NEW PRODUCT

SBR30U30CT

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
- Plastic TO-220AB package
- **Lead Free Finish, RoHS Compliant (Note 3)**

Mechanical Data

- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- 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

Maximum Ratings @ T_A = 25ºC unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive 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
RMS Reverse Voltage	$V_{R(RMS)}$	21	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
Maximum Thermal Resistance Thermal Resistance Junction to Ambient (Note 1) Thermal Resistance Junction to Case	 $R_{\theta JA}$ $R_{\theta JC}$	 17 2	ºC/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150	ºC

Electrical Characteristics @ T_A = 25ºC unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	30	-	-	V	I_R = 1.5mA
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 2)	I_R	-	0.33 40	1.5 100	mA	V_R = 30V, T_j = 25ºC V_R = 30V, T_j = 125ºC

Notes:
1. Test Device on Heatsink (Black Aluminum, 45mm * 20mm * 12mm)
2. Short duration pulse test used to minimize self-heating effect.
3. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7.*

SBR is a registered trademark of Diodes Incorporated.

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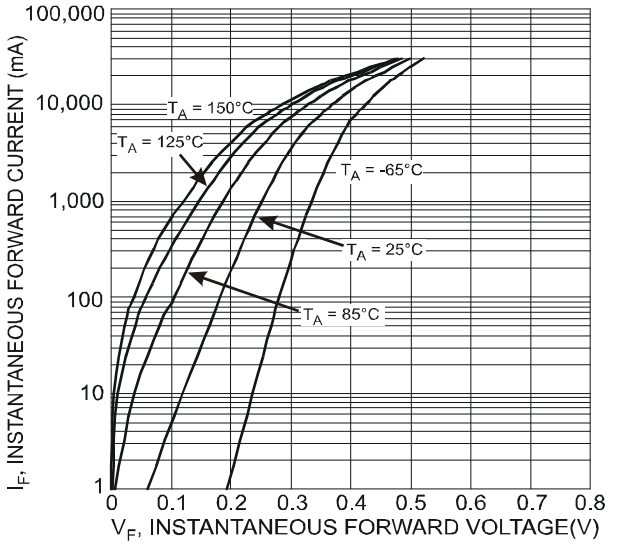

Fig. 1 Typical Forward Characteristics, Per Element

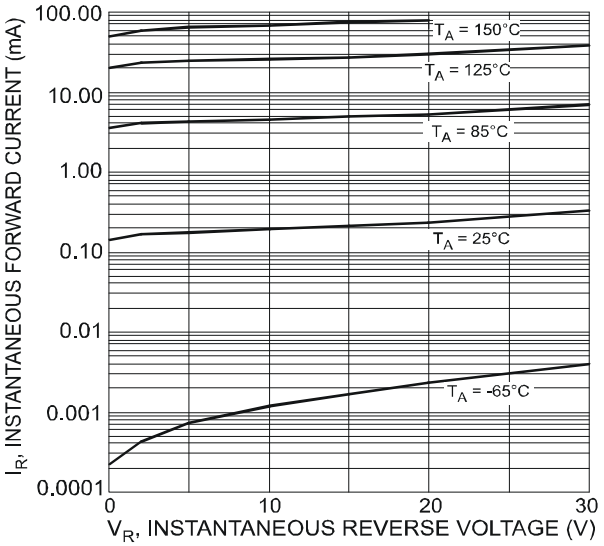

Fig. 2 Typical Reverse Characteristics, Per Element

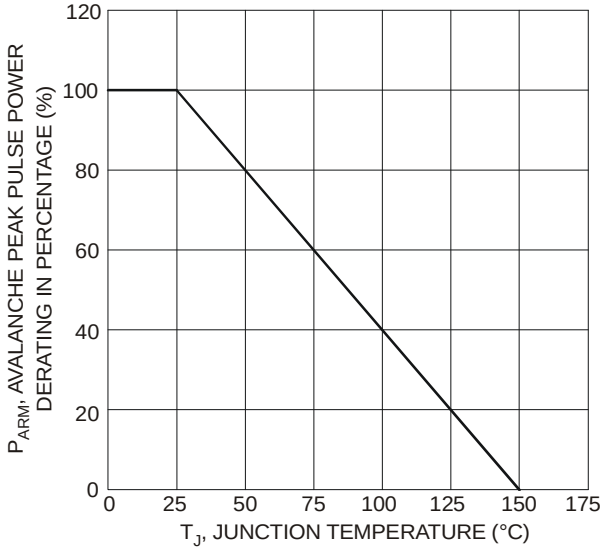

Fig. 3 Pulse Derating Curve, Per Element

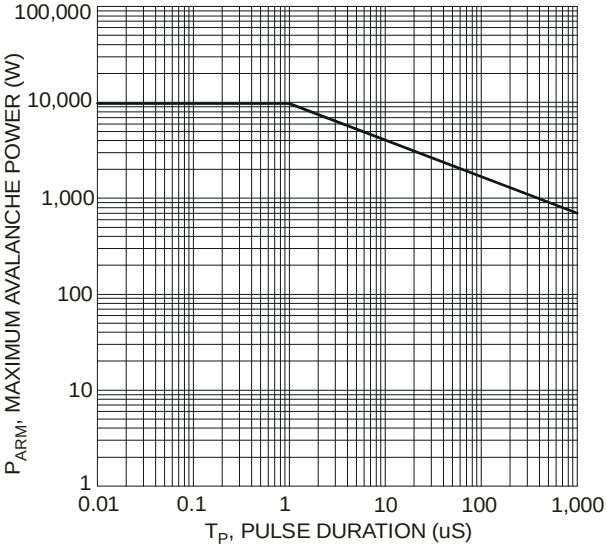

Fig. 4 Maximum Avalanche Power Curve, Per Element

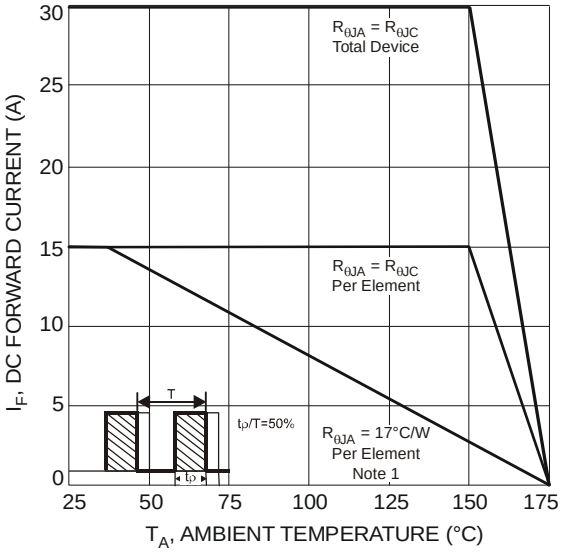

Fig. 5 DC Forward Current Derating

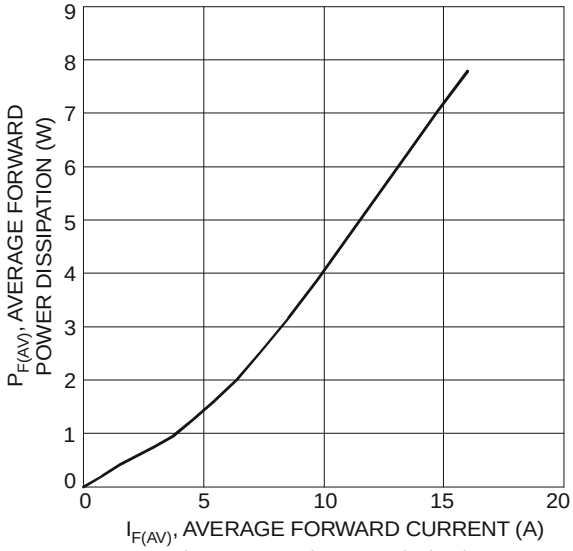

Fig. 6 Forward Power Dissipation

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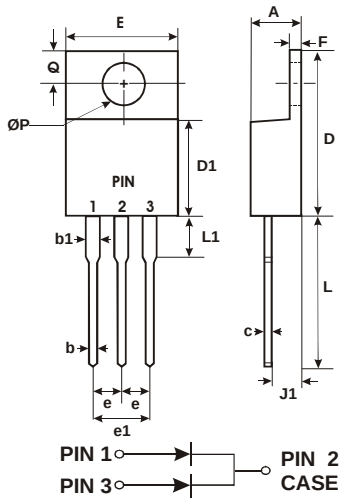
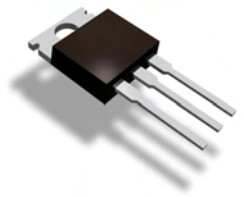
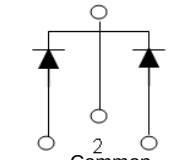
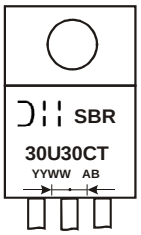
Package Outline Drawing



TO-220AB		
DIM.	MIN.	MAX.
A	4.47	4.67
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.31
e	2.54 typ	
e1	4.98	5.18
F	1.17	1.37
J1	2.52	2.82
L	13.40	13.80
L1	3.56	3.96
ØP	3.735	3.935
Q	2.59	2.89
All Dimensions in Millimeters		

Marking, Polarity, Weight & Ordering Information

	Case Style	Polarity	Marking	Weight
SBR30U30CT	 TO-220AB	Case 		2.1g

Ordering Information	Date Code	Other Marking Information
SBR30U30CT 50 pieces/tube	YY = Last two digits of year, ex = 07 = 2007 WW = Week (01-52)	A = Foundry Code B = Assembly Code