

## Features

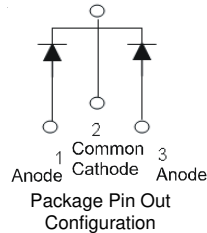
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **Also Available in Green Molding Compound (Note 5)**



TO-220AB  
Top View



TO-220AB  
Bottom View



## Mechanical Data

- Case: TO-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 <sup>(e3)</sup>
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 1.85 grams (approximate)

## 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> = 150°C  | I <sub>O</sub>   | 40    | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 235   | A    |
| Isolation Voltage (ITO-220AB Only)<br>From terminal to heatsink t = 3 sec.                       | V <sub>AC</sub>  | 2000  | V    |

## Thermal Characteristics

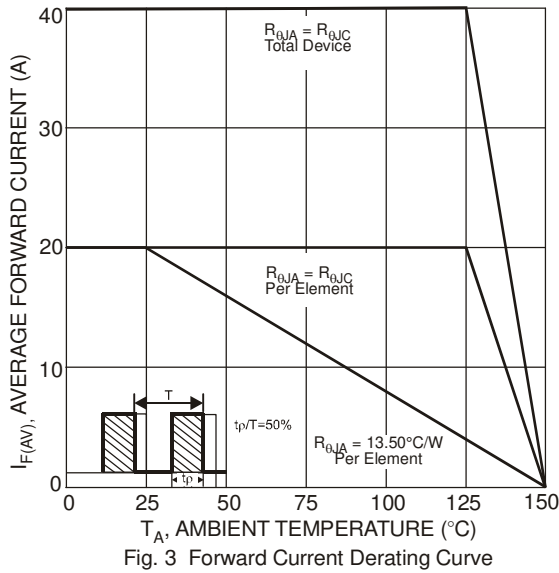
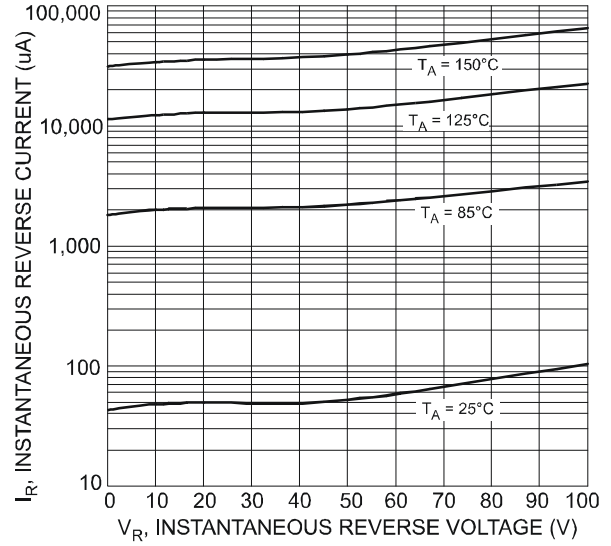
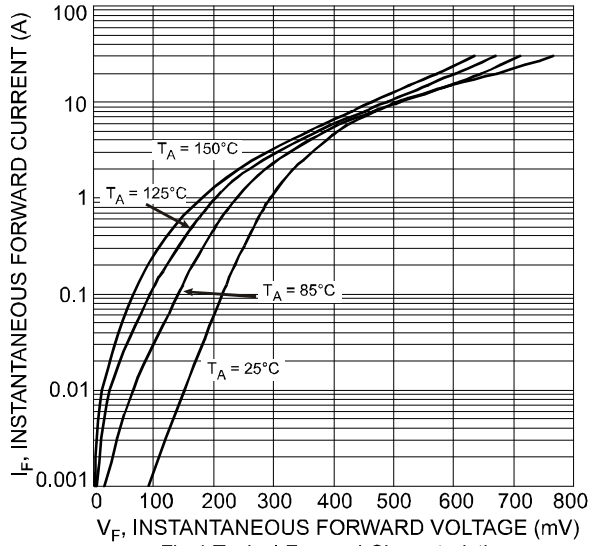
| Characteristic                               | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance (per leg)         |                                   |             | °C/W |
| Thermal Resistance Junction to Case (Note 3) | R <sub>θJC</sub>                  | 2           | °C/W |
| 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 (per leg) | V <sub>F</sub> | -   | 0.67<br>0.60 | 0.72<br>0.64 | V    | I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C<br>I <sub>F</sub> = 20A, T <sub>J</sub> = 125°C   |
| Leakage Current (Note 1)       | I <sub>R</sub> | -   | -            | 0.5<br>40    | 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:
1. Short duration pulse test used to minimize self-heating effect.
  2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.

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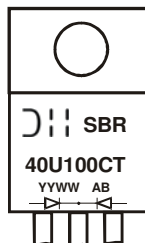


**Ordering Information** (Notes 3 and 4)

| Part Number   | Case     | Packaging      |
|---------------|----------|----------------|
| SBR40U100CT   | TO-220AB | 50 pieces/tube |
| SBR40U100CT-G | TO-220AB | 50 pieces/tube |

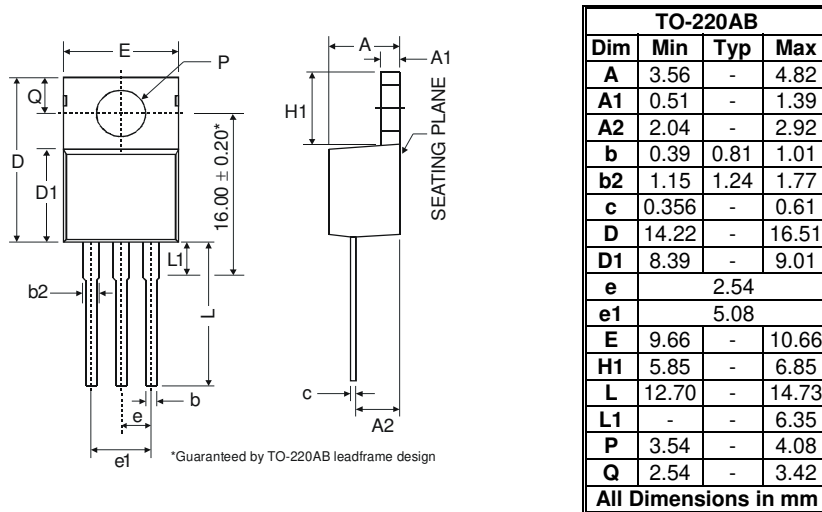
- Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 4. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR40U100CT-G

**Marking Information**



SBR40U100CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 07 = 2007)  
 WW = Week (01-52)

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**Package Outline Dimensions**

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