

**40A SBR®**  
**Super Barrier Rectifier**
**Features**

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Super Barrier Design
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**

**Mechanical Data**

- Package: TO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Marking: See Page 2
- Ordering Information: See Page 2

**Maximum Ratings @  $T_A = 25^\circ\text{C}$  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   | $V_{RRM}$       |             |                           |
| Working Peak Reverse Voltage  | $V_{RWM}$       | 150         | V                         |
| DC Blocking Voltage   | $V_{RM}$        |             |                           |
| RMS Reverse Voltage   | $V_{R(RMS)}$    | 106         | V                         |
| Average Rectified Output Current @ $T_C = 25^\circ\text{C}$   | $I_O$           | 40          | A                         |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$       | 300         | A                         |
| Peak Repetitive Reverse Surge Current (2uS-1Khz)  | $I_{RRM}$       | 3           | A                         |
| Maximum Thermal Resistance (per leg)  | $R_{\theta JC}$ | 2           | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$  | -65 to +175 | $^\circ\text{C}$          |

**Electrical Characteristics @  $T_A = 25^\circ\text{C}$  unless otherwise specified**

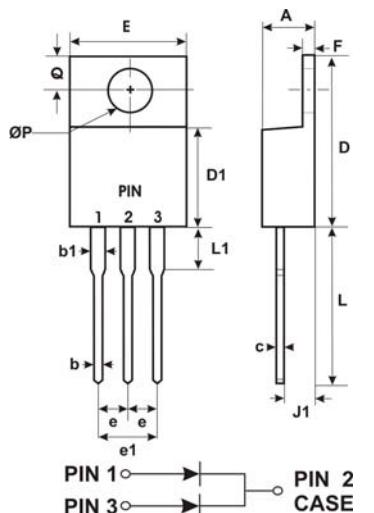
| Characteristic                     | Symbol      | Min | Typ  | Max          | Unit | Test Condition  |
|------------------------------------|-------------|-----|------|--------------|------|---|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | 150 | -    | -            | V    | $I_R = 0.5 \text{ mA}$  |
| Forward Voltage Drop               | $V_F$       | -   | 0.73 | 0.80<br>0.76 | V    | $I_F = 20\text{A}, T_J = 25^\circ\text{C}$<br>$I_F = 20\text{A}, T_J = 125^\circ\text{C}$   |
| Leakage Current (Note 1)           | $I_R$       | -   | -    | 0.5<br>25    | mA   | $V_R = 150\text{V}, T_J = 25^\circ\text{C}$<br>$V_R = 150\text{V}, T_J = 125^\circ\text{C}$ |

## Notes:

1. Short duration pulse test used to minimize self-heating effect.
2. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7*.

## Package Outline Drawing

**TO-220AB**



| TO-220AB |          |       |
|----------|----------|-------|
| DIM.     | MIN.     | MAX.  |
| A        | 4.47     | 4.67  |
| b        | 0.71     | 0.91  |
| b1       | 1.17     | 1.37  |
| c        | 0.31     | 0.53  |
| D        | 14.65    | 15.35 |
| D1       | 8.50     | 8.90  |
| E        | 10.01    | 10.31 |
| e        | 2.54 typ |       |
| e1       | 4.98     | 5.18  |
| F        | 1.17     | 1.37  |
| J1       | 2.52     | 2.82  |
| L        | 13.40    | 13.80 |
| L1       | 3.56     | 3.96  |
| ØP       | 3.735    | 3.935 |
| Q        | 2.59     | 2.89  |

All Dimensions in Millimeters

## Marking, Polarity, Weight & Ordering Information

|             | Case Style | Polarity  | Marking | Weight |
|-------------|------------|---|---------|--------|
| SBR40U150CT | TO-220AB   | <p>Case</p> <p>Anode 1<br/>Common Cathode 2<br/>Anode 3</p> |         | 2.1g   |

| Ordering Information          | Date Code   | Other Marking Information             |
|-------------------------------|---|---------------------------------------|
| SBR40U150CT<br>50 pieces/tube | YY = Last two digits of year, ex = 06 = 2006<br>WW = Week (01-52) | A = Foundry Code<br>B = Assembly Code |

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