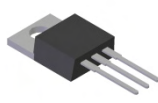


## Features

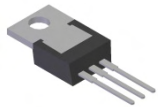
- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Also Available in Green Molding Compound**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

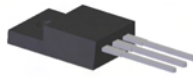
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: TO-220AB – 1.85 grams (approximate)  
ITO-220AB – 1.65 grams (approximate)



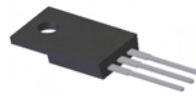
TO-220AB  
Top View



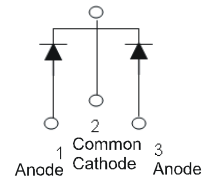
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View



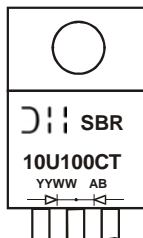
Package Pin-Out  
Configuration

## Ordering Information (Notes 4 and 5)

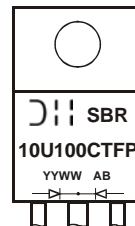
|  | Part Number      | Case                  | Packaging      |
|--|------------------|-----------------------|----------------|
|  | SBR10U100CT      | TO-220AB              | 50 pieces/tube |
|  | SBR10U100CT-G    | TO-220AB              | 50 pieces/tube |
|  | SBR10U100CTFP    | ITO-220AB             | 50 pieces/tube |
|  | SBR10U100CTFP-G  | ITO-220AB             | 50 pieces/tube |
|  | SBR10U100CTFP-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: SBR10U100CT-G.
  5. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR10U100CT = 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)



SBR10U100CTFP = 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) @ $T_A = 25^\circ\text{C}$ 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   | $V_{RRM}$ | 100   | V    |
| Working Peak Reverse Voltage  | $V_{RWM}$ |       |      |
| DC Blocking Voltage   | $V_{RM}$  |       |      |
| Average Rectified Output Current  | $I_O$     | 5     | A    |
| Per Leg<br>Total  |           | 10    |      |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 150   | A    |
| Peak Repetitive Reverse Surge Current (2 $\mu\text{S}$ -1kHz)                                       | $I_{RRM}$ | 3     | A    |
| Isolation Voltage (ITO-220AB Only)<br>From terminal to heatsink $t = 3$ sec.                        | $V_{AC}$  | 2000  | V    |

### Thermal Characteristics (Per Leg)

| Characteristic  | Symbol          | Value       | Unit               |
|---|-----------------|-------------|--------------------|
| Typical Thermal Resistance<br>Package = TO-220AB<br>Package = ITO-220AB | $R_{\theta JC}$ | 2           | $^\circ\text{C/W}$ |
|   |                 | 4           |                    |
| Operating and Storage Temperature Range                                 | $T_J, T_{STG}$  | -65 to +175 | $^\circ\text{C}$   |

### Electrical Characteristics (Per Leg) @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic           | Symbol | Min | Typ            | Max                  | Unit | Test Condition  |
|--------------------------|--------|-----|----------------|----------------------|------|---|
| Forward Voltage Drop     | $V_F$  | -   | -<br>0.53<br>- | 0.67<br>0.56<br>0.82 | V    | $I_F = 5\text{A}, T_J = 25^\circ\text{C}$<br>$I_F = 5\text{A}, T_J = 125^\circ\text{C}$<br>$I_F = 10\text{A}, T_J = 25^\circ\text{C}$ |
| Leakage Current (Note 6) | $I_R$  | -   | -              | 0.2<br>25            | mA   | $V_R = 100\text{V}, T_J = 25^\circ\text{C}$<br>$V_R = 100\text{V}, T_J = 125^\circ\text{C}$   |

Notes: 6. Short duration pulse test used to minimize self-heating effect.  
 7. Using heatsink (by Black Aluminum, 45mm \* 20mm \* 12mm)

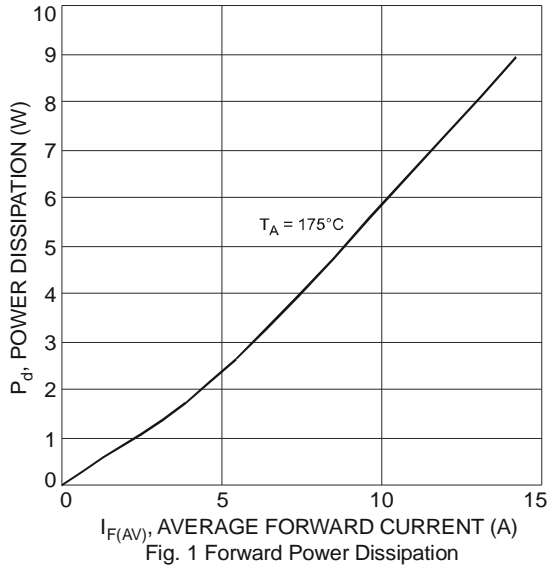


Fig. 1 Forward Power Dissipation

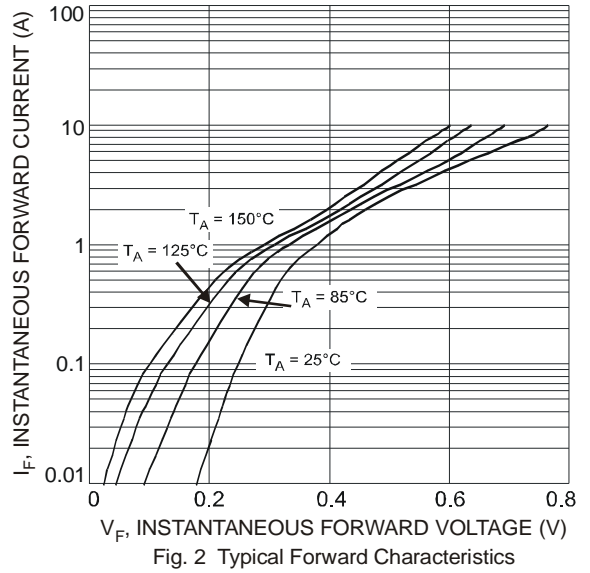


Fig. 2 Typical Forward Characteristics

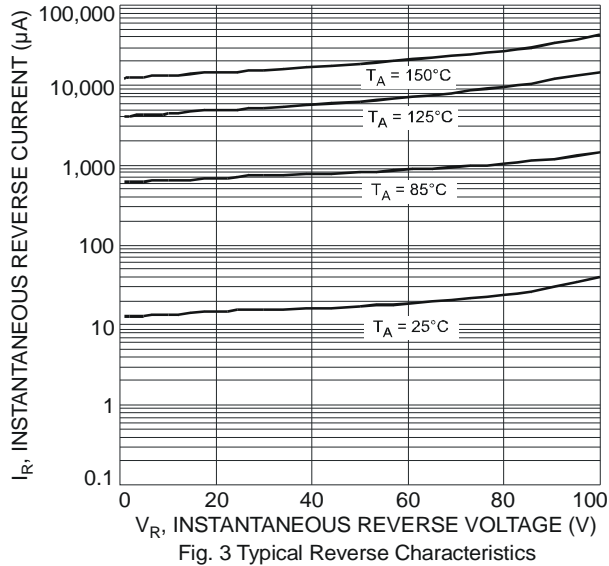


Fig. 3 Typical Reverse Characteristics

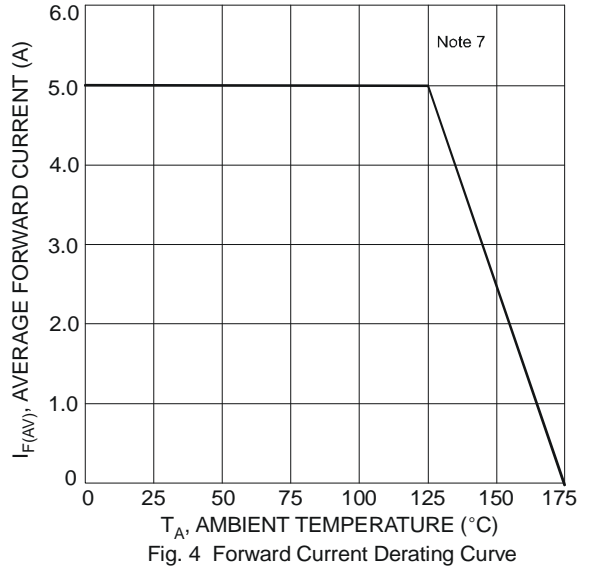


Fig. 4 Forward Current Derating Curve

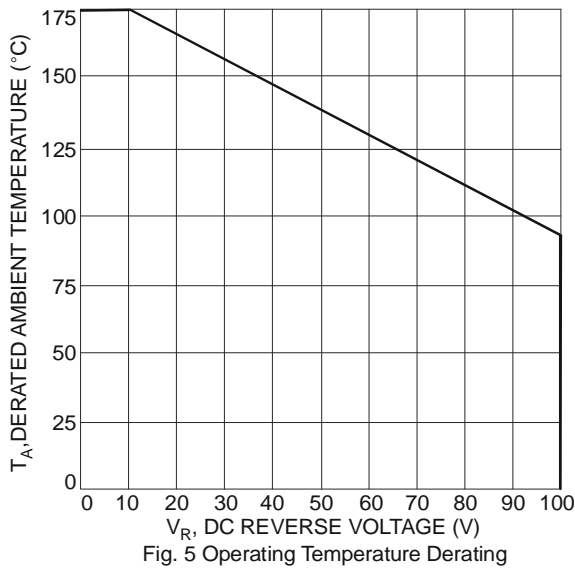
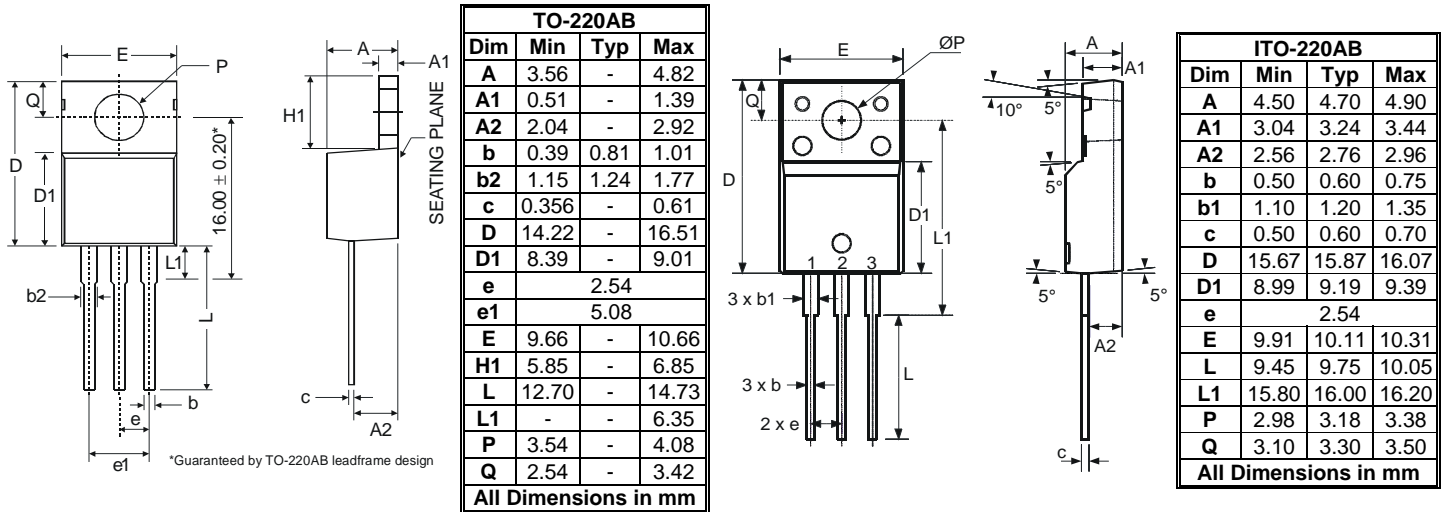


Fig. 5 Operating Temperature Derating

**Package Outline Dimensions**



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