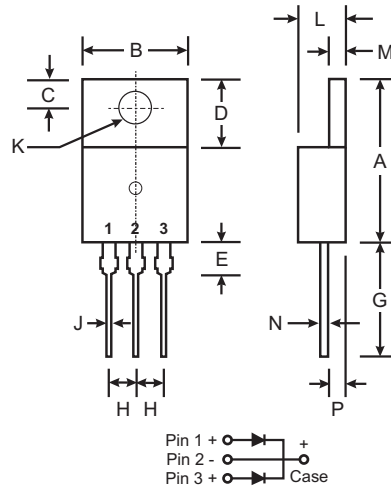


### Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 3)**

### Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: As Marked on Body
- Terminals: Finish – Bright Tin. Solderable per MIL-STD-202, Method 208
- Marking: Type Number
- Weight: 2.24 grams (approx.)



| TO-220AB             |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 14.48 | 15.75 |
| B                    | 10.00 | 10.40 |
| C                    | 2.54  | 3.43  |
| D                    | 5.90  | 6.40  |
| E                    | 2.80  | 3.93  |
| G                    | 12.70 | 14.27 |
| H                    | 2.40  | 2.70  |
| J                    | 0.69  | 0.93  |
| K                    | 3.54  | 3.78  |
| L                    | 4.07  | 4.82  |
| M                    | 1.15  | 1.39  |
| N                    | 0.30  | 0.50  |
| P                    | 2.04  | 2.79  |
| All Dimensions in mm |       |       |

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic                                                                                                     | Symbol                                                 | SBL 1030CT  | SBL 1035CT | SBL 1040CT | SBL 1045CT | SBL 1050CT | SBL 1060CT | Unit |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|------------|------------|------------|------------|------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                             | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 30          | 35         | 40         | 45         | 50         | 60         | V    |
| RMS Reverse Voltage                                                                                                | V <sub>R(RMS)</sub>                                    | 21          | 24.5       | 28         | 31.5       | 35         | 42         | V    |
| Average Rectified Output Current @ T <sub>C</sub> = 95°C (Note 1)                                                  | I <sub>O</sub>                                         | 10          |            |            |            |            |            | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                                       | 175         |            |            |            |            |            | A    |
| Forward Voltage Drop @ I <sub>F</sub> = 5.0A, T <sub>C</sub> = 25°C                                                | V <sub>FM</sub>                                        | 0.55        |            |            |            | 0.70       |            | V    |
| Peak Reverse Current @ T <sub>C</sub> = 25°C<br>at Rated DC Blocking Voltage @ T <sub>C</sub> = 125°C              | I <sub>RM</sub>                                        |             |            |            |            | 0.5<br>50  |            | mA   |
| Typical Junction Capacitance (Note 2)                                                                              | C <sub>j</sub>                                         | 450         |            |            |            |            |            | pF   |
| Typical Thermal Resistance Junction to Case (Note 1)                                                               | R <sub>θJC</sub>                                       | 5.5         |            |            |            |            |            | °C/W |
| Operating and Storage Temperature Range                                                                            | T <sub>j</sub> , T <sub>STG</sub>                      | -65 to +150 |            |            |            |            |            | °C   |

- Notes:
1. Thermal resistance junction to case mounted on heatsink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

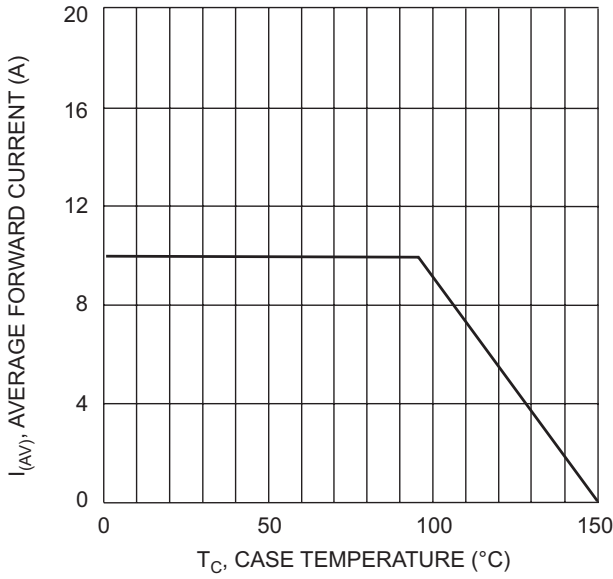


Fig. 1 Forward Current Derating Curve

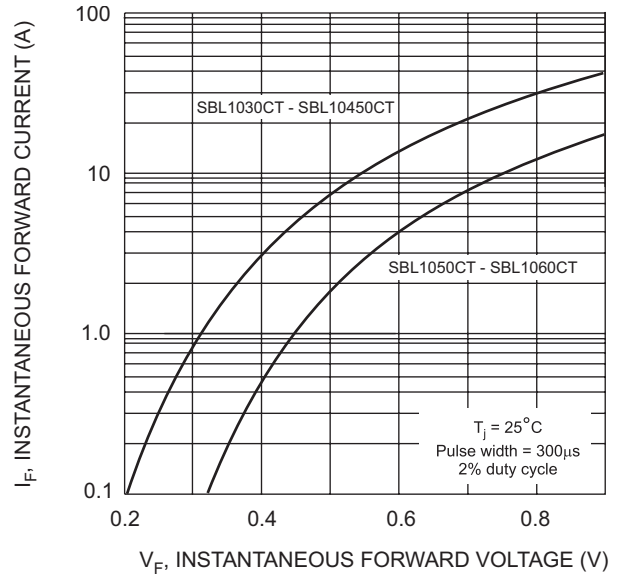


Fig. 2 Typical Forward Characteristics per Element

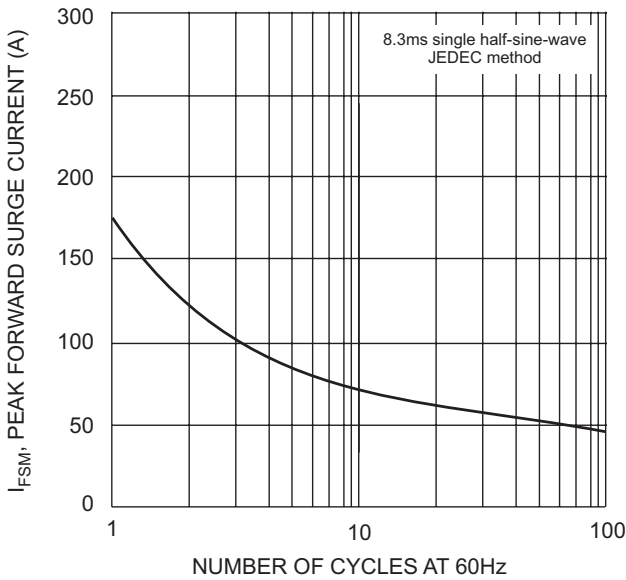


Fig. 3 Max Non-Repetitive Surge Current

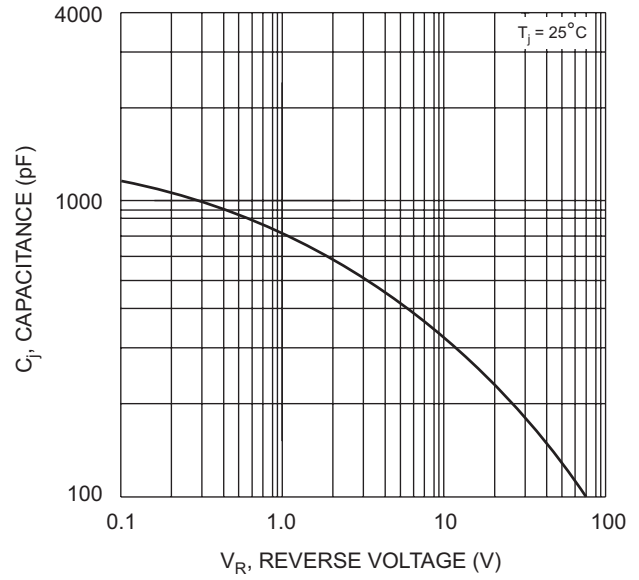


Fig. 4 Typical Junction Capacitance per Element

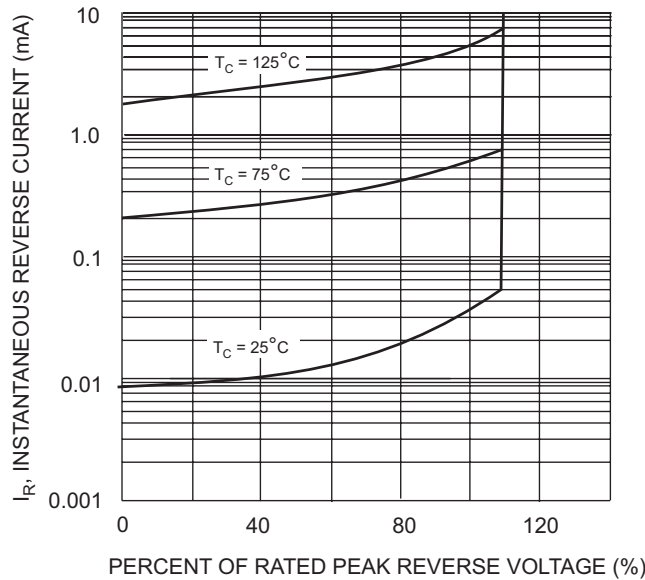


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 4)

| <b>Device</b> | <b>Packaging</b> | <b>Shipping</b> |
|---------------|------------------|-----------------|
| SBL10xxCT*    | TO-220AB         | 50/Tube         |

\* xx = Device type, e.g. SBL1045CT

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.