		
Q	3.10	3.30	3.50		
All Dimensions in mm					

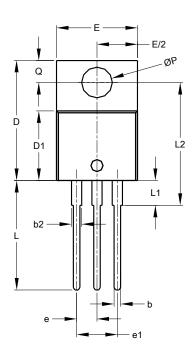


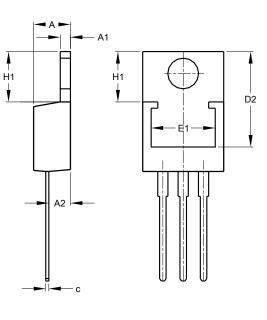
ITO220AB					
(Type E)					
Dim	Min	Max			
Α	4.36	4.77			
A1	2.54	3.10			
A2	2.54	2.80			
b	0.55	0.75			
b1	1.20	1.50			
С	0.38	0.68			
D	14.50	15.50			
D1	8.38	8.89			
e	2.41	2.67			
ш	9.72	10.27			
L	9.87	10.67			
L1	15.8	17.00			
Р	3.08	3.39			
q	2.60	3.00			
All Dimensions in mm					



## Package Outline Dimensions (cont.)

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf 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	-	6.35	-		
L2	15.80	16.20	16.00		
Ρ	3.54	4.08	-		
Q	2.54	3.42	-		
All I	All Dimensions in mm				



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