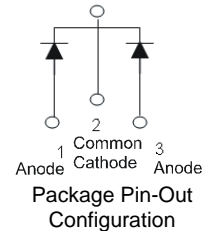


Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Also Available in Green Molding Compound (Note 4)**
 - **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 ⁽³⁾
- Weight: TO-220AB – 1.85 grams (approximate)
ITO-220AB – 1.65 grams (approximate)



Ordering Information (Notes 4 and 5)

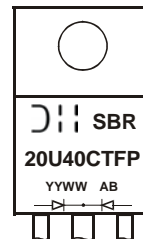
| | Part Number | Case | Packaging |
|--|-----------------|-----------------------|----------------|
| | SBR20U40CT | TO-220AB | 50 pieces/tube |
| | SBR20U40CT-G | TO-220AB | 50 pieces/tube |
| | SBR20U40CTFP | ITO-220AB | 50 pieces/tube |
| | SBR20U40CTFP-G | ITO-220AB | 50 pieces/tube |
| | SBR20U40CTFP-JT | 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> 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: SBR20U40CT-G.
 5. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR20U40CT = 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)



SBR20U40CTFP = 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_A = +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 _{RRM} | 40 | 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 Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 200 | A |
| Peak Repetitive Reverse Surge Current (2μS - 1KHz) | I _{RRM} | 3 | A |
| Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec. | V _{AC} | 2000 | V |

Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB | R _{θJC} | 2 4 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °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 | - | - | 0.47 | V | I _F = 10A, T _J = 25°C |
| | | | 0.41 | 0.44 | | I _F = 10A, T _J = 125°C |
| | | | - | 0.60 | | I _F = 20A, T _J = 25°C |
| Leakage Current (Note 6) | I _R | - | - | 0.5 | mA | V _R = 40V, T _J = 25°C |
| | | | | 100 | | V _R = 40V, T _J = 125°C |

Notes: 6. Short duration pulse test used to minimize self-heating effect.
 7. Using heatsink (by Black Aluminum, 45mm*20mm*12mm)

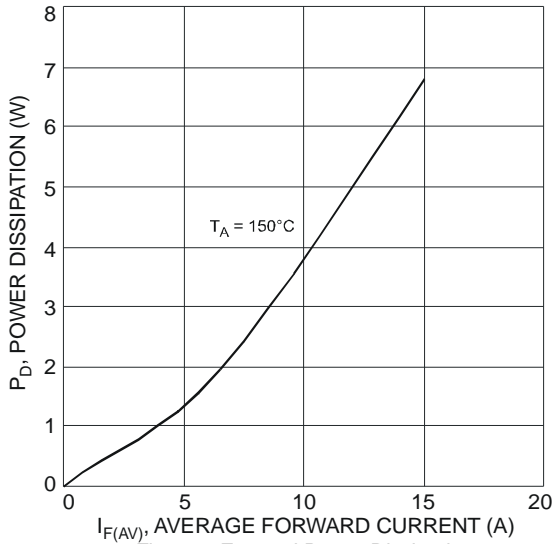


Figure 1 Forward Power Dissipation

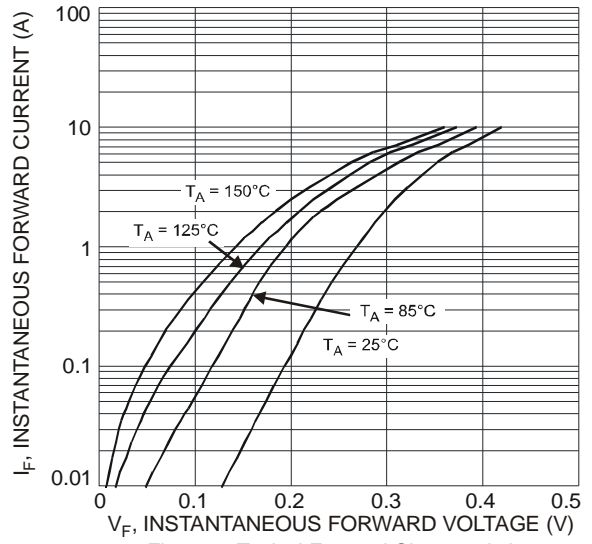


Figure 2 Typical Forward Characteristics

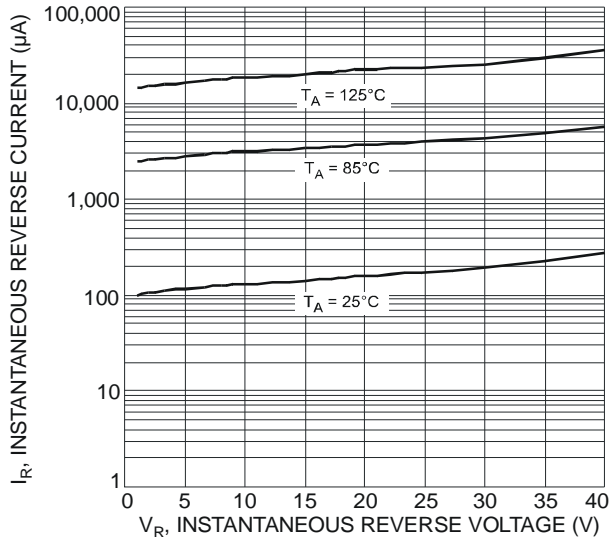


Figure 3 Typical Reverse Characteristics

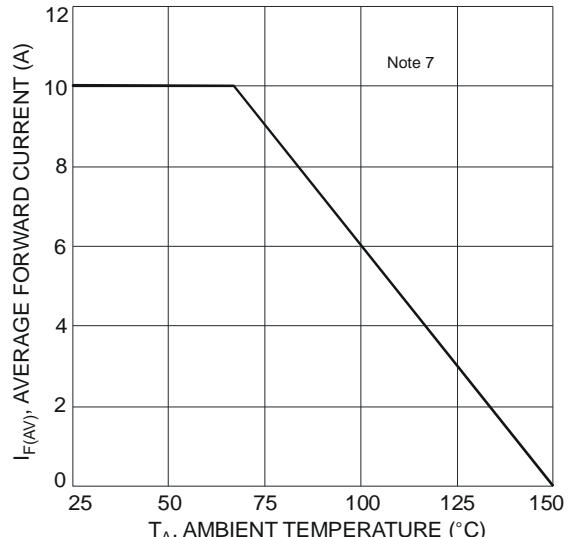


Figure 4 Forward Current Derating Curve

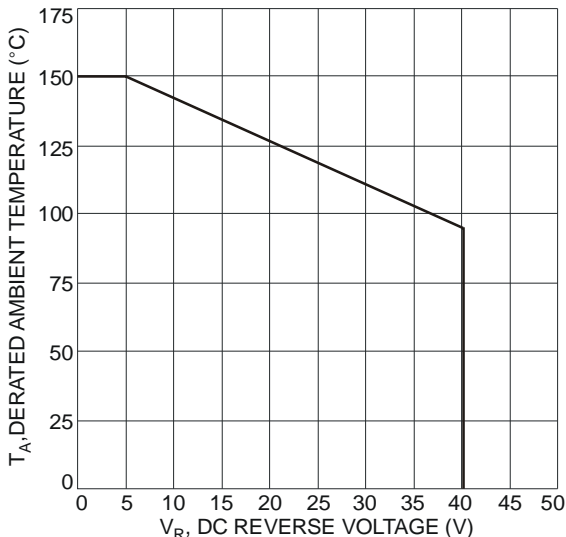
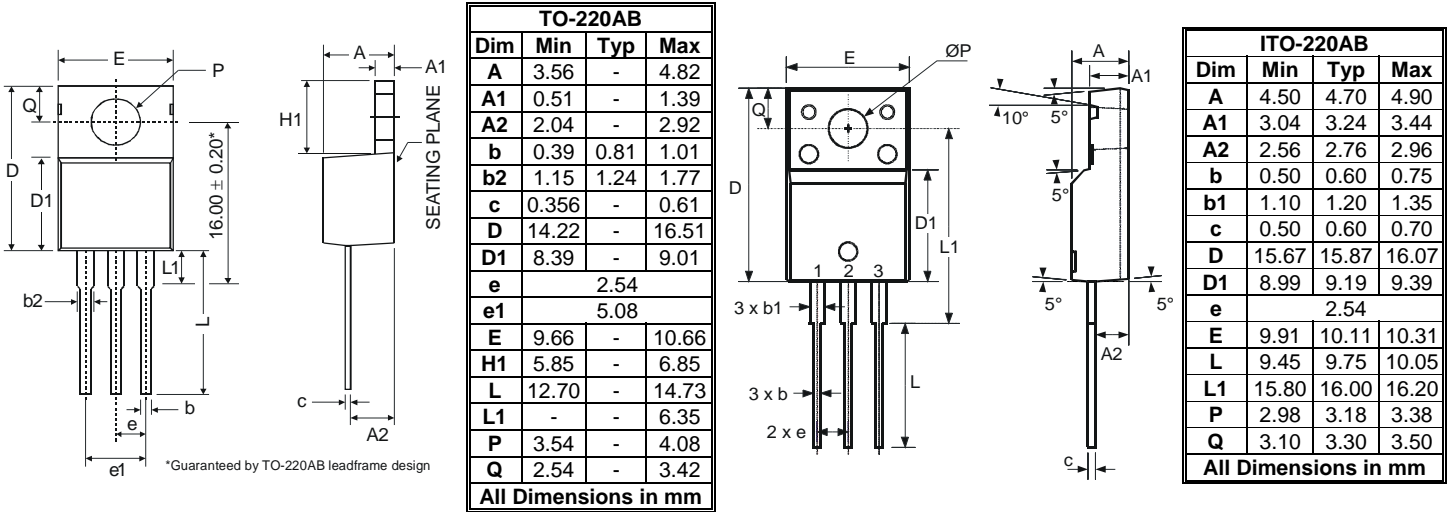


Figure 5 Operating Temperature Derating

Package Outline Dimensions

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



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