

40A SBR[®] Super Barrier Rectifier

Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- Molded Plastic TO-220AB package
- **Lead Free Finish, RoHS Compliant (Note 2)**

Mechanical Data

- 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 3
- Ordering Information: See Page 3

Maximum Ratings @ 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 Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _{RM} | 100 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 71 | V |
| Average Rectified Output Current @ T _C = 150°C | I _O | 40 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 235 | A |
| Maximum Thermal Resistance (per leg) Thermal Resistance Junction to Case (Note 3) Thermal Resistance, Junction to Ambient (Note 3) | R _{θJC} R _{θJA} | 5 15 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|--------------|--------------|------|---|
| Reverse Breakdown Voltage (Note 1) | V _{(BR)R} | 100 | - | - | V | I _R = 1 mA |
| Forward Voltage Drop (per leg) | V _F | - | 0.67 0.60 | 0.72 0.64 | V | I _F = 20A, T _j = 25°C I _F = 20A, T _j = 125°C |
| Leakage Current (Note 1) | I _R | - | - | 0.5 40 | mA | V _R = 100V, T _j = 25 °C V _R = 100V, T _j = 125 °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*.
3. Using heatsink (by Black Aluminum, 45mm x 20mm x 12mm)

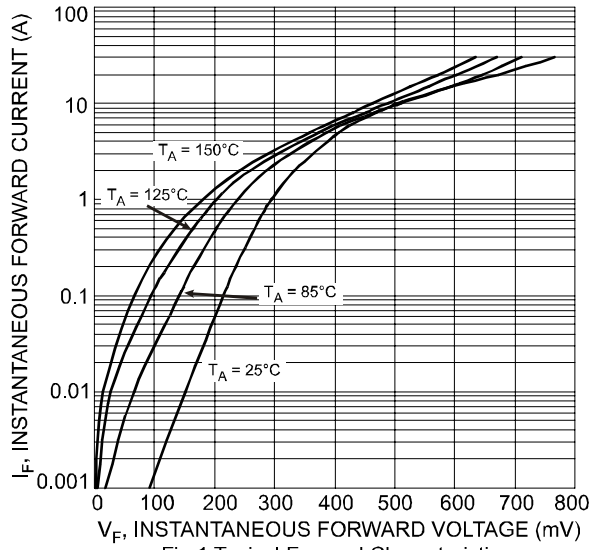


Fig. 1 Typical Forward Characteristics

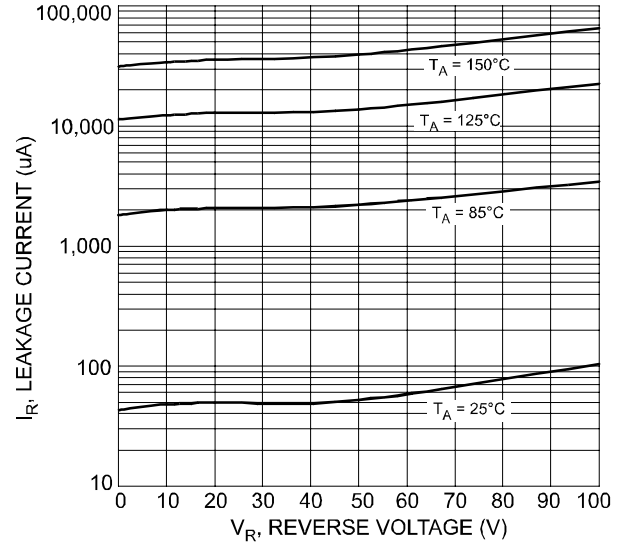


Fig. 2 Typical Reverse Characteristics

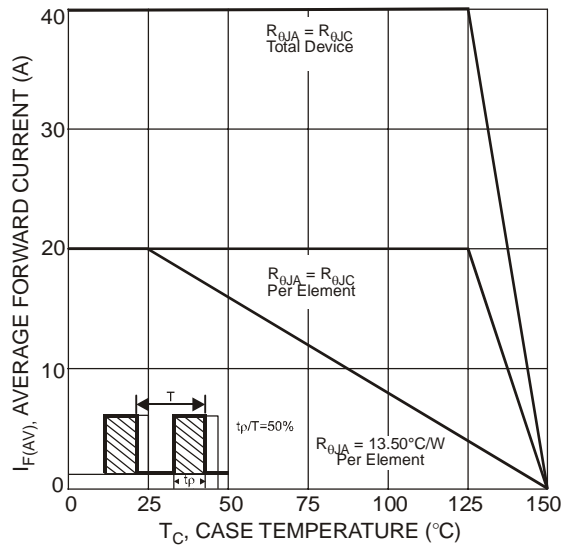
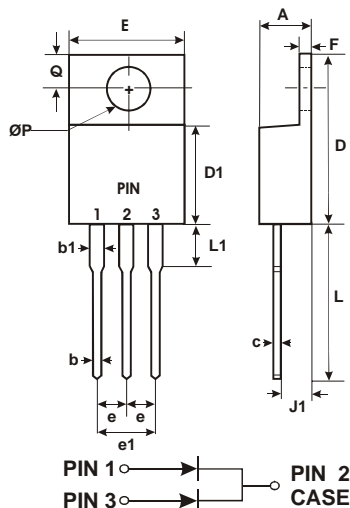


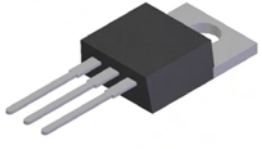
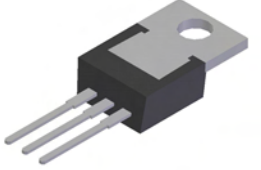
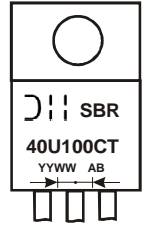
Fig. 3 Forward Current Derating Curve

Package Outline Drawing



| 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

| SBR40U100CT | Case Style - Top | Case Style - Bottom | Marking | Weight |
|-------------|---|---|--|--------|
| |  |  |  | 2.1g |

| Ordering Information | Date Code | Other Marking Information |
|-------------------------------|---|---------------------------------------|
| SBR40U100CT 50 pieces/tube | YY = Last two digits of year, ex = 07 = 2007 WW = Week (01-52) | A = Foundry Code B = Assembly Code |

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