

## Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

## Mechanical Data

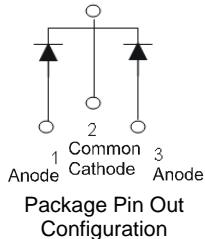
- Case: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 <sup>③</sup>
- Weight: 1.85 grams (approximate)



TO-220AB  
Top View



TO-220AB  
Bottom View



## Ordering Information (Notes 2 & 3)

Part Number	Case	Packaging
SBR40U120CT	TO-220AB	50 pieces/tube
SBR40U120CT-G	TO-220AB	50 pieces/tube

Notes:

1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at <http://www.diodes.com>.
2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR40U120CT-G.
3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR40U120CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 08 = 2008)  
 WW = Week (01 - 53)

**Maximum Ratings (Per Leg)** @ $T_A = 25^\circ\text{C}$  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	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	120	V
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current (Per Leg)	$I_O$	20	A
(Total)		40	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	300	A

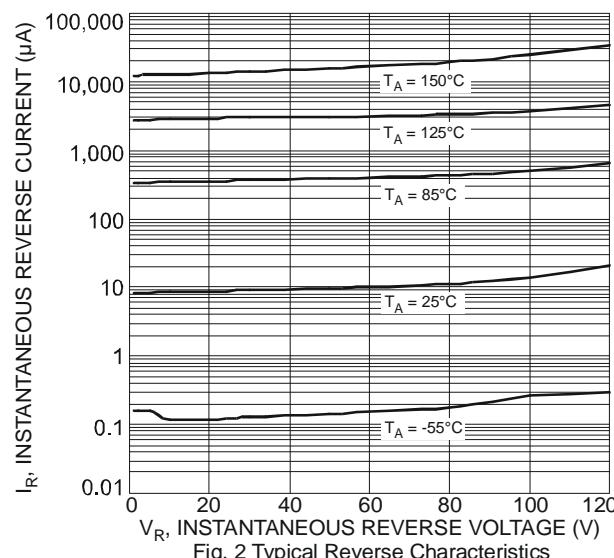
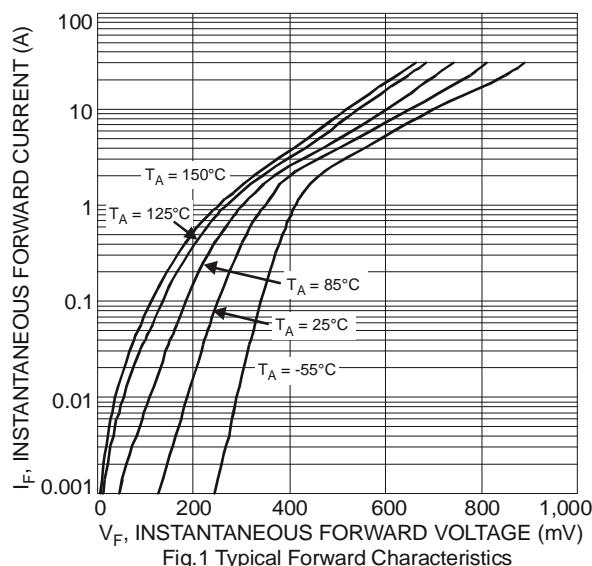
**Thermal Characteristics (Per Leg)**

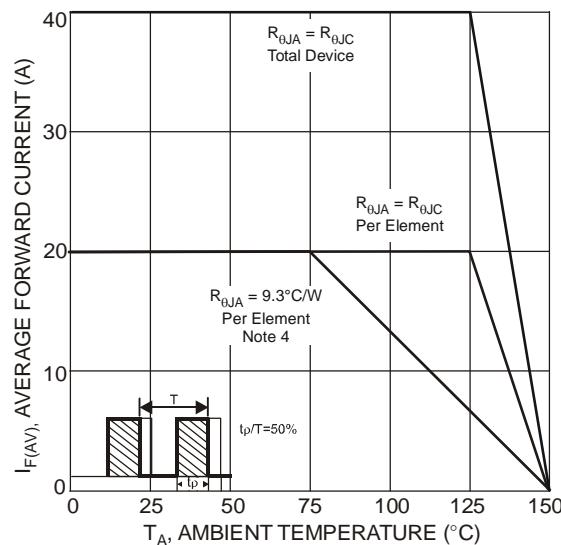
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 4)	$R_{0JC}$	2.0	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

**Electrical Characteristics (Per Leg)** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

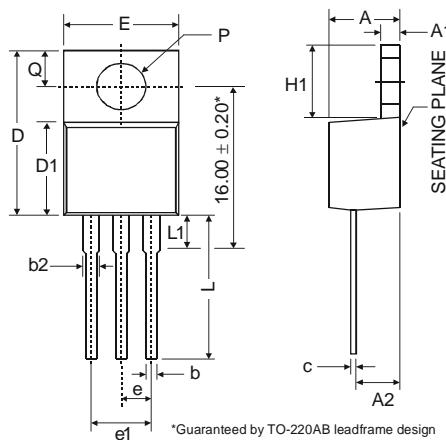
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	$V_F$	-	-	0.86 0.71	V	$I_F = 20\text{A}, T_J = 25^\circ\text{C}$ $I_F = 20\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 5)	$I_R$	-	-	0.5 40	mA	$V_R = 120\text{V}, T_J = 25^\circ\text{C}$ $V_R = 120\text{V}, T_J = 125^\circ\text{C}$

Notes:  
 4. Device mounted on heatsink, (Black Aluminum, 37mm x 50mm x 15mm).  
 5. Short duration pulse test used to minimize self-heating effect.





## 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

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