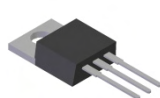


## Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

## Mechanical Data

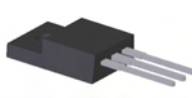
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 ③
- Weight: TO-220AB – 1.85 grams (approximate)  
ITO-220AB – 1.65 grams (approximate)



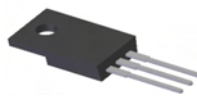
TO-220AB  
Top View



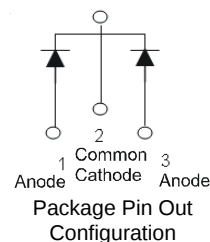
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View

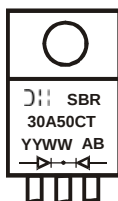


## Ordering Information (Notes 2 & 3)

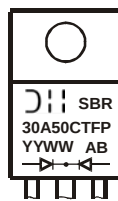
| Part Number     | Case                  | Packaging      |
|-----------------|-----------------------|----------------|
| SBR30A50CT      | TO-220AB              | 50 pieces/tube |
| SBR30A50CT-G    | TO-220AB              | 50 pieces/tube |
| SBR30A50CTFP    | ITO-220AB             | 50 pieces/tube |
| SBR30A50CTFP-G  | ITO-220AB             | 50 pieces/tube |
| SBR30A50CTFP-JT | ITO-220AB (Alternate) | 50 pieces/tube |

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes  
2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30A50CT-G.  
3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR30A50CT = Product Type Marking Code  
①②③ = Manufacturers' Code Marking  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year (ex: 06 = 2006)  
WW = Week (01 - 53)



SBR30A50CTFP = Product Type Marking Code  
①②③ = Manufacturers' Code Marking  
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> | 50       | V    |
| Working Peak Reverse Voltage                                                                     | V <sub>RWM</sub> |          |      |
| DC Blocking Voltage                                                                              | V <sub>RM</sub>  |          |      |
| Average Rectified Output Current Per Device (Per Leg) (Total)                                    | I <sub>O</sub>   | 15<br>30 | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 260      | A    |
| Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec.                          | V <sub>AC</sub>  | 2000     | V    |

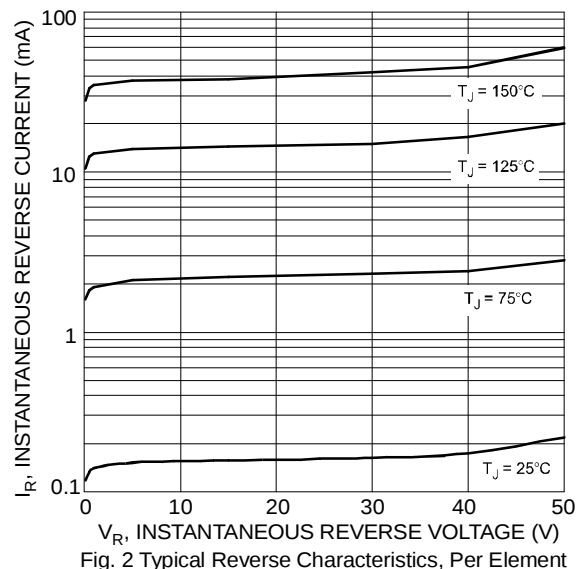
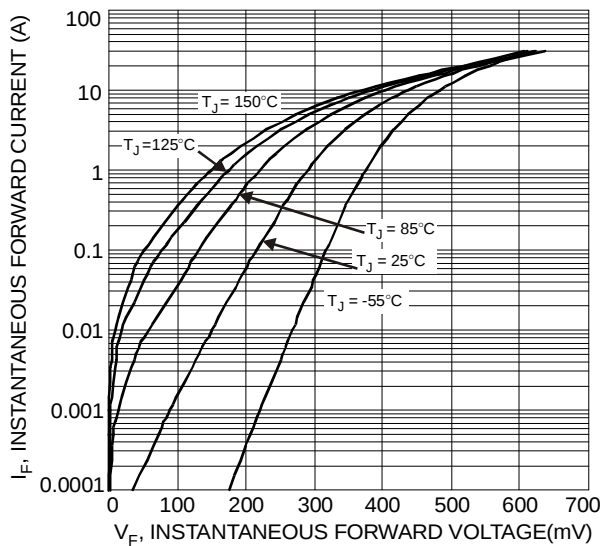
## Thermal Characteristics (Per Leg)

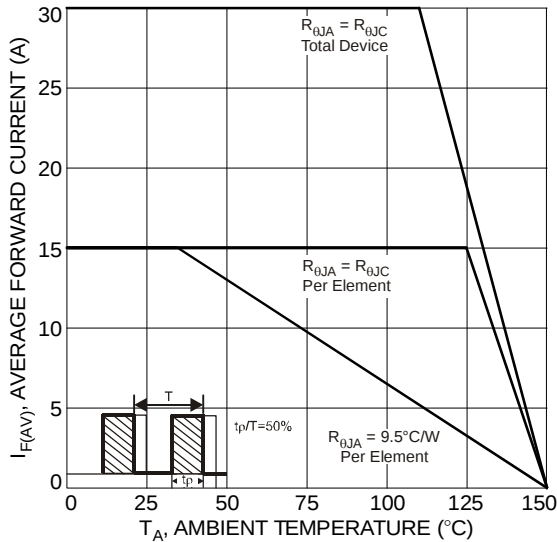
| Characteristic                                  | Symbol                               | Value       | Unit |
|-------------------------------------------------|--------------------------------------|-------------|------|
| Typical Thermal Resistance                      | R <sub>θJA</sub><br>R <sub>θJC</sub> | 9.5<br>2    | °C/W |
| Thermal Resistance Junction to Ambient (Note 4) |                                      |             |      |
| Thermal Resistance Junction to Case             |                                      |             |      |
| Operating and Storage Temperature Range         | T <sub>J</sub> , T <sub>STG</sub>    | -65 to +150 | °C   |

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

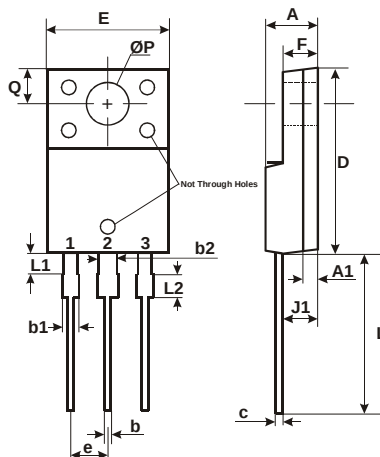
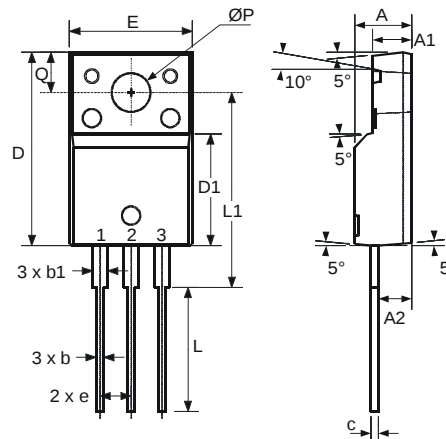
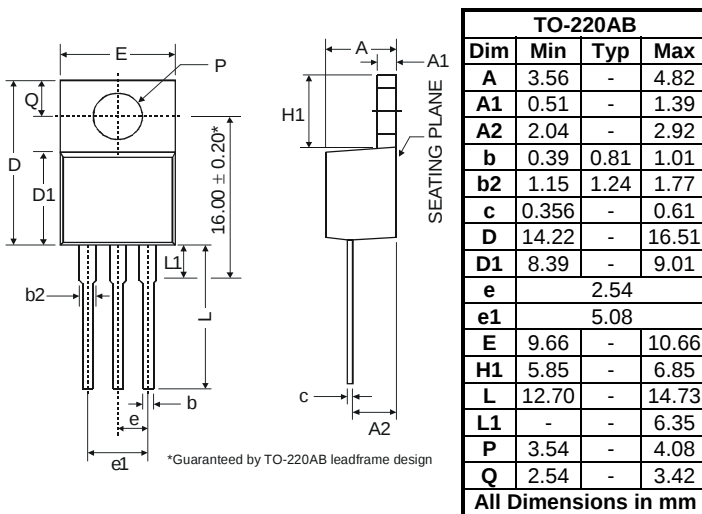
| Characteristic           | Symbol         | Min | Typ | Max          | Unit | Test Condition                                                                              |
|--------------------------|----------------|-----|-----|--------------|------|---------------------------------------------------------------------------------------------|
| Forward Voltage Drop     | V <sub>F</sub> | -   | -   | 0.55<br>0.50 | V    | I <sub>F</sub> = 15A, T <sub>J</sub> = 25°C<br>I <sub>F</sub> = 15A, T <sub>J</sub> = 125°C |
| Leakage Current (Note 5) | I <sub>R</sub> | -   | -   | 0.5<br>100   | mA   | V <sub>R</sub> = 50V, T <sub>J</sub> = 25°C<br>V <sub>R</sub> = 50V, T <sub>J</sub> = 125°C |

Notes: 4. Test with additional heatsink, (Black Aluminum, 50mm\*37mm\*15mm)  
5. Short duration pulse test used to minimize self-heating effect.





## Package Outline Dimensions



Notes: 6. For product manufactured with Date Code 0733 (week 33, 2007) and newer, please refer to ITO-220AB dimensions. For product manufactured prior to Date Code 0733, please refer to ITO-220AB ALTERNATE dimensions.

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SBR30A50

Document number: DS31136 Rev. 5 - 2

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October 2011  
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