

20A SBR[®]
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_A = 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 _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	71	V
Average Rectified Output Current @ T _C = 140°C	I _O	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	200	A
Peak Repetitive Reverse Surge Current (2µs-1Khz)	I _{RRM}	3	A
Non-Repetitive Avalanche Energy (T _J = 25°C, I _{AS} = 5A, L = 8.5 mH)	E _{AS}	140	mJ
Repetitive Peak Avalanche Power (1µs, 25°C)	P _{ARM}	13,200	W
Maximum Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB	R _{θJC}	2 4	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{(BR)R}	100	-	-	V	I _R = 0.5 mA
Forward Voltage Drop	V _F	-	-	0.70	V	I _F = 10A, T _J = 25°C
			0.57	0.63		I _F = 10A, T _J = 125°C
			-	0.82		I _F = 20A, T _J = 25°C
Leakage Current (Note 1)	I _R	-	-	0.5 25	mA	V _R = 100V, T _J = 25 °C V _R = 100V, T _J = 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*.

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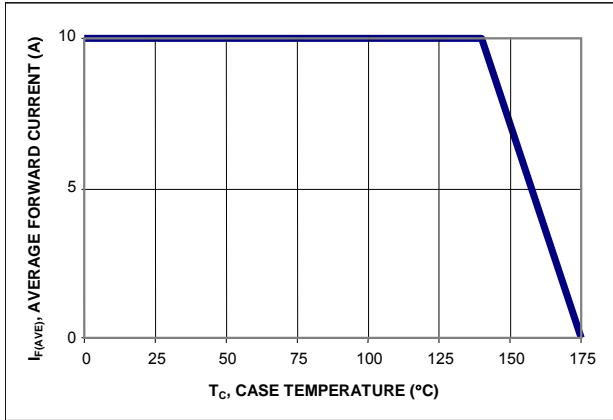


Figure 1: Current Derating Curve, Per Element

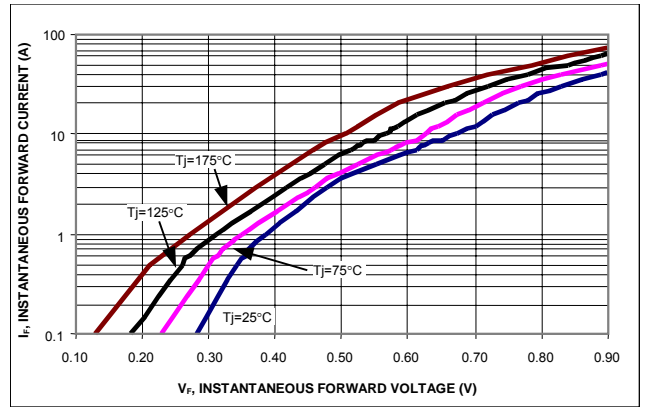


Figure 2: Typical Forward Characteristics, Per Element

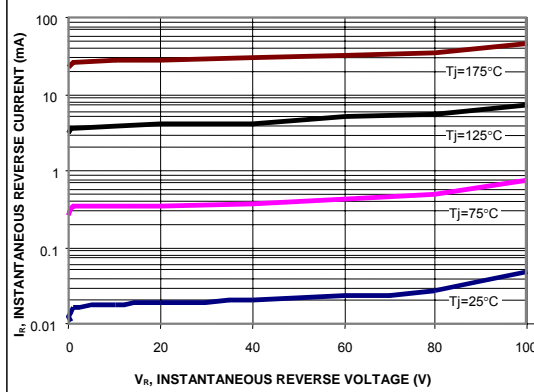


Figure 3: Typical Reverse Characteristics, Per Element

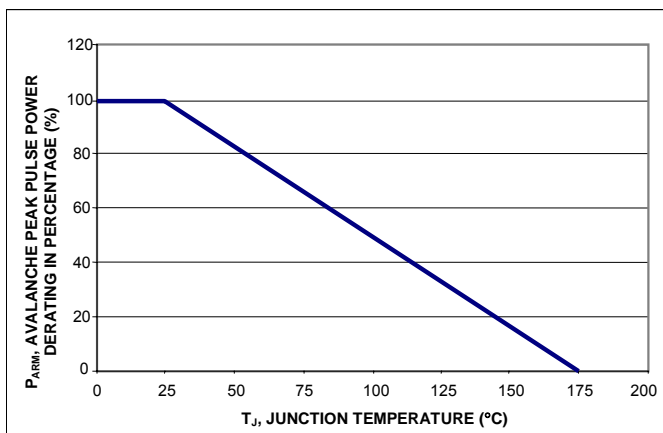


Figure 4: Pulse Derating Curve, Per Element

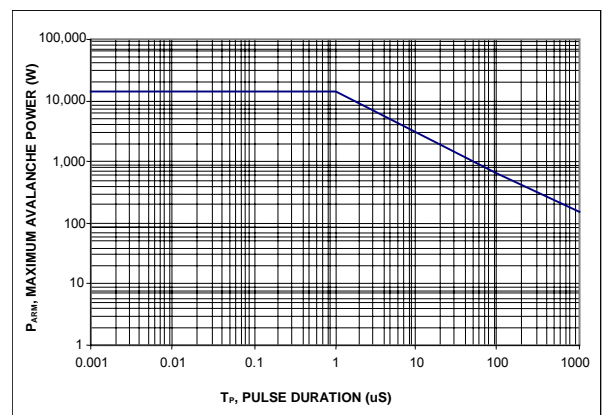
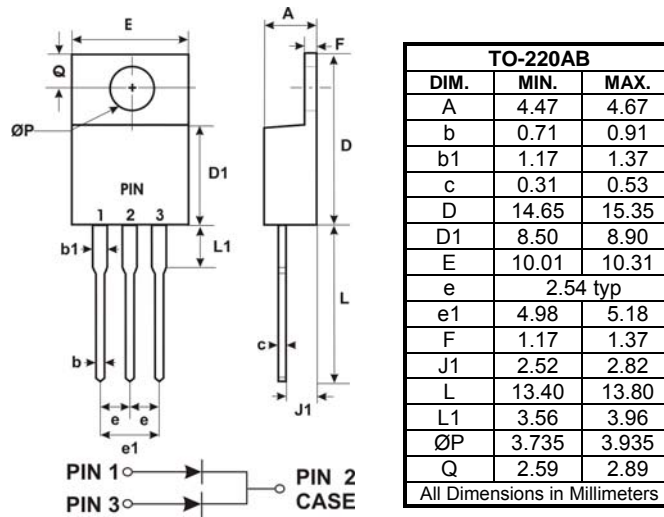


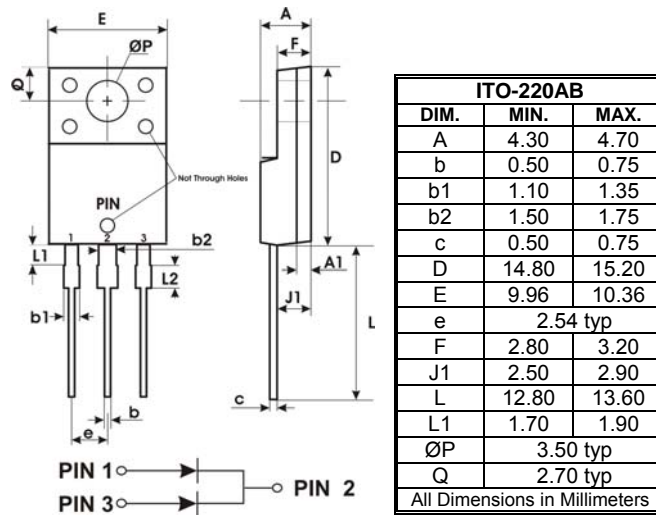
Figure 5: Maximum Avalanche Power Curve, Per Element

Package Outline Drawings



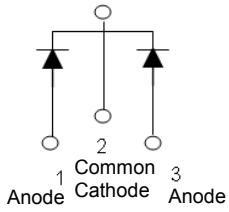
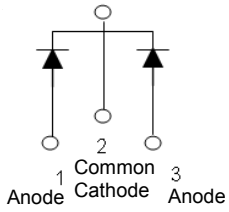
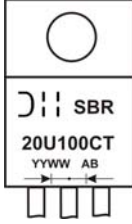

TO-220AB



ITO-220AB



Marking, Polarity, Weight & Ordering Information

	SBR20U100CT	SBR20U100CTFP
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	SBR20U100CT 50 pieces/tube	SBR20U100CTFP 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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