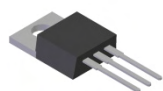


## Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- $\pm 10\text{kV}$  ESD Protection Per IEC 61000-4-2
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Also Available in Green Molding Compound**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

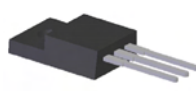
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: TO-220AB – 1.85 grams (approximate)  
ITO-220AB – 1.65 grams (approximate)



TO-220AB  
Top View



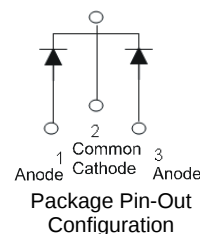
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View

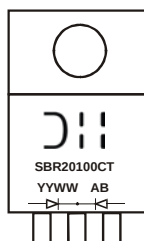


## Ordering Information (Notes 4 and 5)

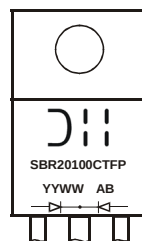
|                                                                                     | Part Number     | Case                  | Packaging      |
|-------------------------------------------------------------------------------------|-----------------|-----------------------|----------------|
|  | SBR20100CT      | TO-220AB              | 50 pieces/tube |
|  | SBR20100CT-G    | TO-220AB              | 50 pieces/tube |
|  | SBR20100CTFP    | ITO-220AB             | 50 pieces/tube |
|  | SBR20100CTFP-G  | ITO-220AB             | 50 pieces/tube |
|  | SBR20100CTFP-JT | ITO-220AB (Alternate) | 50 pieces/tube |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR20100CT-G.
  5. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR20100CT = 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 - 53)



SBR20100CTFP = 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 - 53)

## Maximum Ratings (Per Leg) (@T<sub>A</sub> = +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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage              | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>RM</sub> | 100      | V    |
| Average Rectified Output Current Per Device (Per Leg)<br>(Total)                                    | I <sub>O</sub>                                          | 10<br>20 | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                        | 150      | A    |
| Peak Repetitive Reverse Surge Current (2μS - 1KHz)                                                  | I <sub>RRM</sub>                                        | 2        | A    |
| Isolation Voltage (ITO-220AB Only)<br>From terminal to heatsink t = 3 sec.                          | V <sub>AC</sub>                                         | 2000     | V    |

## Thermal Characteristics (Per Leg)

| Characteristic                                                          | Symbol                            | Value       | Unit |
|-------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance<br>Package = TO-220AB<br>Package = ITO-220AB | R <sub>θJC</sub>                  | 2<br>4      | °C/W |
| Operating and Storage Temperature Range                                 | T <sub>J</sub> , T <sub>STG</sub> | -65 to +175 | °C   |

## Electrical Characteristics (Per Leg) (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic           | Symbol         | Min | Typ       | Max          | Unit | Test Condition                                                                                  |
|--------------------------|----------------|-----|-----------|--------------|------|-------------------------------------------------------------------------------------------------|
| Forward Voltage Drop     | V <sub>F</sub> | -   | -<br>0.67 | 0.82<br>0.75 | V    | I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C   |
| Leakage Current (Note 6) | I <sub>R</sub> | -   | -         | 0.1<br>10    | mA   | V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C<br>V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C |

Notes: 6. Short duration pulse test used to minimize self-heating effect.

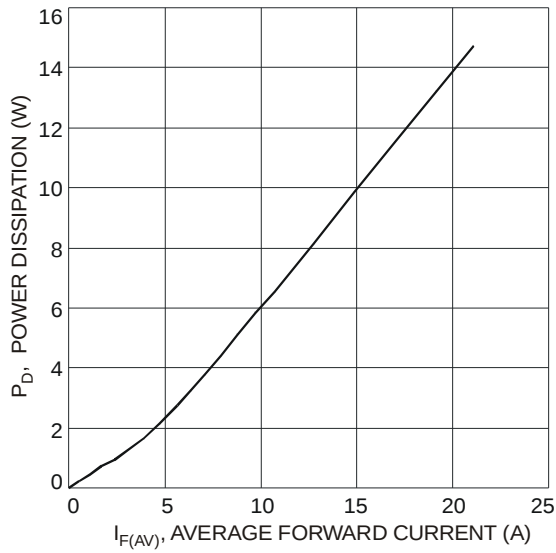


Fig. 1 Forward Power Dissipation

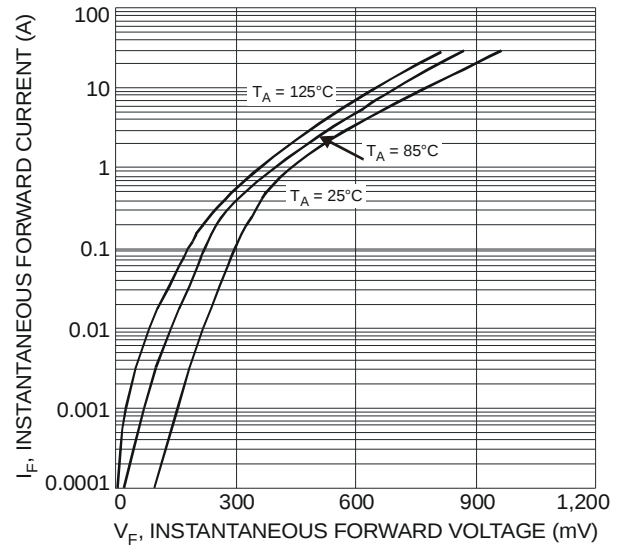


Fig. 2 Typical Forward Characteristics

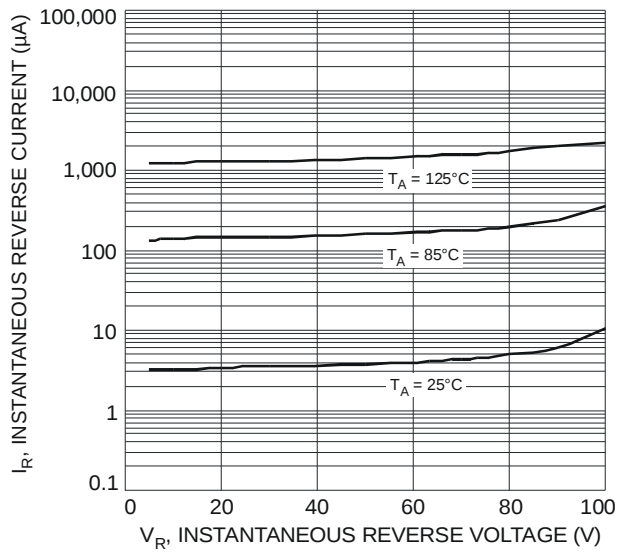


Fig. 3 Typical Reverse Characteristics

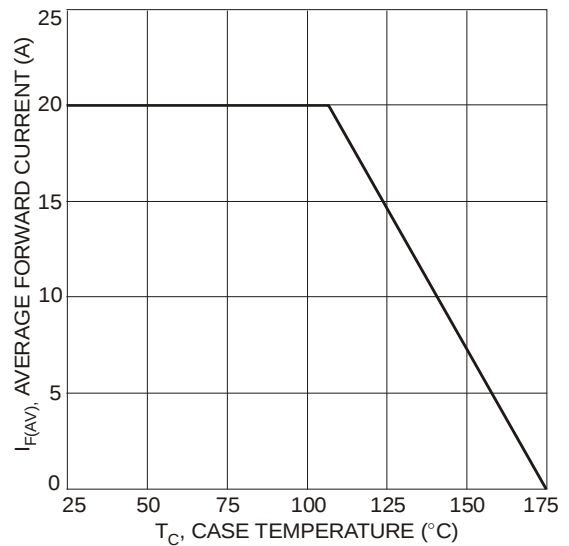
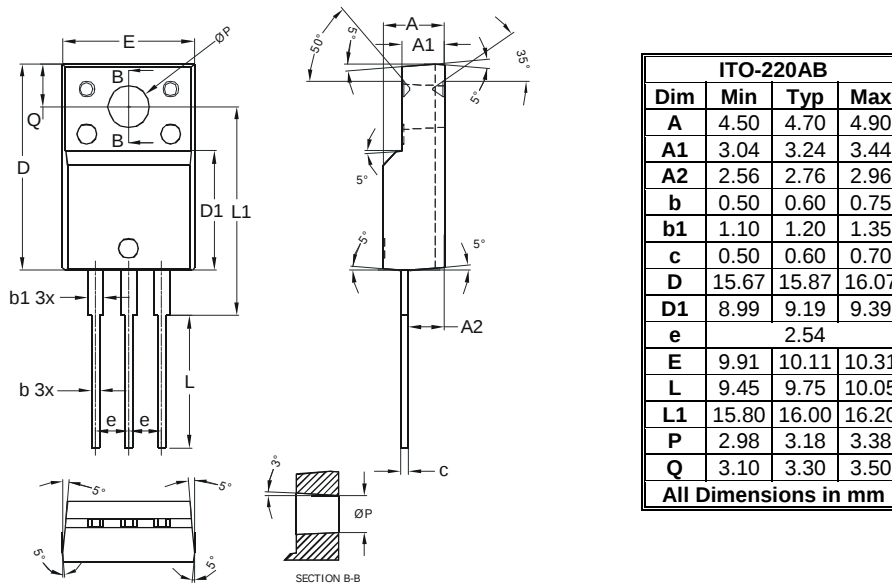
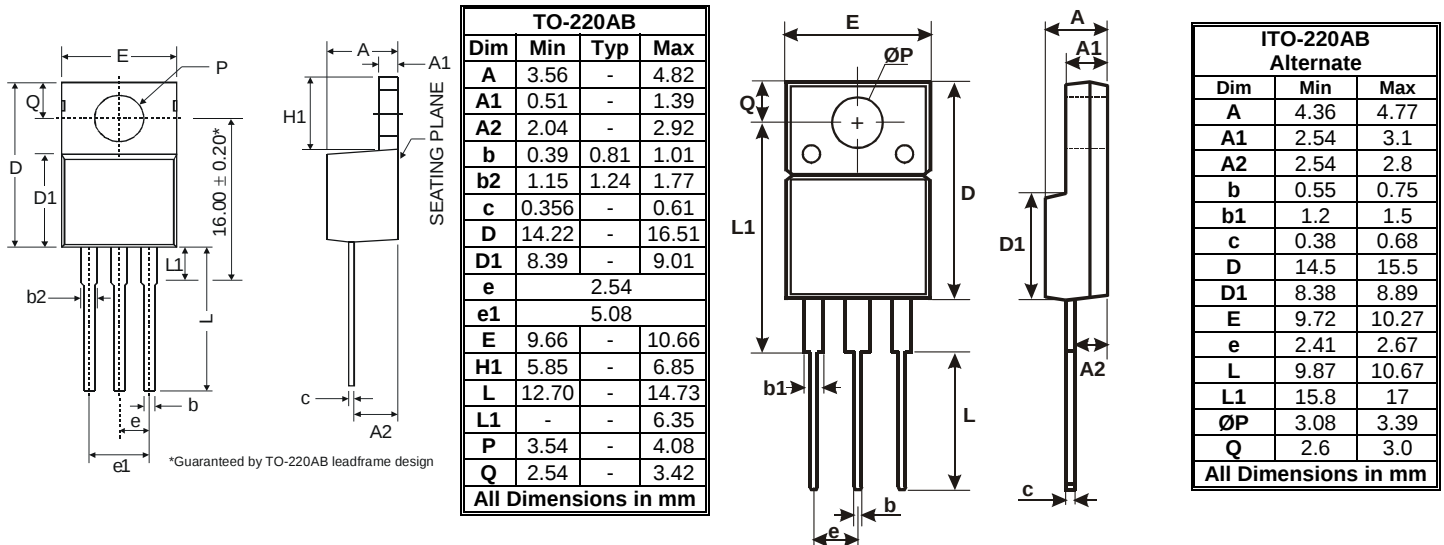


Fig. 4 Forward Current Derating Curve

## Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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