

### Product Summary (Per Leg)

| $V_{RRM}$ (V) | $I_o$ (A) | $V_F$ max (V) | $I_R$ max (mA) |
|---------------|-----------|---------------|----------------|
| 100           | 15        | 0.8           | 0.15           |

### Description

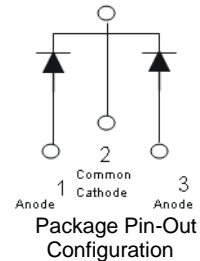
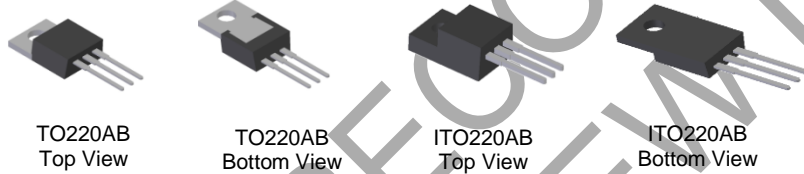
Packaged in the robust industry-standard TO220AB and ITO220AB packages, the SBRT30A100CT and SBRT30A100CTFP provide very low  $V_F$  and excellent reverse leakage stability at high temperatures.

### Features and Benefits

- Reduced ultra-low forward voltage drop ( $V_F$ ); better efficiency and cooler operation.
- Reduced high temperature reverse leakage; Increased reliability against thermal runaway failure in high temperature operation.
- Patented Super Barrier Rectifier Technology (SBR®)**
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Halogen and Antimony Free. "Green" Device (Note 3)**
- For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

### Mechanical Data

- Case: TO220AB, ITO220AB
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish; Solderable per MIL-STD-202, Method 208 (E3)

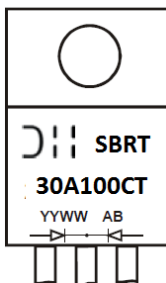


### Ordering Information (Note 4)

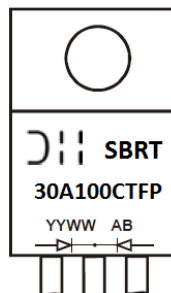
| Part Number    | Case     | Packaging      |
|----------------|----------|----------------|
| SBRT30A100CT   | TO220AB  | 50 Pieces/Tube |
| SBRT30A100CTFP | ITO220AB | 50 Pieces/Tube |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> 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 packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

### Marking Information



SBRT30A100CT = 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 to 53)



SBRT30A100CTFP = 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 to 53)

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive 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>VRWM</sub> |          |      |
| DC Blocking Voltage   | V <sub>VRM</sub>  |          |      |
| Average Rectified Output Current (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 (Per Leg) | I <sub>FSM</sub>  | 200      | A    |

**Thermal Characteristics (Per Leg)**

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Case (Note 5) | R <sub>θJC</sub>                  | TO220AB     | 1    |
|  |                                   | ITO220AB    | 3.3  |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -55 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> | —   | 0.73 | 0.80 | V    | I <sub>F</sub> = 15A, T <sub>J</sub> = +25°C   |
|                          |                | —   | —    | 0.67 |      | I <sub>F</sub> = 15A, T <sub>J</sub> = +125°C  |
| Leakage Current (Note 6) | I <sub>R</sub> | —   | —    | 0.15 | mA   | V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C  |
|                          |                | —   | —    | 30   |      | V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C |

Notes: 5. With 50mm x 50mm x 23mm Al heatsink.  
6. Short duration pulse test used to minimize self-heating effect.

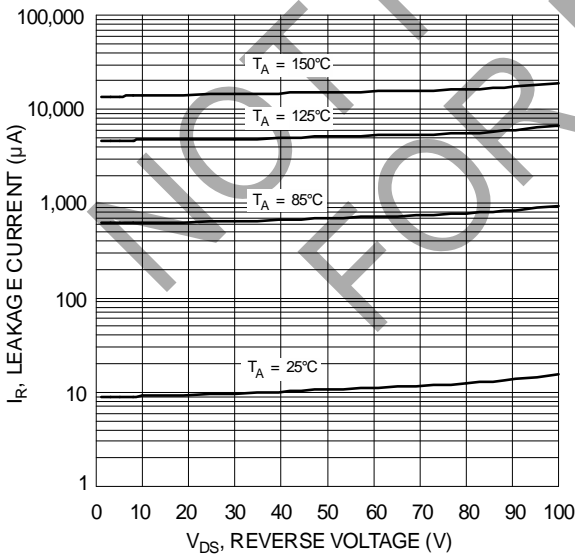


Figure 1 Typical Reverse Characteristics

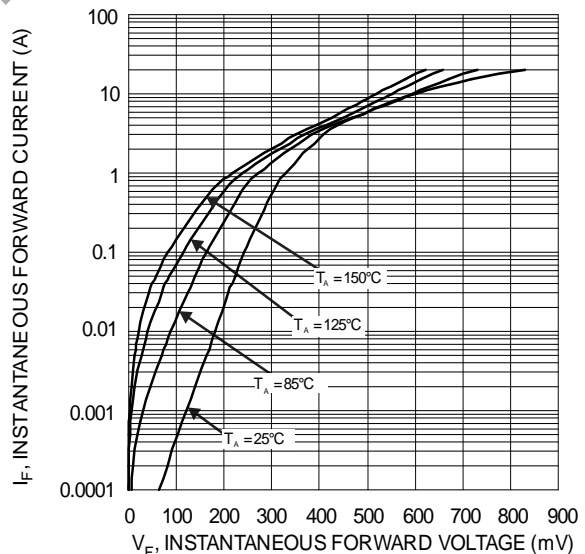
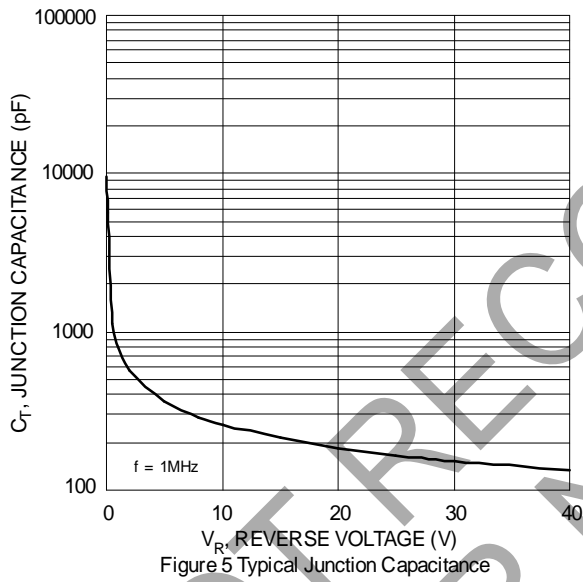
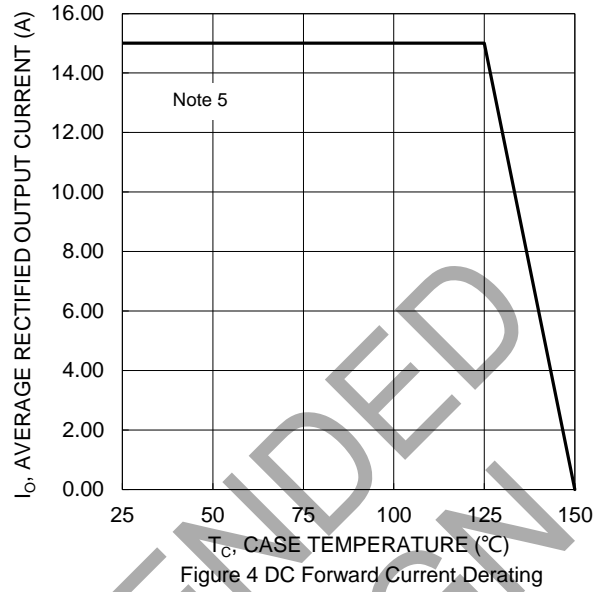
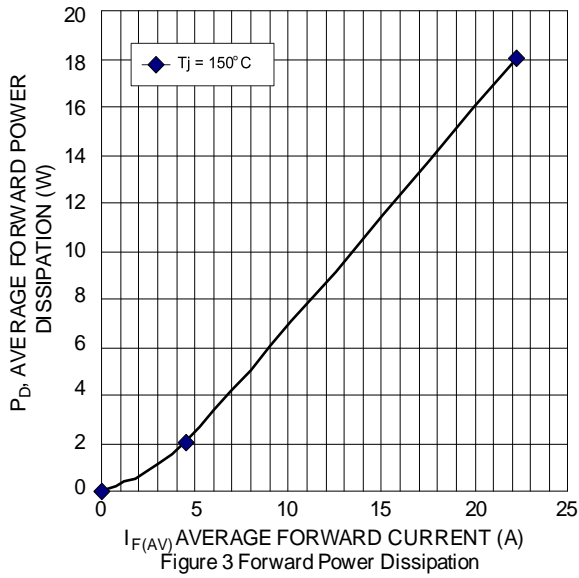


Figure 2 Typical Forward Characteristics

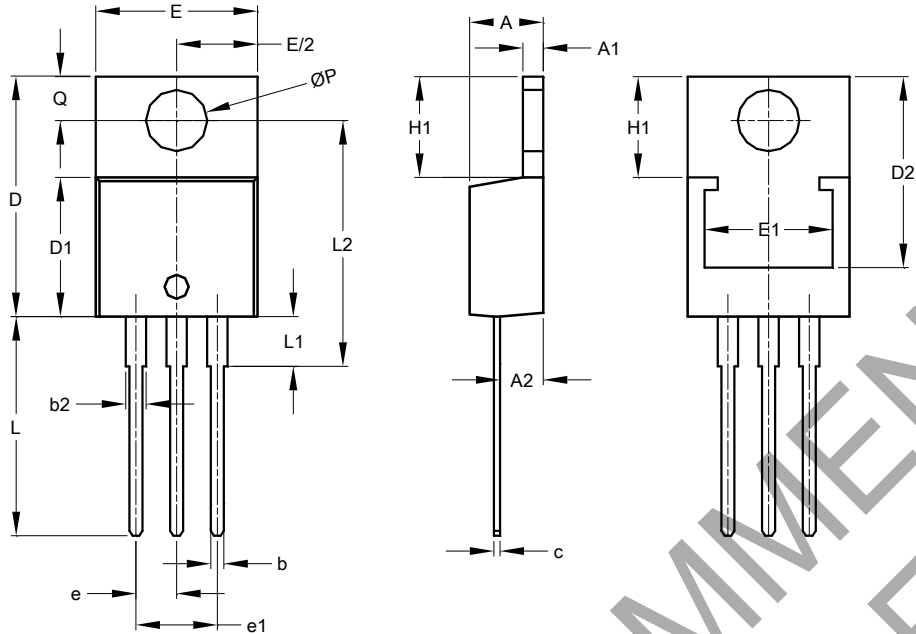


NOT RECOMMENDED FOR NEW DESIGN

**Package Outline Dimensions**

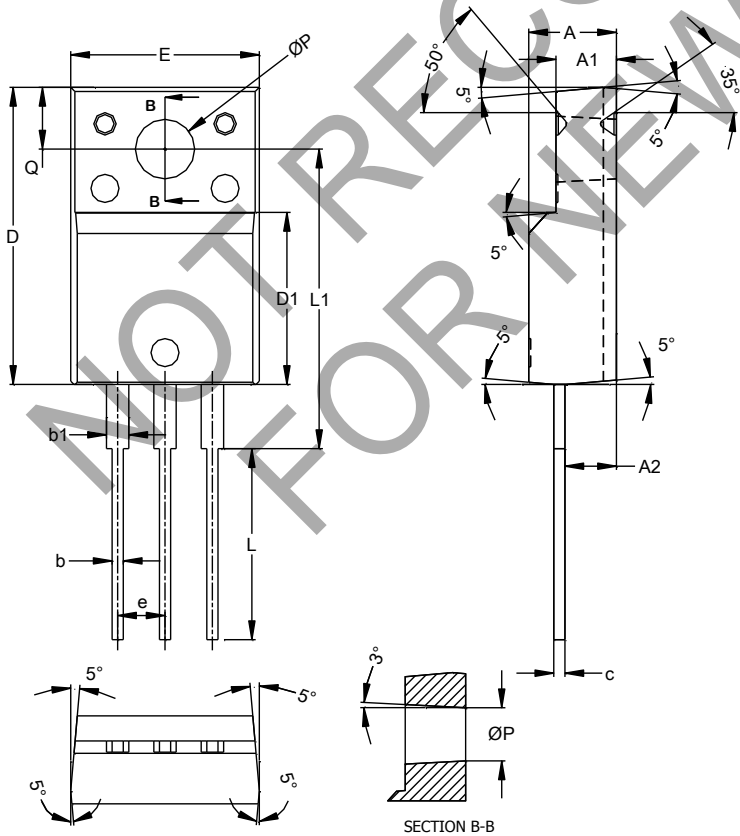
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**(1) Package Type: 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 |       |       |       |

**(2) Package Type: ITO220AB**



| ITO220AB             |       |       |       |
|----------------------|-------|-------|-------|
| Dim                  | Min   | Max   | Typ   |
| A                    | 4.50  | 4.90  | 4.70  |
| A1                   | 3.04  | 3.44  | 3.24  |
| A2                   | 2.56  | 2.96  | 2.76  |
| b                    | 0.50  | 0.75  | 0.60  |
| b1                   | 1.10  | 1.35  | 1.20  |
| c                    | 0.50  | 0.70  | 0.60  |
| D                    | 15.67 | 16.07 | 15.87 |
| D1                   | 8.99  | 9.39  | 9.19  |
| E                    | 9.91  | 10.31 | 10.11 |
| e                    | --    | --    | 2.54  |
| L                    | 9.45  | 10.05 | 9.75  |
| L1                   | 15.80 | 16.20 | 16.00 |
| P                    | 2.98  | 3.38  | 3.18  |
| Q                    | 3.10  | 3.50  | 3.30  |
| All Dimensions in mm |       |       |       |

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