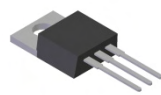


## Features

- 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 2)**
- **Also Available in Green Molding Compound (Note 4)**

## Mechanical Data

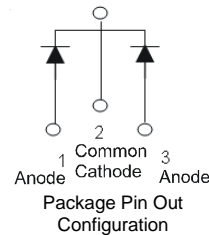
- Case: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 <sup>(3)</sup>
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 1.85 grams (approximate)



TO-220AB  
Top View



TO-220AB  
Bottom View



## Maximum Ratings (Per Leg) @<sub>T<sub>A</sub></sub> = 25°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	$V_{RRM}$	200	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current Per Device (Per Leg) (Total)	$I_O$	20 40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	240	A

## Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance			
Thermal Resistance Junction to Case (Note 3)	$R_{\theta JC}$	0.6	°C/W
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	7.8	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	$V_F$	-	0.83 0.68	0.89 0.73	V	$I_F = 20A, T_J = 25^\circ C$ $I_F = 20A, T_J = 125^\circ C$
Leakage Current (Note 1)	$I_R$	-	-	0.2 40	mA	$V_R = 200V, T_J = 25^\circ C$ $V_R = 200V, T_J = 125^\circ C$
Reverse Recovery Time	$t_{rr}$	-	38 25	50 35	ns	$I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A$ $I_F = 1A, V_R = 30V$ $di/dt = 100A/\mu s, T_J = 25^\circ C$

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).  
3. Device mounted on heatsink (Black Aluminum, 50mm x 37mm x 15mm)

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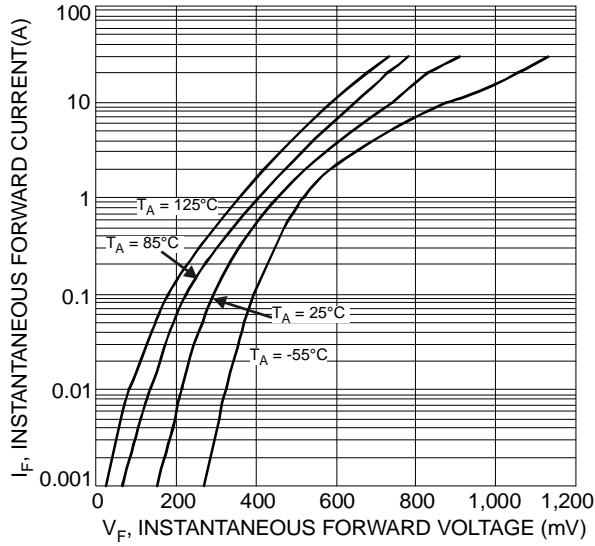


Fig. 1 Typical Forward Characteristics

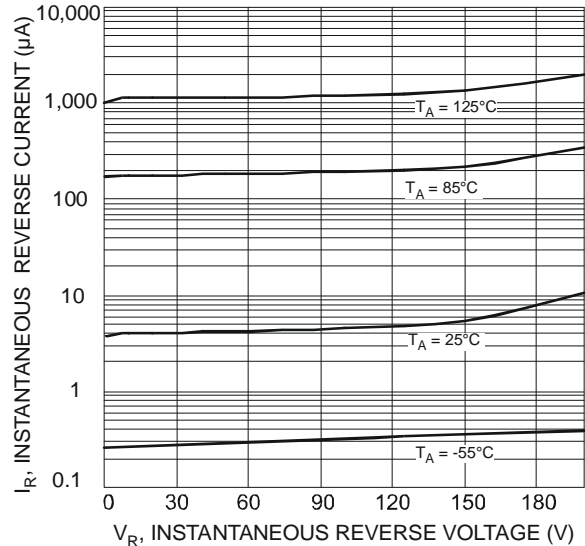


Fig. 2 Typical Reverse Characteristics

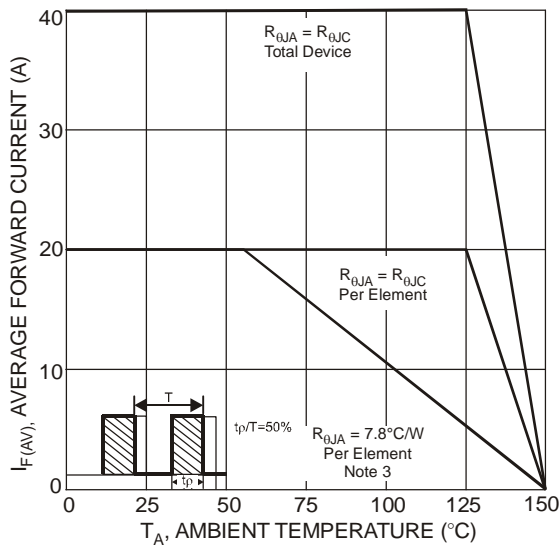


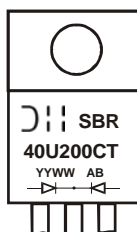
Fig. 3 Forward Current Derating Curve

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

Part Number	Case	Packaging
SBR40U200CT	TO-220AB	50 pieces/tube
SBR40U200CT-G	TO-220AB	50 pieces/tube

Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
5. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR40U200CT-G.

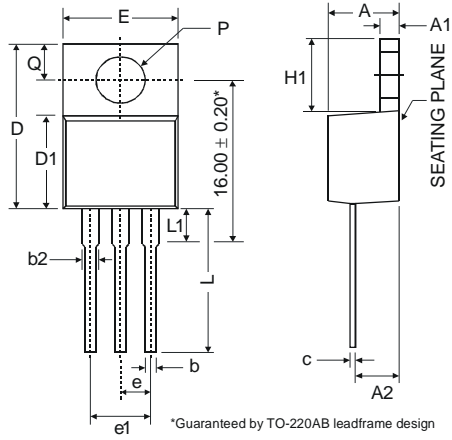
**Marking Information**



SBR40U200CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year (ex: 07 = 2007)  
WW = Week (01-52)

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**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
<b>All Dimensions in mm</b>			

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