

## 30A SBR<sup>®</sup> Super Barrier Rectifier

**NEW PRODUCT**

### 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<sub>A</sub> = 25°C 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	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Output Current @ T <sub>C</sub> = 140°C	I <sub>O</sub>	30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	280	A
Non-Repetitive Avalanche Energy (T <sub>J</sub> = 25°C, I <sub>AS</sub> = 20A, L = 8.5 mH)	E <sub>AS</sub>	800	mJ
Repetitive Peak Avalanche Power (1μs, 25°C)	P <sub>ARM</sub>	9800	W
Maximum Thermal Resistance			
Thermal Resistance Junction to Ambient (Note 1)	R <sub>θJA</sub>	17	°C/W
Thermal Resistance Junction to Case	R <sub>θJC</sub>	2	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	V <sub>(BR)R</sub>	30	-	-	V	I <sub>R</sub> = 1.5mA
Forward Voltage Drop (per leg)	V <sub>F</sub>	-	0.41	0.45	V	I <sub>F</sub> = 15A, T <sub>J</sub> = 25°C
			0.50	0.54		I <sub>F</sub> = 30A, T <sub>J</sub> = 25°C
			0.34	0.37		I <sub>F</sub> = 15A, T <sub>J</sub> = 125°C
			—	0.5		I <sub>F</sub> = 30A, T <sub>J</sub> = 125°C
Leakage Current (Note 2)	I <sub>R</sub>	-	0.33	1.5	mA	V <sub>R</sub> = 30V, T <sub>J</sub> = 25°C V <sub>R</sub> = 30V, T <sub>J</sub> = 125°C
			40	100		

- 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*.

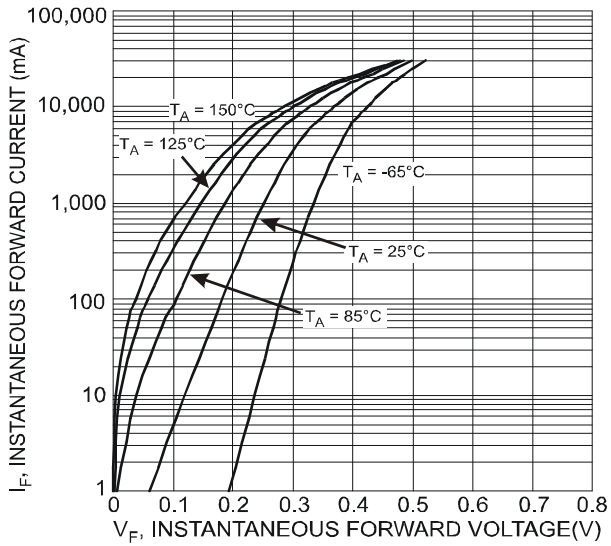


Fig. 1 Typical Forward Characteristics, Per Element

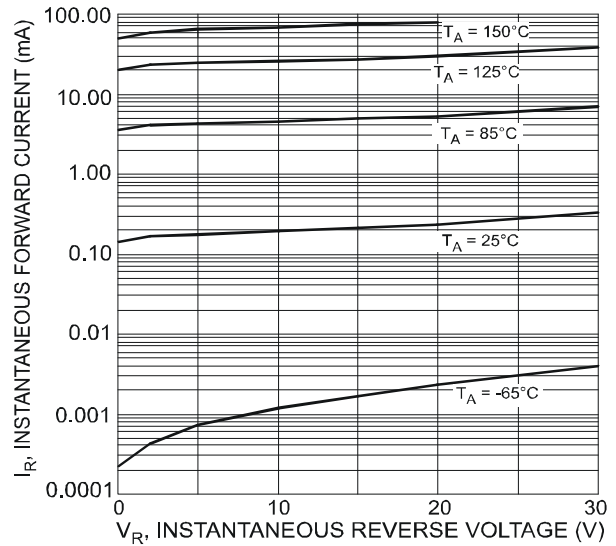


Fig. 2 Typical Reverse Characteristics, Per Element

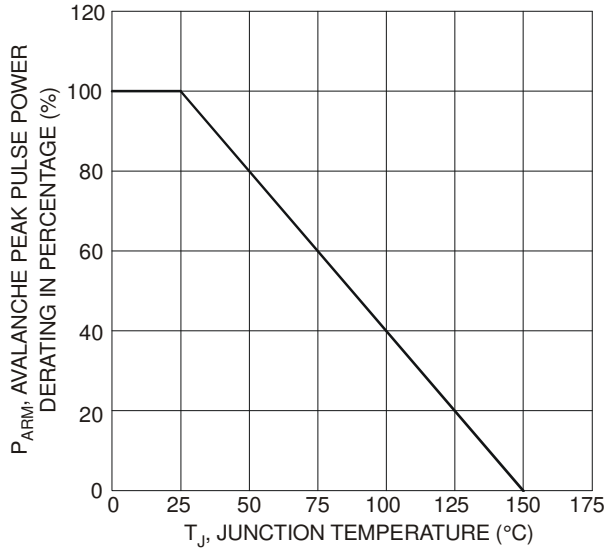


Fig. 3 Pulse Derating Curve, Per Element

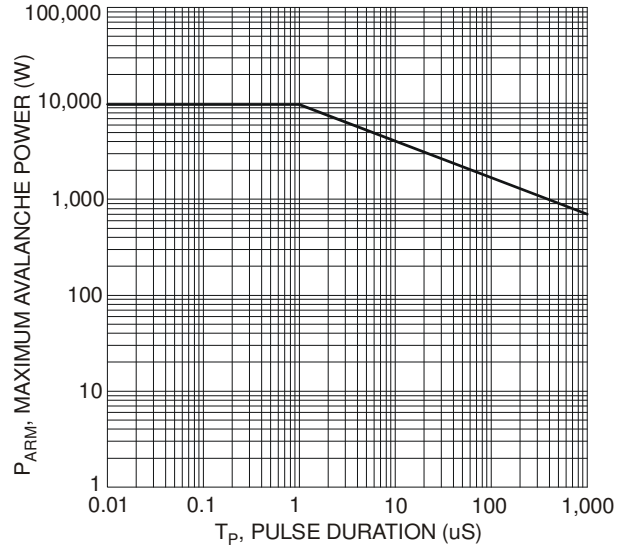


Fig. 4 Maximum Avalanche Power Curve, Per Element

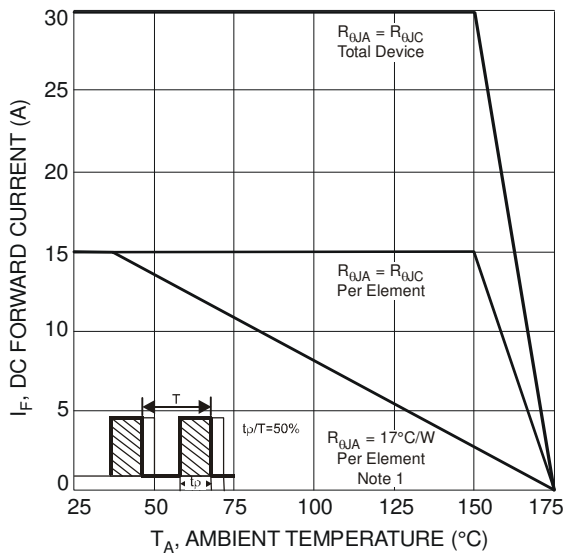


Fig. 5 DC Forward Current Derating

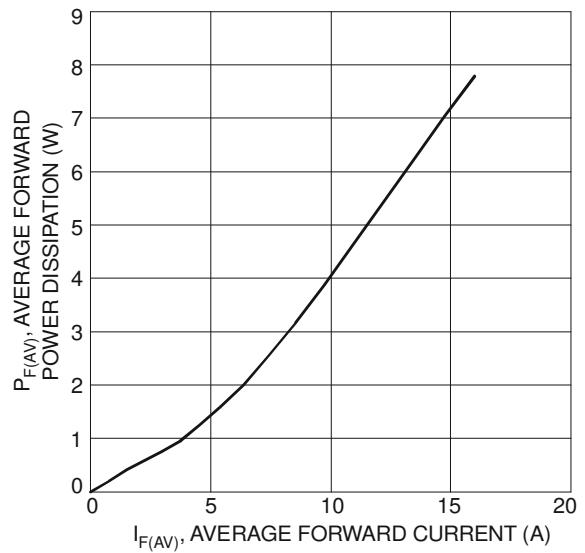
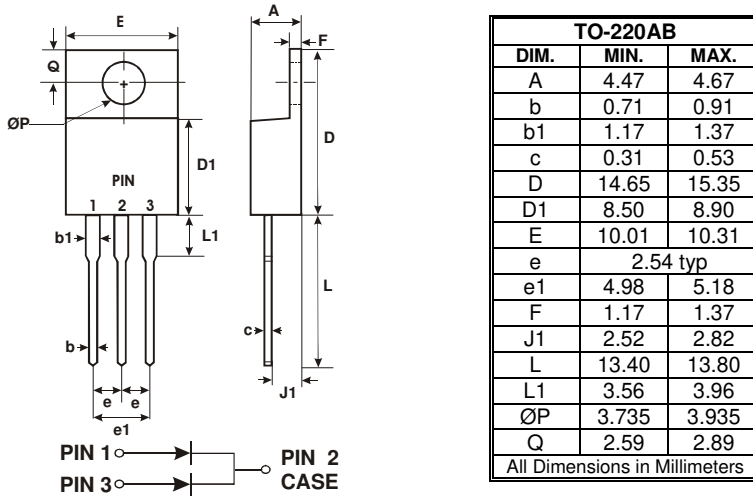

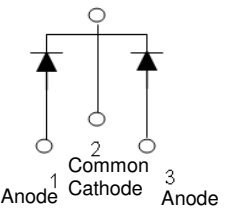
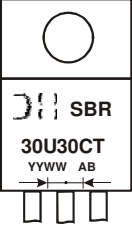


Fig. 6 Forward Power Dissipation

## Package Outline Drawing



## Marking, Polarity, Weight & Ordering Information

	Case Style	Polarity	Marking	Weight
<b>SBR30U30CT</b>	 TO-220AB			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

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