

**20A SBR<sup>®</sup>**  
**Super Barrier Rectifier**

NEW PRODUCT

**Features**

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Super Barrier Design
- Soft, Fast Switching Capability
- Molded Plastic TO-220AB, and ITO-220AB packages
- **Lead Free Finish, RoHS Compliant (Note 2)**

**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: See Page 4
- Ordering Information: See Page 4

**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>	150	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	106	V
Average Rectified Output Current @ T <sub>C</sub> = 140°C	I <sub>O</sub>	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200	A
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I <sub>RRM</sub>	3	A
Maximum Thermal Resistance (per leg)	R <sub>θJC</sub>	2	°C/W
Package = TO-220AB			
Package = ITO-220AB		4	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V <sub>(BR)R</sub>	150	-	-	V	I <sub>R</sub> = 0.5 mA
Forward Voltage Drop	V <sub>F</sub>	-	-	0.78	V	I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C
			0.62	0.65		I <sub>F</sub> = 10A, T <sub>J</sub> = 125°C
			-	0.86		I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C
Leakage Current (Note 1)	I <sub>R</sub>	-	-	0.5 25	mA	V <sub>R</sub> = 150V, T <sub>J</sub> = 25 °C V <sub>R</sub> = 150V, T <sub>J</sub> = 125 °C

Notes:

1. Short duration pulse test used to minimize self-heating effect.
2. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7*.

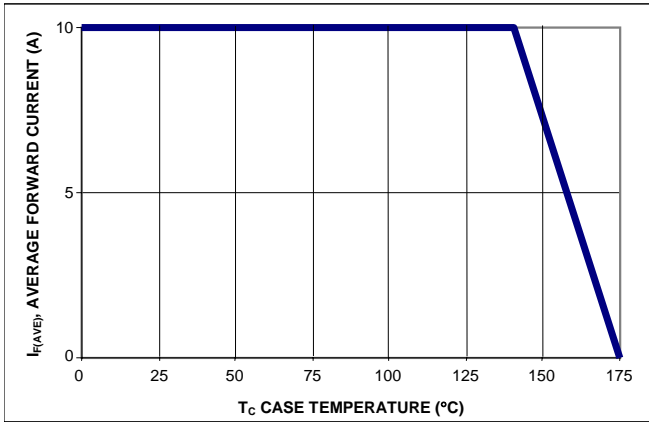


Figure 1: Current Derating Curve, Per Element

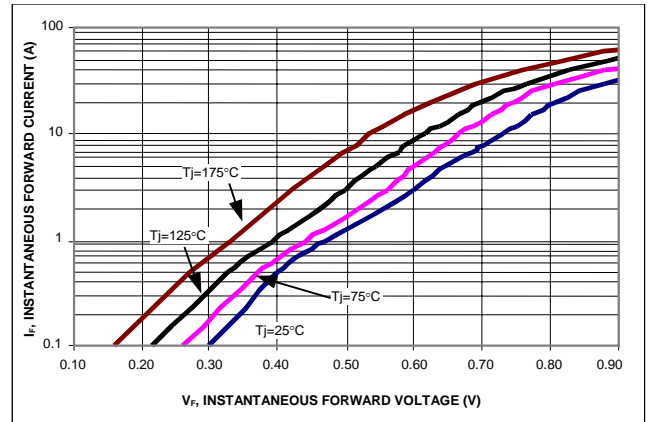


Figure 2: Typical Forward Characteristics, Per Element

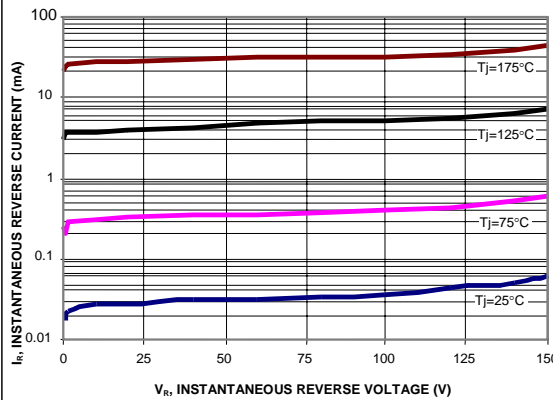


Figure 3: Typical Reverse Characteristics, Per Element

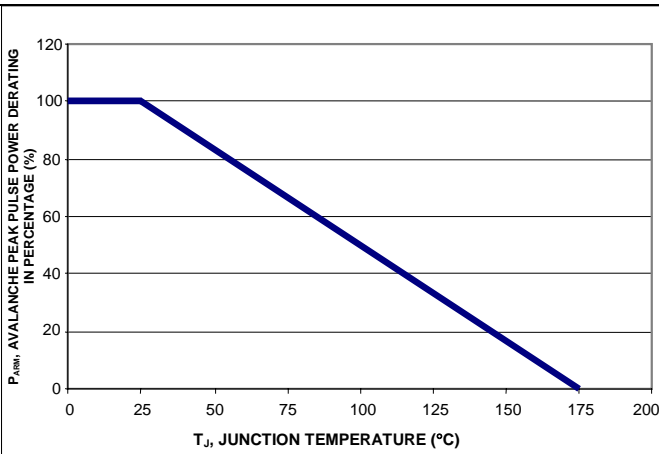


Figure 4: Pulse Derating Curve, Per Element

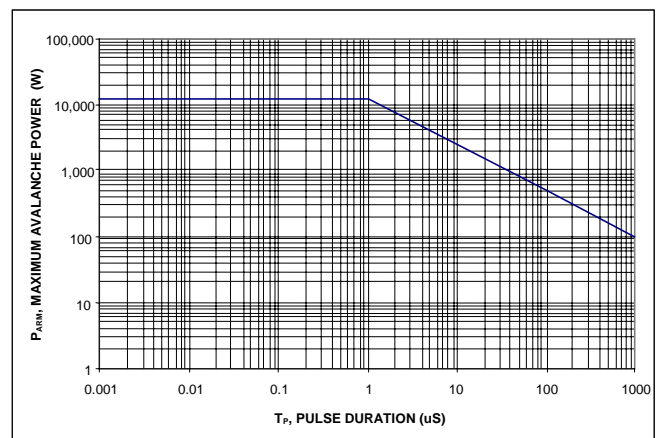
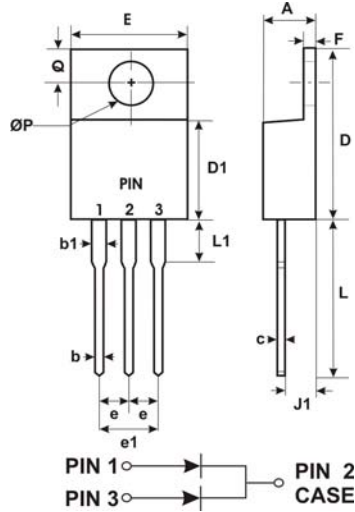


Figure 5: Maximum Avalanche Power Curve, Per Element

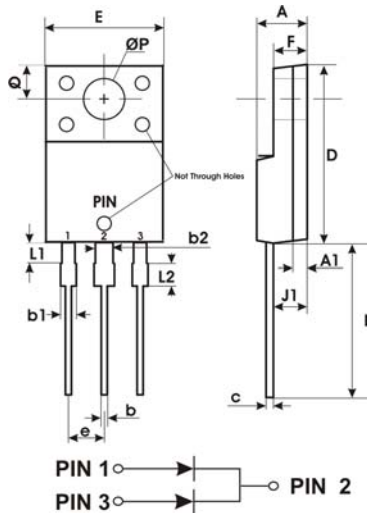
Package Outline Drawings

**TO-220AB**





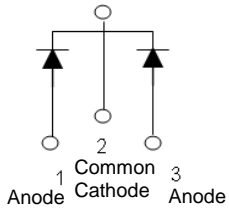
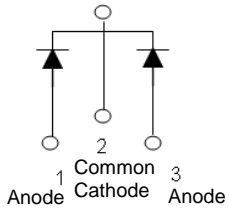


TO-220AB		
DIM.	MIN.	MAX.
A	4.47	4.67
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.31
e	2.54 typ	
e1	4.98	5.18
F	1.17	1.37
J1	2.52	2.82
L	13.40	13.80
L1	3.56	3.96
ØP	3.735	3.935
Q	2.59	2.89
All Dimensions in Millimeters		

**ITO-220AB**



ITO-220AB		
DIM.	MIN.	MAX.
A	4.30	4.70
b	0.50	0.75
b1	1.10	1.35
b2	1.50	1.75
c	0.50	0.75
D	14.80	15.20
E	9.96	10.36
e	2.54 typ	
F	2.80	3.20
J1	2.50	2.90
L	12.80	13.60
L1	1.70	1.90
ØP	3.50 typ	
Q	2.70 typ	
All Dimensions in Millimeters		

**Marking, Polarity, Weight & Ordering Information**

	<b>SBR20U150CT</b>	<b>SBR20U150CTFP</b>
Case Style	 TO-220AB	 ITO-220AB
Polarity	<p>Case</p>  <p>1 Anode    2 Common Cathode    3 Anode</p>	 <p>1 Anode    2 Common Cathode    3 Anode</p>
Marking		
Weight	2.1g	1.9g

Ordering Information	SBR20U150CT 50 pieces/tube	SBR20U150CTFP 50 pieces/tube
Date Code	YY = Last two digits of year, ex = 06 = 2006 WW = Week (01-52)	
Other Marking Information	A = Foundry Code B = Assembly Code	

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