

## Product Summary

| V <sub>RRM</sub> (V) | I <sub>O</sub> (A)        | V <sub>F</sub> Max (V)<br>@ +25°C | I <sub>R</sub> Max (mA)<br>@ +25°C |
|----------------------|---------------------------|-----------------------------------|------------------------------------|
| 100                  | 5 (Per leg)<br>10 (Total) | 0.8                               | 0.1                                |

## Description

The SBR10100CT & SBR10100CTFP provide very low V<sub>F</sub> and excellent reverse leakage stability at high temperatures.

## Applications

It is ideal for use as a rectifier, freewheel diode or blocking diode in:

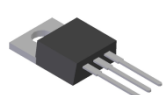
- DC-DC Converters
- AC-DC Adaptors

## Features and Benefits

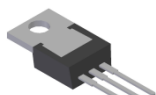
- Patented SBR<sup>®</sup> technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.
- Reduced ultra-low forward voltage drop (V<sub>F</sub>); Better efficiency and cooler operation.
- Reduced high-temperature reverse leakage; Increased reliability against thermal runaway failure in high-temperature operation.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

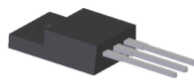
- Case: TO-220AB, ITO-220AB
- Case Material: Molded Plastic; UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208③
- Weight: TO-220AB – 1.85 grams (Approximate)  
ITO-220AB – 1.65 grams (Approximate)



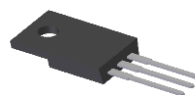
TO-220AB  
Top View



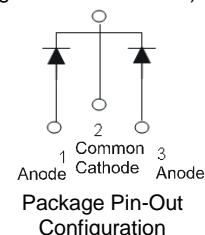
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View

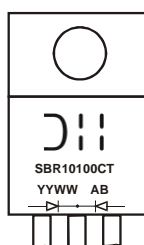


## Ordering Information (Notes 4 & 5)

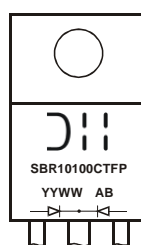
| Part Number     | Case                  | Packaging      |
|-----------------|-----------------------|----------------|
| SBR10100CT      | TO-220AB              | 50 pieces/tube |
| SBR10100CT-G    | TO-220AB              | 50 pieces/tube |
| SBR10100CTFP    | ITO-220AB             | 50 pieces/tube |
| SBR10100CTFP-G  | ITO-220AB             | 50 pieces/tube |
| SBR10100CTFP-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/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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: SBR10100CT-G.
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



SBR10100CT = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 15 = 2015)  
WW = Week (01 - 53)



SBR10100CTFP = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 15 = 2015)  
WW = Week (01 - 53)

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SBR10100

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### 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> | 100   | V    |
| Working Peak Reverse Voltage   | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage  | V <sub>RM</sub>  |       |      |
| Average Rectified Output Current (@ T <sub>C</sub> = +115°C)                                     | I <sub>O</sub>   | 10    | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 120   | 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>  | 2,000 | V    |

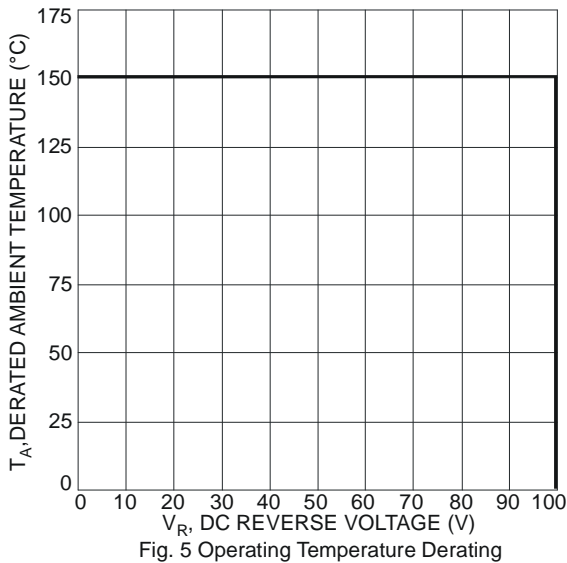
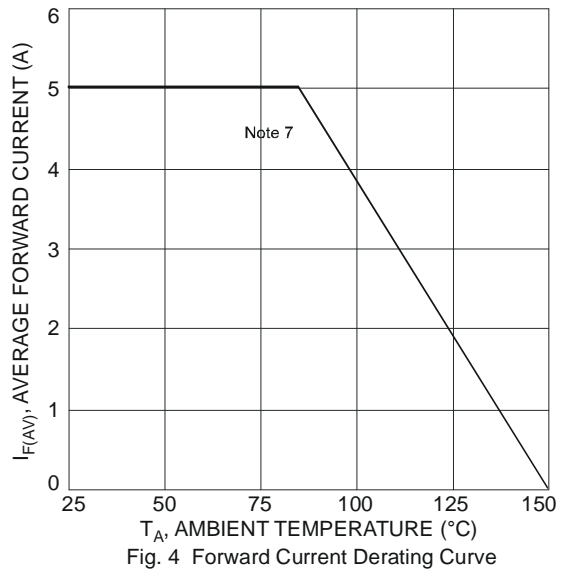
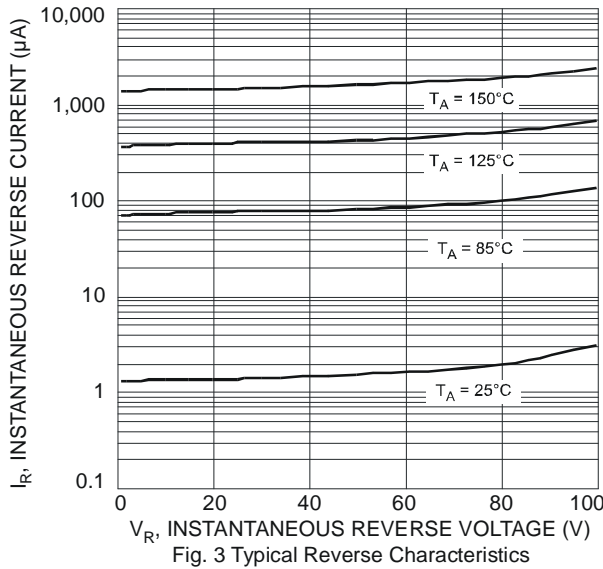
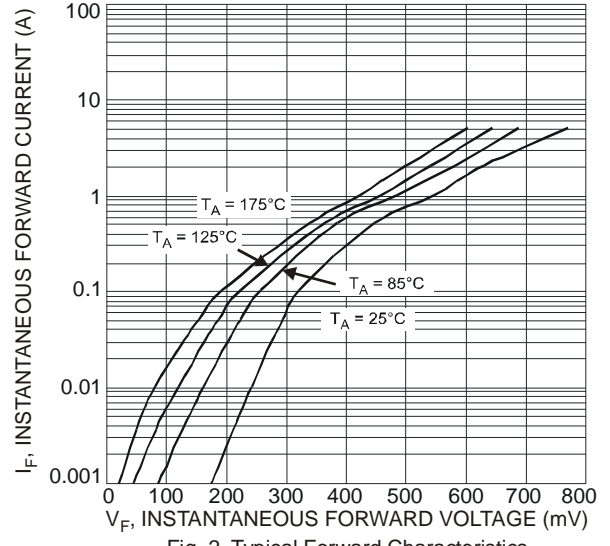
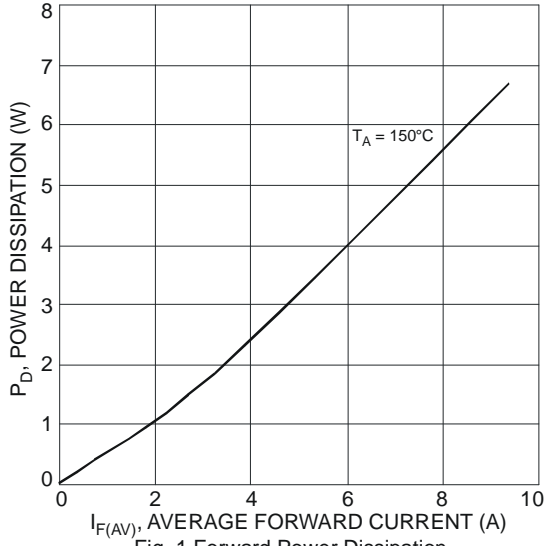
### Thermal Characteristics

| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance (per leg)<br>Package = TO-220AB (Note 7) | R <sub>θJC</sub>                  | 2           | °C/W |
| Package = ITO-220AB (Note 7)  |                                   | 4           |      |
| 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> | —   | —   | 0.80<br>0.71 | V        | I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C     |
| Leakage Current (Note 6) | I <sub>R</sub> | —   | —   | 100<br>15    | μA<br>mA | V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C<br>V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C |

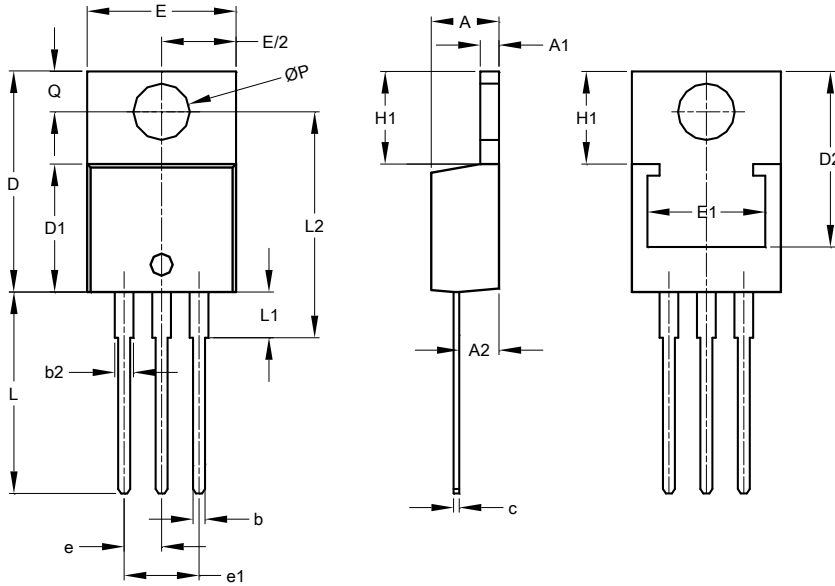
Notes: 6. Short duration pulse test used to minimize self-heating effect.  
 7. Test with Aluminum heatsink 50 x 50 x 23 mm.



**Package Outline Dimensions**

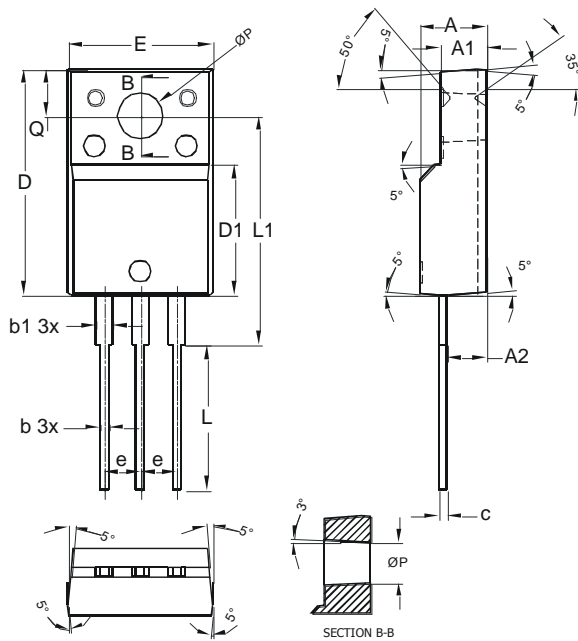
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

**TO220AB**



| TO220AB              |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | 3.56  | 4.82  | -     |
| A1                   | 0.51  | 1.39  | -     |
| A2                   | 2.04  | 2.92  | -     |
| b                    | 0.39  | 1.01  | 0.81  |
| b2                   | 1.15  | 1.77  | 1.24  |
| c                    | 0.356 | 0.61  | -     |
| D                    | 14.22 | 16.51 | -     |
| D1                   | 8.39  | 9.01  | -     |
| D2                   | 11.45 | 12.87 | -     |
| e                    | -     | -     | 2.54  |
| e1                   | -     | -     | 5.08  |
| E                    | 9.66  | 10.66 | -     |
| E1                   | 6.86  | 8.89  | -     |
| H1                   | 5.85  | 6.85  | -     |
| L                    | 12.70 | 14.73 | -     |
| L1                   | -     | 6.35  | -     |
| L2                   | 15.80 | 16.20 | 16.00 |
| P                    | 3.54  | 4.08  | -     |
| Q                    | 2.54  | 3.42  | -     |
| All Dimensions in mm |       |       |       |

**ITO220AB**



| 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 |       |       |       |

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