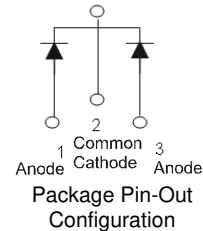


## Features

- 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 (Note 4)**
  - **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)



## Ordering Information (Notes 4 and 5)

|  | Part Number     | Case                  | Packaging      |
|--|-----------------|-----------------------|----------------|
|  | SBR20U60CT      | TO-220AB              | 50 pieces/tube |
|  | SBR20U60CT-G    | TO-220AB              | 50 pieces/tube |
|  | SBR20U60CTFP    | ITO-220AB             | 50 pieces/tube |
|  | SBR20U60CTFP-G  | ITO-220AB             | 50 pieces/tube |
|  | SBR20U60CTFP-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: SBR20U60CT-G.
  5. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR20U60CT = 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)



SBR20U60CTFP = 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 (@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   | V <sub>RRM</sub> | 60    | V    |
| Working Peak Reverse Voltage  | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage   | V <sub>RM</sub>  |       |      |
| Average Rectified Output Current @ T <sub>C</sub> = +110°C  | I <sub>O</sub>   | 20    | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 200   | A    |
| Peak Repetitive Reverse Surge Current (2µS - 1KHz)  | I <sub>RRM</sub> | 3     | A    |
| Isolation Voltage (ITO-220AB Only)<br>From terminal to heatsink t = 3 sec.                          | V <sub>AC</sub>  | 2000  | V    |

### Thermal Characteristics

| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance (per leg)<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 +150 | °C   |

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

| Characteristic           | Symbol         | Min | Typ  | Max  | Unit | Test Condition                                |
|--------------------------|----------------|-----|------|------|------|---|
| Forward Voltage Drop     | V <sub>F</sub> | -   | -    | 0.57 | V    | I <sub>F</sub> = 10A, T <sub>J</sub> = +25°C  |
|                          |                |     | 0.45 | 0.47 |      | I <sub>F</sub> = 10A, T <sub>J</sub> = +125°C |
|                          |                |     | -    | 0.71 |      | I <sub>F</sub> = 20A, T <sub>J</sub> = +25°C  |
| Leakage Current (Note 6) | I <sub>R</sub> | -   | -    | 0.5  | mA   | V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C  |
|                          |                |     |      | 100  |      | V <sub>R</sub> = 60V, T <sub>J</sub> = +125°C |

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

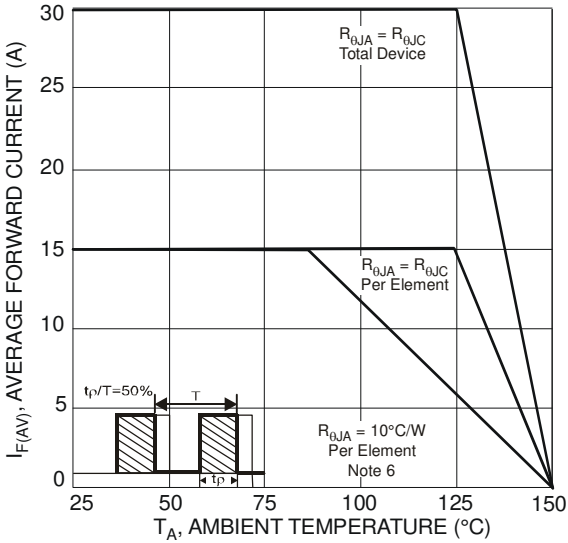


Figure 1 Forward Current Derating Curve

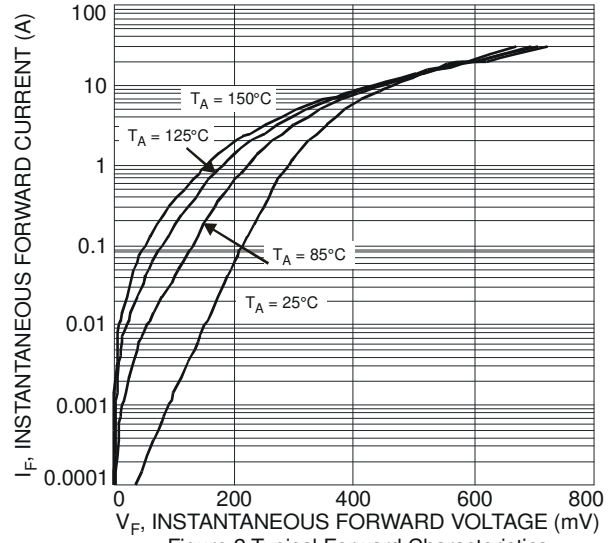


Figure 2 Typical Forward Characteristics

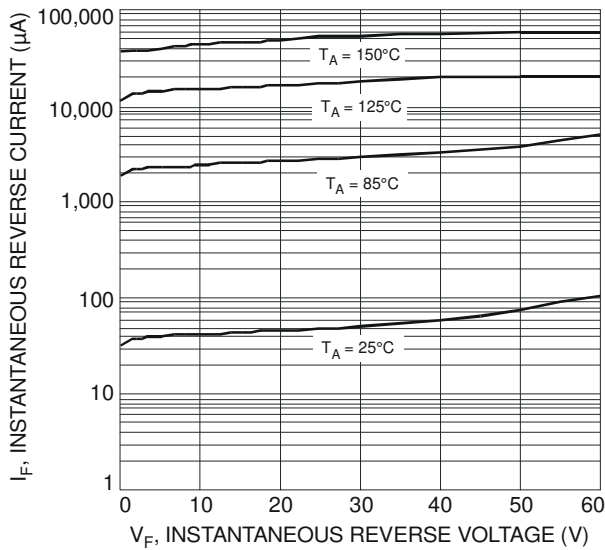
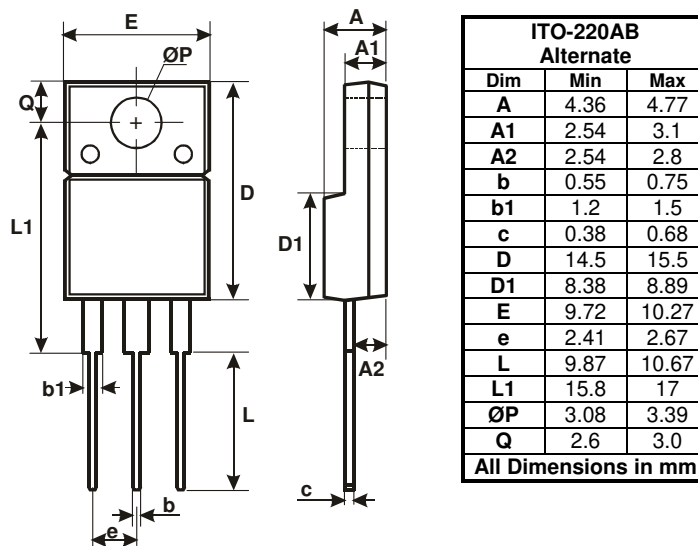
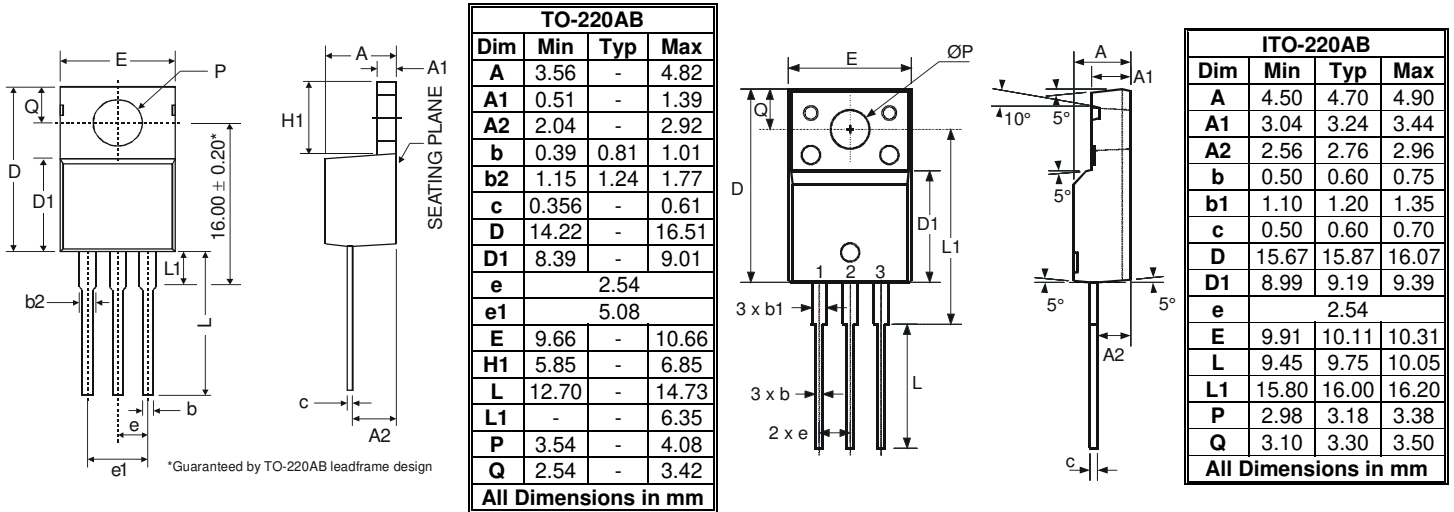


Figure 3 Typical Reverse Characteristics

## Package Outline Dimensions

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



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