

Product Summary

| V_{RRM} (V) | I_O (A) | $V_F(MAX)$ (V) @ +25°C | $I_R(MAX)$ (mA) @ +25°C |
|---------------|----------------------------|---------------------------|----------------------------|
| 100 | 10 (Per leg) 20 (Total) | 0.82 | 0.1 |

Description and Applications

The SBR20100CT & SBR20100CTFP provide very low V_F and excellent reverse leakage stability at high temperatures. They are ideal for use as rectifiers, freewheel diodes or blocking diodes in:

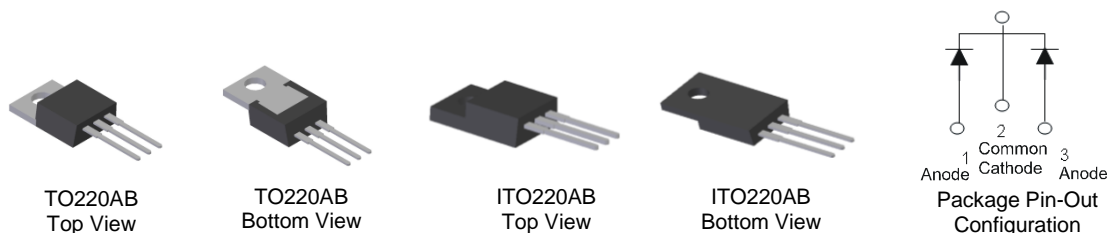
- DC-DC Converters
- AC-DC Adaptors

Features and Benefits

- Patented SBR[®] technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.
- 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.
- TO220AB, ITO220AB and ITO220AB (Type E)
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Packages: TO220AB and ITO220AB
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: TO220AB, ITO220AB and ITO220AB (Type E)
- 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: TO220AB – 1.85 grams (Approximate)
ITO220AB – 1.65 grams (Approximate)
ITO220AB (Type E) – 1.65 grams (Approximate)

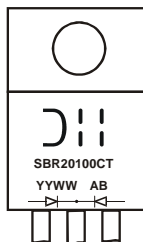


Ordering Information (Notes 4 & 5)

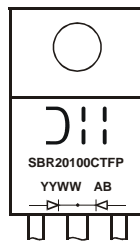
| Part Number | Case | Packaging |
|-----------------|-------------------|----------------|
| SBR20100CT | TO220AB | 50 Pieces/Tube |
| SBR20100CT-G | TO220AB | 50 Pieces/Tube |
| SBR20100CTFP | ITO220AB | 50 Pieces/Tube |
| SBR20100CTFP-G | ITO220AB | 50 Pieces/Tube |
| SBR20100CTFP-JT | ITO220AB (Type E) | 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 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: SBR20100CT-G.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



SBR20100CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 16= 2016)
 WW = Week (01 to 53)



SBR20100CTFP = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 16 = 2016)
 WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@T_A = +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 _{RRM} | 100 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current Per Device (Per Leg) (Total) | I _O | 10 20 | A |
| Non-Repetitive Avalanche Energy (T _J = +25°C, I _{AS} = 20A, L = 0.05mH, t _p = 10μs) | E _{AS} | 10 | mJ |
| Max. Avalanche Power (10μs, +25°C) | P _{ARM} | 2,900 | W |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 150 | A |
| Peak Repetitive Reverse Surge Current (2μs - 1KHz) | I _{RRM} | 2 | A |
| Isolation Voltage (ITO220AB Only) From Terminal to Heatsink t = 3 seconds | V _{AC} | 2,000 | V |

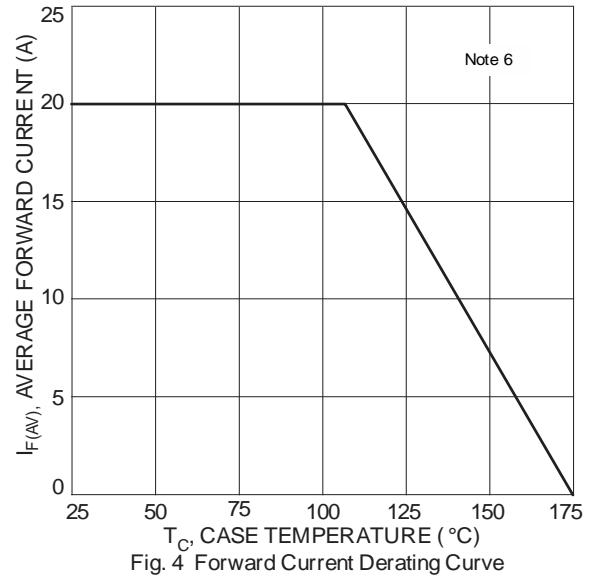
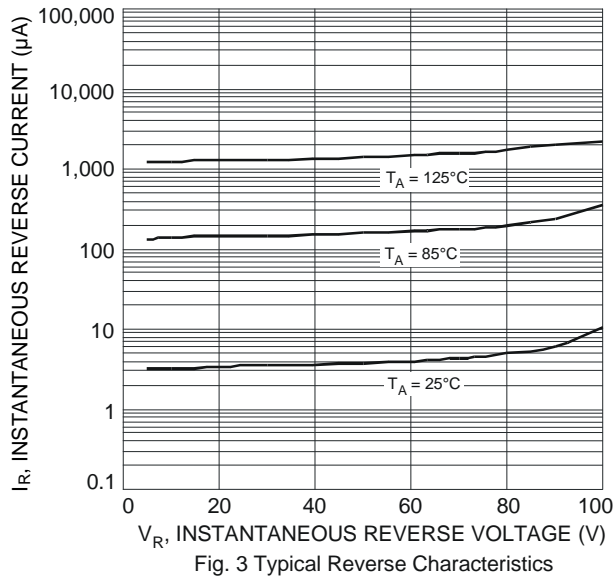
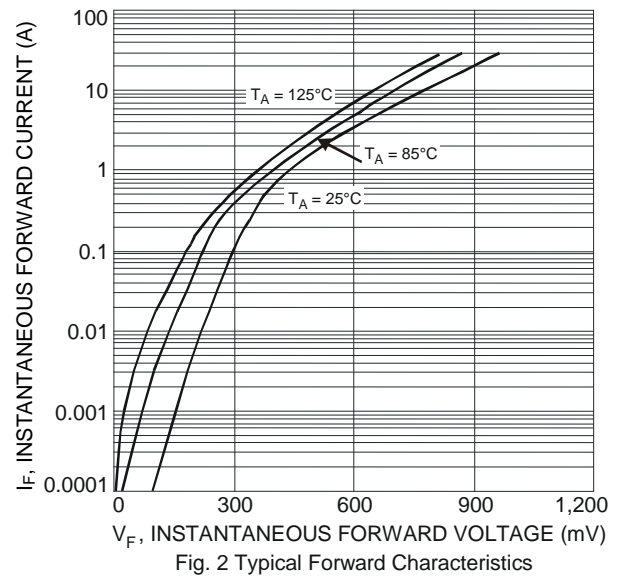
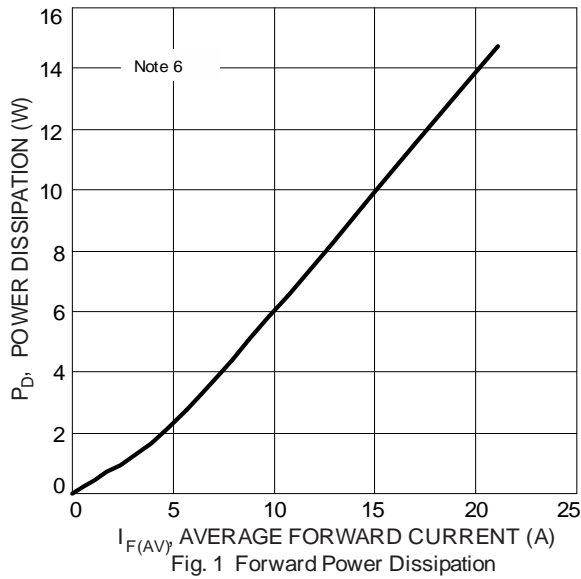
Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Package = TO220AB (Note 6) Package = ITO220AB (Note 6) | R _{θJC} | 2 4 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +175 | °C |

Electrical Characteristics (Per Leg) (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|-----------|--------------|------|---|
| Forward Voltage Drop | V _F | — | — 0.67 | 0.82 0.75 | V | I _F = 10A, T _J = +25°C I _F = 10A, T _J = +125°C |
| Leakage Current (Note 7) | I _R | — | — | 0.1 10 | mA | V _R = 100V, T _J = +25°C V _R = 100V, T _J = +125°C |

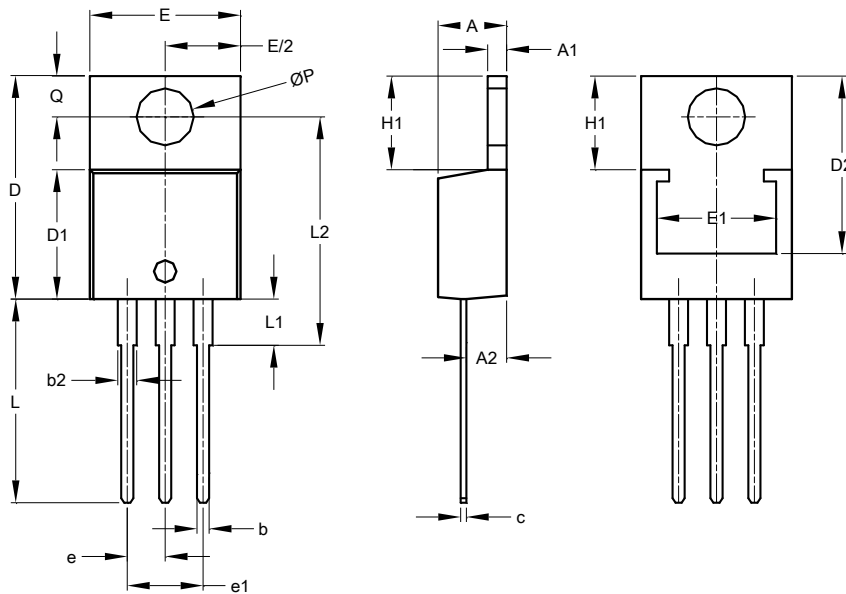
Notes: 6. Test with Aluminum heatsink 50 x 50 x 23mm.
 7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

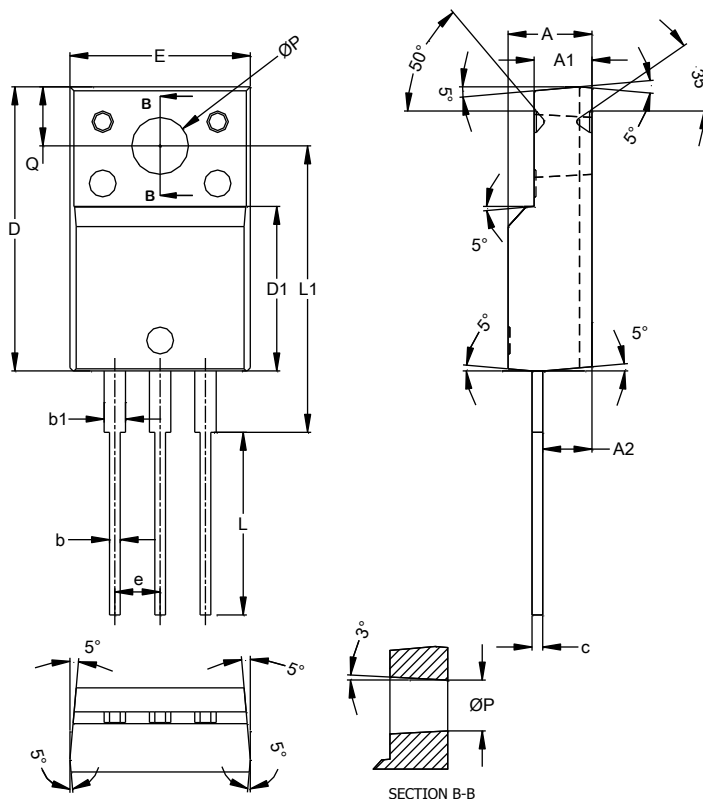
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

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 | - | 4.42 | - |
| L2 | 15.80 | 17.51 | 16.00 |
| P | 3.54 | 4.08 | - |
| Q | 2.54 | 3.42 | - |
| All Dimensions in mm | | | |

ITO220AB

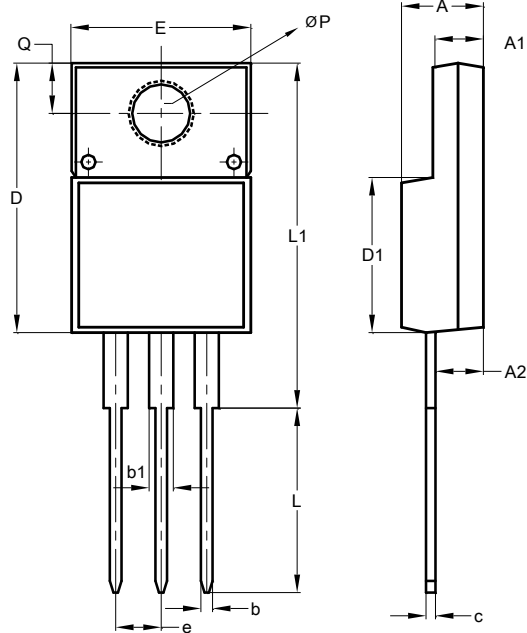


| ITO220AB | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 4.50 | 4.90 | 4.70 |
| A1 | 3.04 | 3.44 | 3.24 |
| A2 | 2.56 | 2.96 | 2.76 |
| b | 0.50 | 0.75 | 0.60 |
| b1 | 1.10 | 1.35 | 1.20 |
| c | 0.50 | 0.70 | 0.60 |
| D | 15.67 | 16.07 | 15.87 |
| D1 | 8.99 | 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 | | | |

Package Outline Dimensions (Cont.)

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

ITO220AB (Type E)



| ITO220AB (Type E) | | |
|----------------------|-------|-------|
| 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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