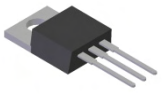
30A SBR®
SUPER BARRIER RECTIFIER

Features

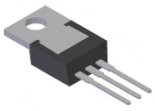
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **Also Available in Green Molding Compound (Note 4)**

Mechanical Data

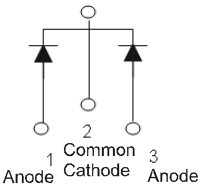
- Case: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 e3
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 1.85 grams (approximate)



TO-220AB
Top View



TO-220AB
Bottom View



Package Pin Out
Configuration

Maximum Ratings @T_A = 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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	30	V
Average Rectified Output Current @ T_C = 140ºC	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 = 25ºC, I_{AS} = 20A, L = 8.5 mH)	E_{AS}	800	mJ
Repetitive Peak Avalanche Power (1µs, 25ºC)	P_{ARM}	9800	W

Thermal Characteristics

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

Electrical Characteristics @T_A = 25°C unless otherwise specified

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

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.*

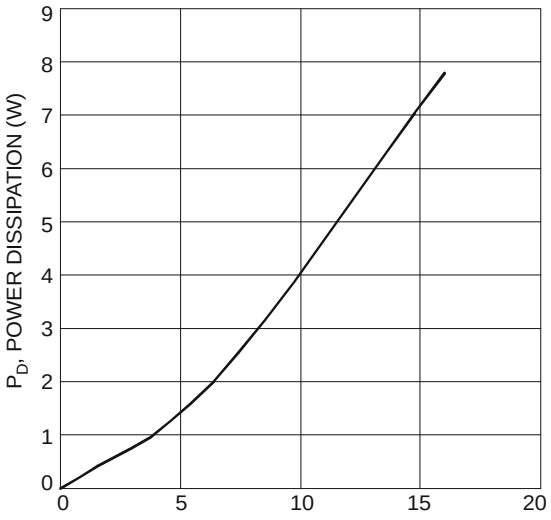


Fig. 1 Forward Power Dissipation

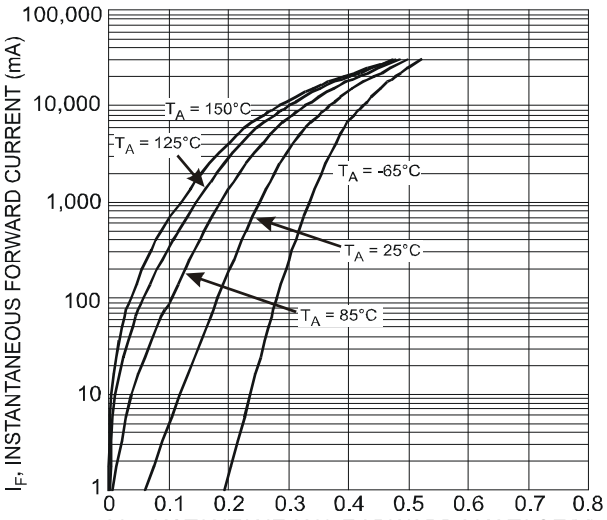


Fig. 2 Typical Forward Characteristics

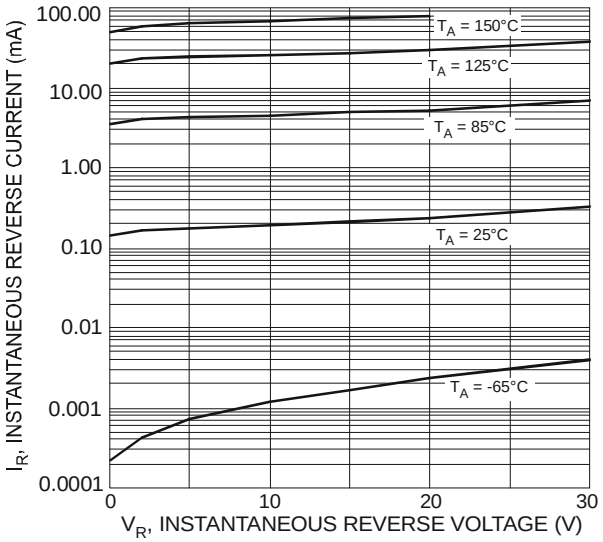


Fig. 3 Typical Reverse Characteristics

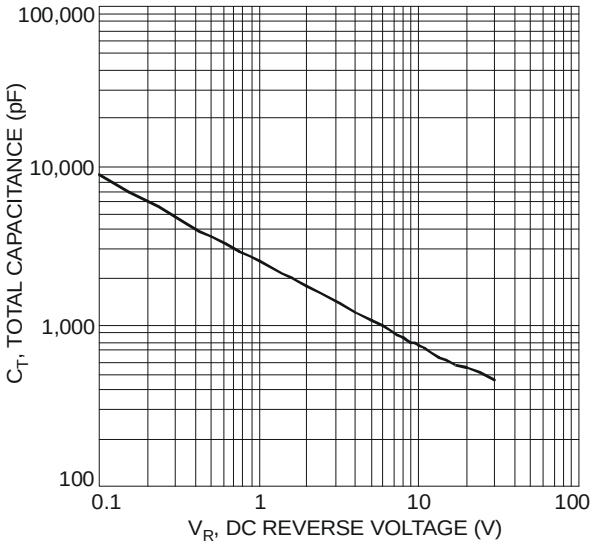


Fig. 4 Total Capacitance vs. Reverse Voltage

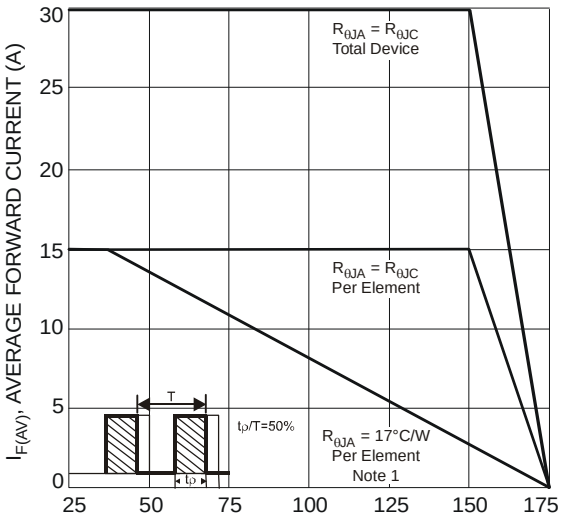


Fig. 5 Forward Current Derating Curve

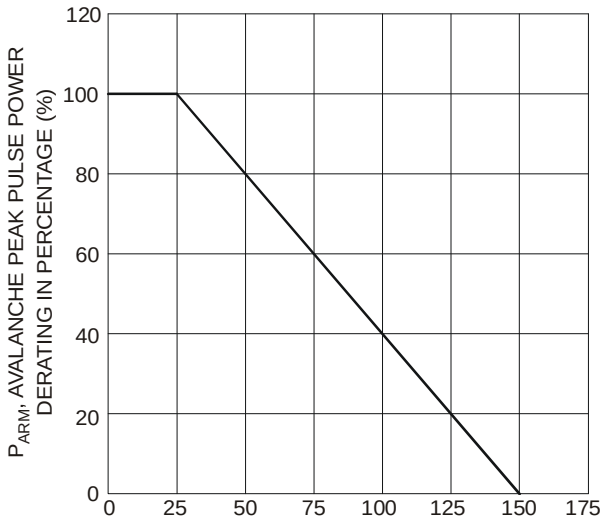


Fig. 6 Pulse Derating Curve

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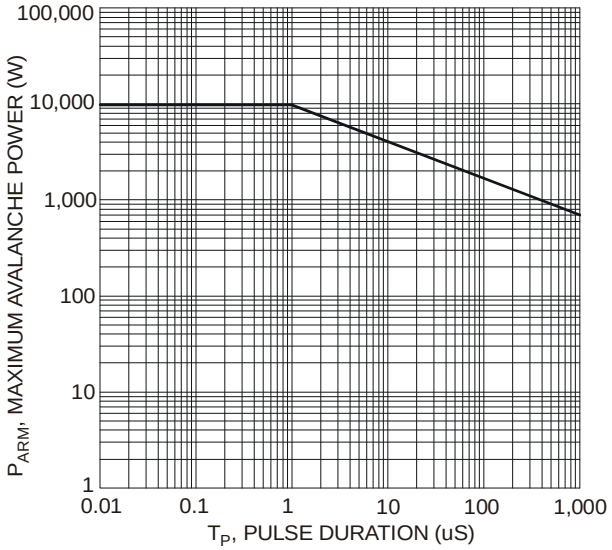


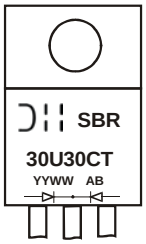
Fig. 7 Maximum Avalanche Power Curve

Ordering Information (Notes 3 & 4)

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

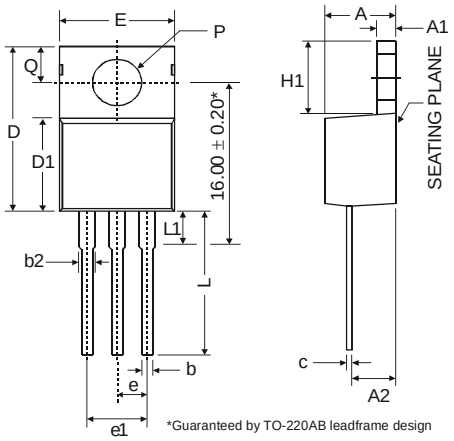
Notes: 3. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
4. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30U30CT-G.

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



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			