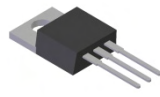


## Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Superior Reverse Avalanche Capability
- 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

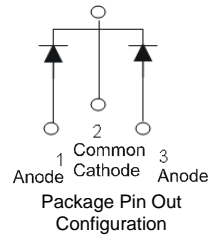
- Case: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 1.85 grams (approximate)



TO-220AB  
Top View



TO-220AB  
Bottom View



## Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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	$V_{RRM}$	30	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current @ $T_C = 140^\circ\text{C}$	$I_O$	30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	280	A
Non-Repetitive Avalanche Energy ( $T_J = 25^\circ\text{C}$ , $I_{AS} = 20\text{A}$ , $L = 8.5\text{ mH}$ )	$E_{AS}$	800	mJ
Repetitive Peak Avalanche Power (1 $\mu\text{s}$ , 25°C)	$P_{ARM}$	9800	W

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	$R_{\theta JC}$	2	$^\circ\text{C/W}$
Thermal Resistance Junction to Case			
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	$V_F$	-	0.41	0.45	V	$I_F = 15\text{A}$ , $T_J = 25^\circ\text{C}$
			0.50	0.54		$I_F = 30\text{A}$ , $T_J = 25^\circ\text{C}$
			0.34	0.37		$I_F = 15\text{A}$ , $T_J = 125^\circ\text{C}$
			—	0.5		$I_F = 30\text{A}$ , $T_J = 125^\circ\text{C}$
Leakage Current (Note 1)	$I_R$	-	0.33 40	1.5 100	mA	$V_R = 30\text{V}$ , $T_J = 25^\circ\text{C}$ $V_R = 30\text{V}$ , $T_J = 125^\circ\text{C}$

- Notes:
1. Short duration pulse test used to minimize self-heating effect.
  2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.

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SBR30U30CT  
Document number: DS31063 Rev. 7 - 2

1 of 4  
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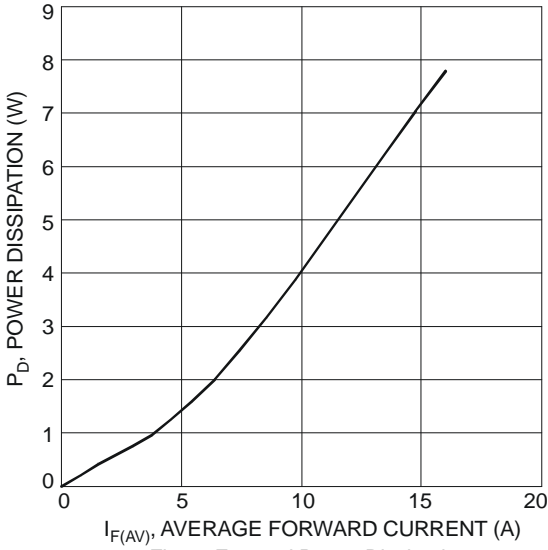


Fig. 1 Forward Power Dissipation

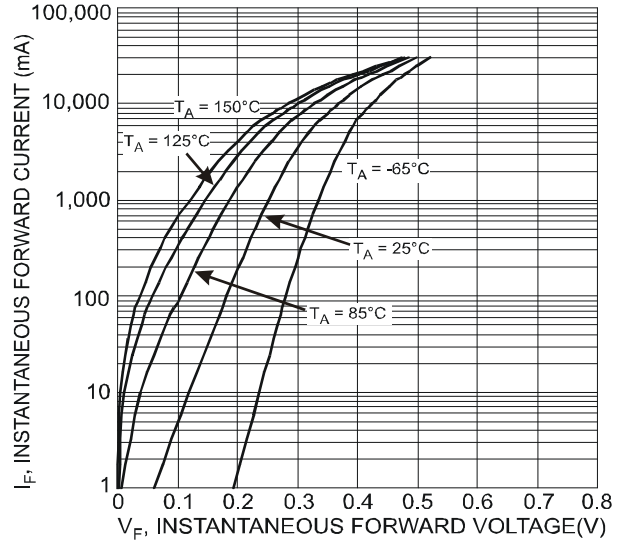


Fig. 2 Typical Forward Characteristics

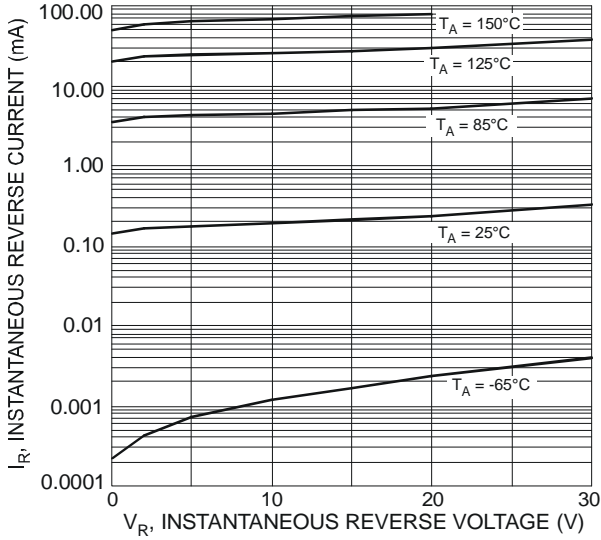


Fig. 3 Typical Reverse Characteristics

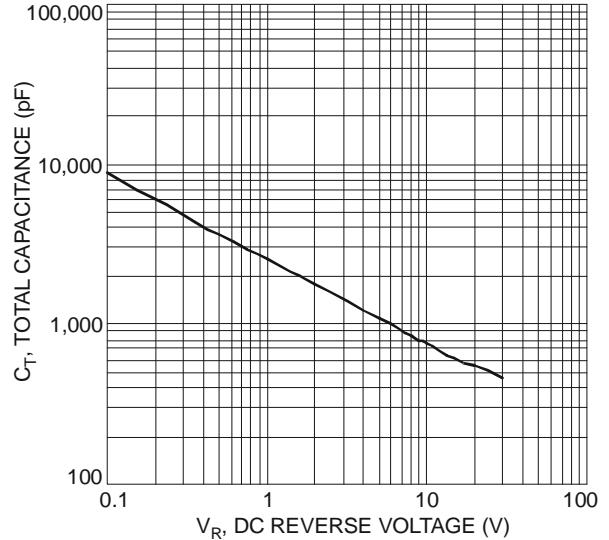


Fig. 4 Total Capacitance vs. Reverse Voltage

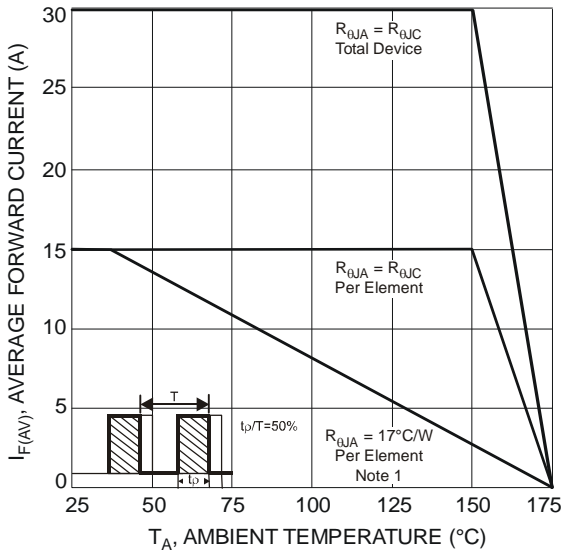


Fig. 5 Forward Current Derating Curve

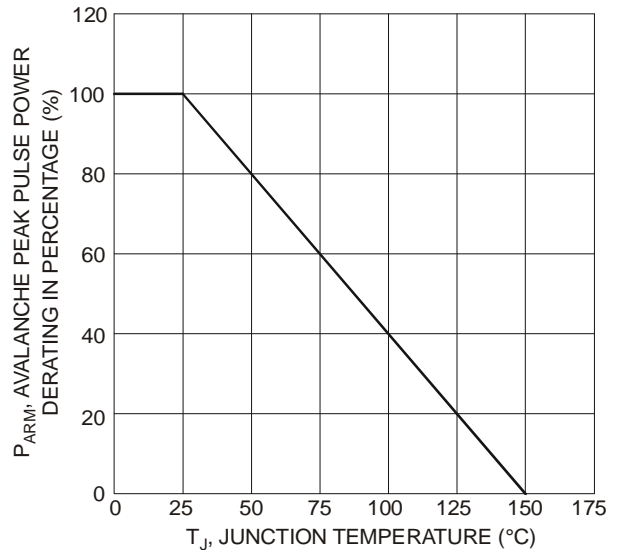


Fig. 6 Pulse Derating Curve

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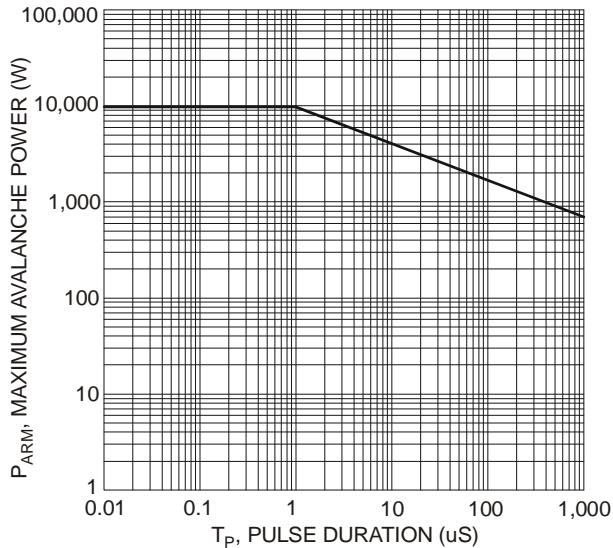


Fig. 7 Maximum Avalanche Power Curve

### Ordering Information (Notes 3 & 4)

Part Number	Case	Packaging
SBR30U30CT	TO-220AB	50 pieces/tube
SBR30U30CT-G	TO-220AB	50 pieces/tube

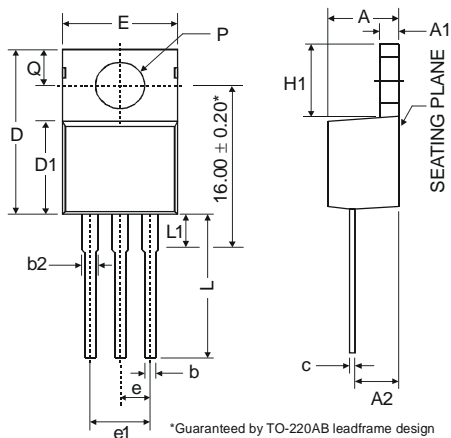
Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 4. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30U30CT-G.

### Marking Information



SBR30U30CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 06 = 2006)  
 WW = Week (01-52)

### Package Outline Dimensions



\*Guaranteed by TO-220AB leadframe design

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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 Document number: DS31063 Rev. 7 - 2

3 of 4  
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