

## Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 200°C Operating Junction Temperature
- **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



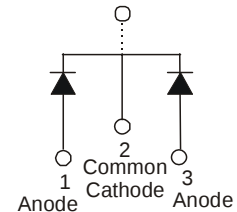
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View



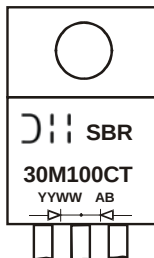
Package Pin Out  
Configuration

## Ordering Information (Notes 4 & 5)

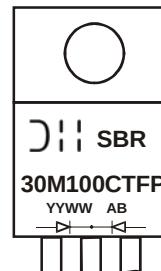
|                                                                                     | Part Number        | Case                 | Packaging      |
|-------------------------------------------------------------------------------------|--------------------|----------------------|----------------|
|  | SBR30M100CT        | TO-220AB             | 50 pieces/tube |
|  | SBR30M100CT-G      | TO-220AB             | 50 pieces/tube |
|  | SBR30M100CTFP      | ITO-220AB            | 50 pieces/tube |
|  | SBR30M100CTFP-G    | ITO-220AB            | 50 pieces/tube |
|  | SBR30M100CTFP-JT-G | 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: SBR30M100CT-G.
  5. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR30M100CT = 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)



SBR30M100CTFP = 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                                                                     | V <sub>RRM</sub> | 100      | V    |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub> |          |      |
| DC Blocking Voltage                                                                                 | V <sub>RM</sub>  |          |      |
| Average Rectified Output Current Per Device (Per Leg)<br>(Total)                                    | I <sub>O</sub>   | 15<br>30 | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 250      | 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    |

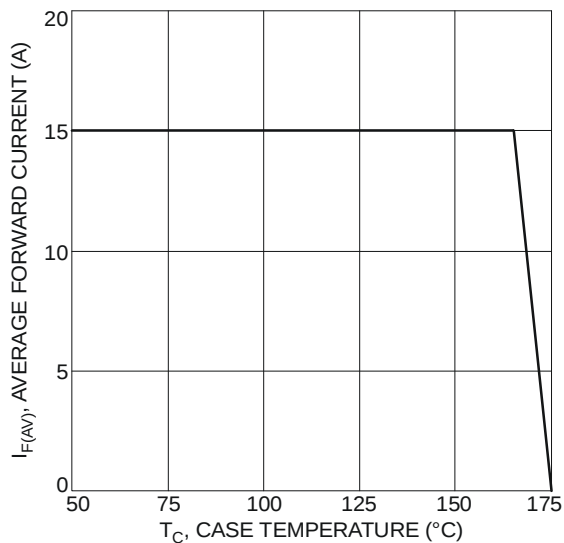
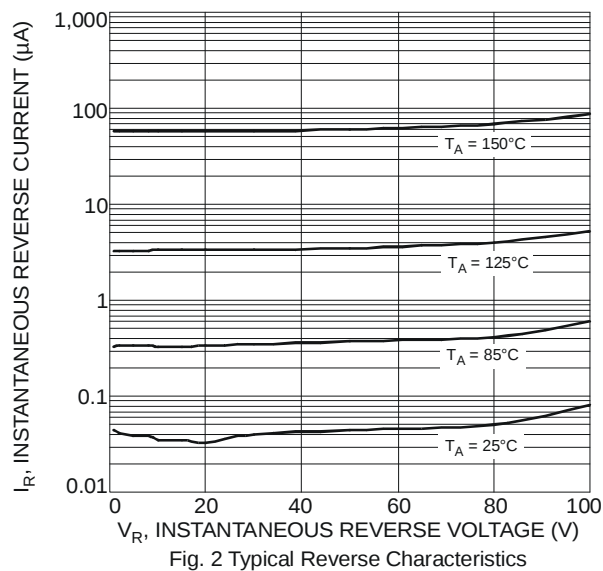
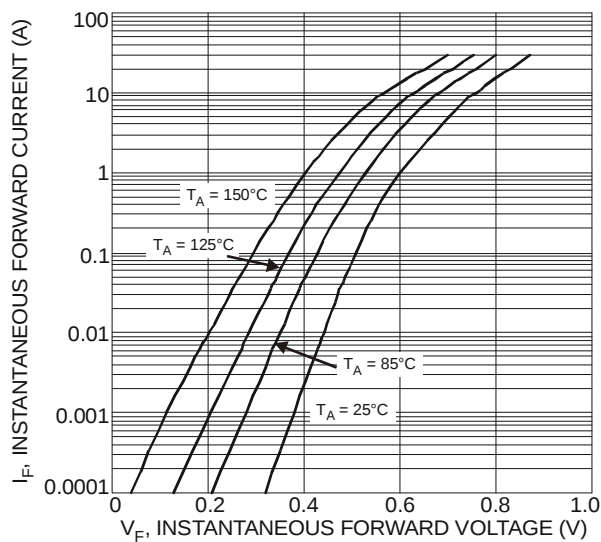
**Thermal Characteristics (Per Leg)**

| 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   |

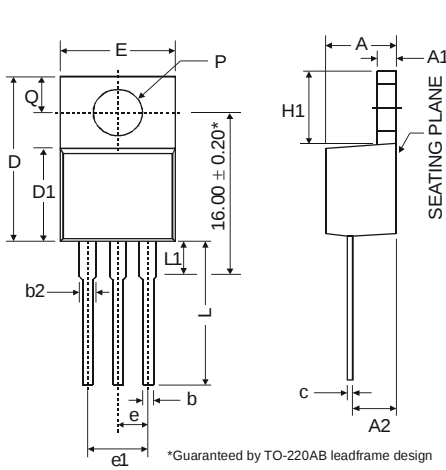
**Electrical Characteristics (Per Leg)** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic           | Symbol         | Min | Typ  | Max  | Unit | Test Condition                                 |
|--------------------------|----------------|-----|------|------|------|------------------------------------------------|
| Forward Voltage Drop     | V <sub>F</sub> | —   | —    | 0.85 | V    | I <sub>F</sub> = 15A, T <sub>J</sub> = +25°C   |
|                          |                | —   | 0.68 | 0.73 |      | I <sub>F</sub> = 15A, T <sub>J</sub> = +125°C  |
|                          |                | —   | —    | 0.96 |      | I <sub>F</sub> = 30A, T <sub>J</sub> = +25°C   |
| Leakage Current (Note 6) | I <sub>R</sub> | —   | —    | 12   | μA   | V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C  |
|                          |                | —   | —    | 3    | mA   | V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C |

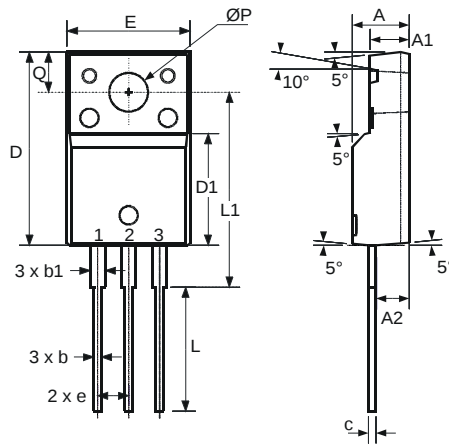
Notes: 6. Short duration pulse test used to minimize self-heating effect.



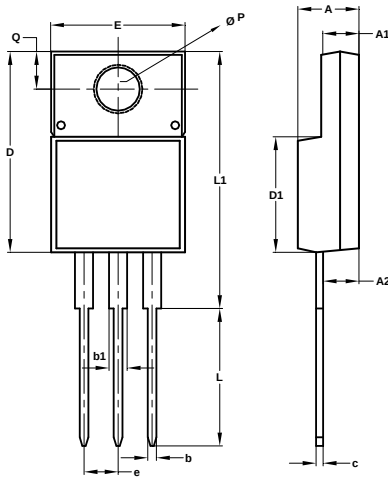
## Package Outline Dimensions



| TO-220AB             |       |      |       |
|----------------------|-------|------|-------|
| Dim                  | Min   | Typ  | Max   |
| A                    | 3.56  | -    | 4.82  |
| A1                   | 0.51  | -    | 1.39  |
| A2                   | 2.04  | -    | 2.92  |
| b                    | 0.39  | 0.81 | 1.01  |
| b1                   | 1.15  | 1.24 | 1.77  |
| c                    | 0.356 | -    | 0.61  |
| D                    | 14.22 | -    | 16.51 |
| D1                   | 8.39  | -    | 9.01  |
| e                    | 2.54  |      |       |
| e1                   | 5.08  |      |       |
| E                    | 9.66  | -    | 10.66 |
| H1                   | 5.85  | -    | 6.85  |
| L                    | 12.70 | -    | 14.73 |
| L1                   | -     | -    | 6.35  |
| P                    | 3.54  | -    | 4.08  |
| Q                    | 2.54  | -    | 3.42  |
| All Dimensions in mm |       |      |       |



| ITO-220AB            |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Typ   | Max   |
| A                    | 4.50  | 4.70  | 4.90  |
| A1                   | 3.04  | 3.24  | 3.44  |
| A2                   | 2.56  | 2.76  | 2.96  |
| b                    | 0.50  | 0.60  | 0.75  |
| b1                   | 1.10  | 1.20  | 1.35  |
| c                    | 0.50  | 0.60  | 0.70  |
| D                    | 15.67 | 15.87 | 16.07 |
| D1                   | 8.99  | 9.19  | 9.39  |
| e                    | 2.54  |       |       |
| E                    | 9.91  | 10.11 | 10.31 |
| L                    | 9.45  | 9.75  | 10.05 |
| L1                   | 15.80 | 16.00 | 16.20 |
| P                    | 2.98  | 3.18  | 3.38  |
| Q                    | 3.10  | 3.30  | 3.50  |
| All Dimensions in mm |       |       |       |



| ITO-220AB<br>(Alternate) |       |       |
|--------------------------|-------|-------|
| Dim                      | Min   | Max   |
| A                        | 4.36  | 4.77  |
| A1                       | 2.54  | 3.10  |
| A2                       | 2.54  | 2.80  |
| b                        | 0.55  | 0.75  |
| b1                       | 1.20  | 1.50  |
| c                        | 0.38  | 0.68  |
| D                        | 14.50 | 15.50 |
| D1                       | 8.38  | 8.89  |
| e                        | 2.41  | 2.67  |
| E                        | 9.72  | 10.27 |
| L                        | 9.87  | 10.67 |
| L1                       | 15.8  | 17.00 |
| P                        | 3.08  | 3.39  |
| Q                        | 2.60  | 3.00  |
| All Dimensions in mm     |       |       |

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