

## Features

- Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **Also Available in Green Molding Compound (Note 5)**

## Mechanical Data

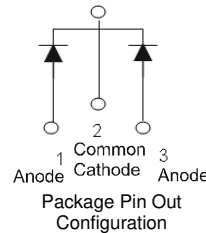
- Case: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 <sup>(e3)</sup>
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 1.85 grams (approximate)



TO-220AB  
Top View



TO-220AB  
Bottom View



## Maximum Ratings (Per Leg) @ $T_A = 25^\circ\text{C}$ 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	$V_{RRM}$	300	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current Per Device (Per Leg) (Total)	$I_O$	30 60	A
Non-Repetitive Peak Forward Surge Current 8.3mS Single Half Sine-Wave Superimposed on rated load	$I_{FSM}$	235	A

## Thermal Characteristics (Per Leg)

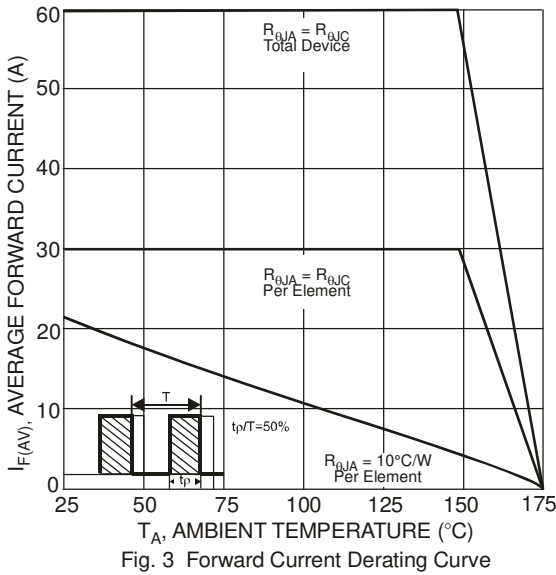
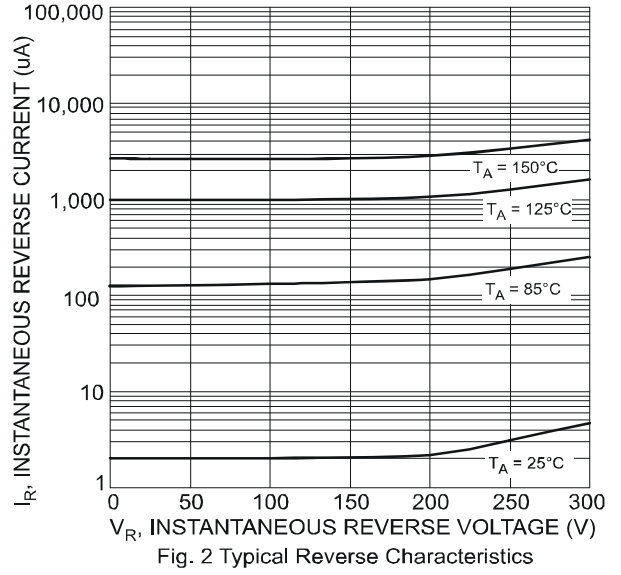
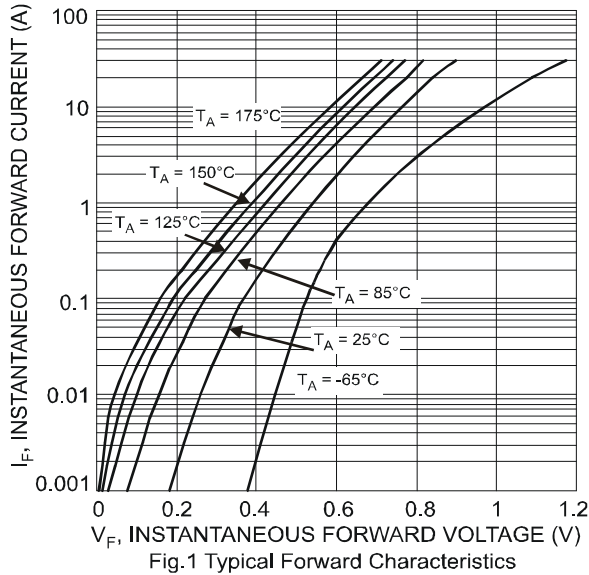
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	$R_{\theta JC}$	8	$^\circ\text{C/W}$
Thermal Resistance Junction to Case (Note 3)			
Thermal Resistance, Junction to Ambient (Note 3)			
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +175	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	$V_F$	-	0.89	0.94	V	$I_F = 30\text{A}, T_J = 25^\circ\text{C}$
			0.78	0.82		$I_F = 30\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 1)	$I_R$	-	5	100	$\mu\text{A}$ mA	$V_R = 300\text{V}, T_J = 25^\circ\text{C}$
			2	10		$V_R = 300\text{V}, T_J = 125^\circ\text{C}$
Reverse Recovery Time	$t_{rr}$	-	32	50	ns	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$
		-	26	35		$I_F = 1\text{A}, V_R = 30\text{V}$ $di/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$

- 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. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>

SBR is a registered trademark of Diodes Incorporated.

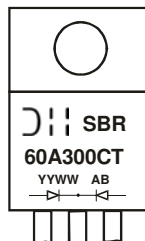


**Ordering Information** (Notes 4 & 5)

Part Number	Case	Packaging
SBR60A300CT	TO-220AB	50 pieces/tube
SBR60A300CT-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: SBR60A300CT-G.

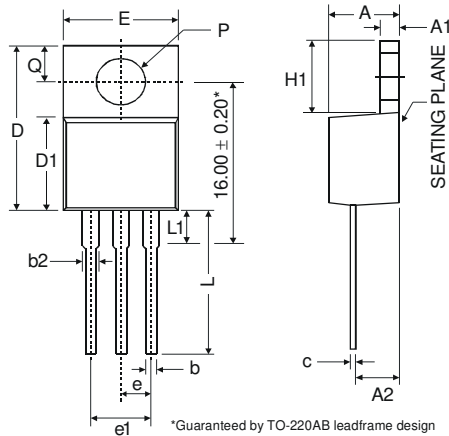
**Marking Information**



SBR60A300CT = 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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