



SBL830 - SBL860

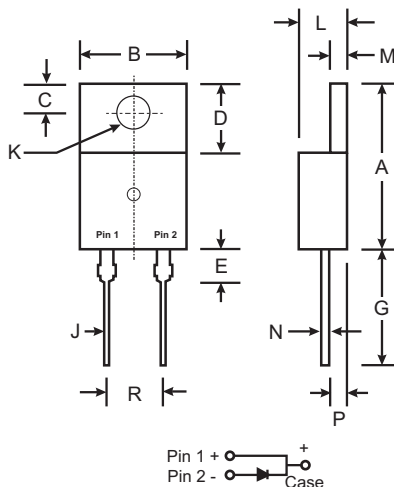
8.0A SCHOTTKY BARRIER RECTIFIER

Features

- Schottky Barrier Chip
- Guard Ring for Transient Protection
- Low Power Loss, High Efficiency
- High Current Capability, Low V_F
- High Surge Capability
- 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-220AC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: See Diagram
- Terminals: Finish – Bright Tin. Solderable per MIL-STD-202, Method 208
- Marking: Type Number
- Weight: 2.3 grams (approx.)



| TO-220AC | | |
|----------------------|-------|-------|
| 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 |
| 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 |
| R | 4.83 | 5.33 |
| All Dimensions in mm | | |

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

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

| Characteristic | Symbol | SBL 830 | SBL 835 | SBL 840 | SBL 845 | SBL 850 | SBL 860 | Unit |
|---|-----------------|---|---------|---------|---------|-----------------------------|---------|---------------------------|
| Peak Repetitive Reverse Voltage | V_{RRM} | | | | | | | |
| Working Peak Reverse Voltage | V_{RWM} | 30 | 35 | 40 | 45 | 50 | 60 | V |
| DC Blocking Voltage | V_R | | | | | | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 24.5 | 28 | 31.5 | 35 | 42 | V |
| Average Rectified Output Current (Note 1) | I_O | 8 | | | | | | A |
| | | @ $T_C = 95^\circ\text{C}$ | | | | | | |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 200 | | | | | | A |
| Forward Voltage | V_{FM} | 0.55 | | | | 0.70 | | V |
| | | @ $I_F = 8\text{A}, T_C = 25^\circ\text{C}$ | | | | | | |
| Peak Reverse Current | I_{RM} | | | | | 0.5 | | mA |
| | | | | | | @ $T_C = 100^\circ\text{C}$ | | |
| Typical Junction Capacitance (Note 2) | C_j | 700 | | | | | | pF |
| Typical Thermal Resistance Junction to Case (Note 1) | $R_{\theta JC}$ | 6.9 | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -65 to +150 | | | | | | $^\circ\text{C}$ |

- 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*.

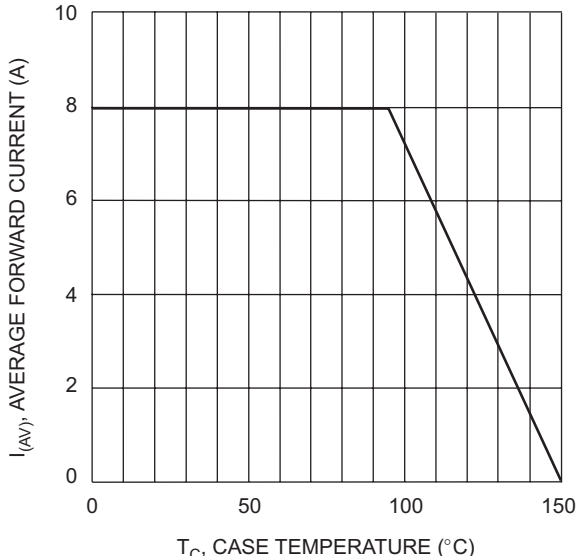


Fig. 1 Fwd Current Derating Curve

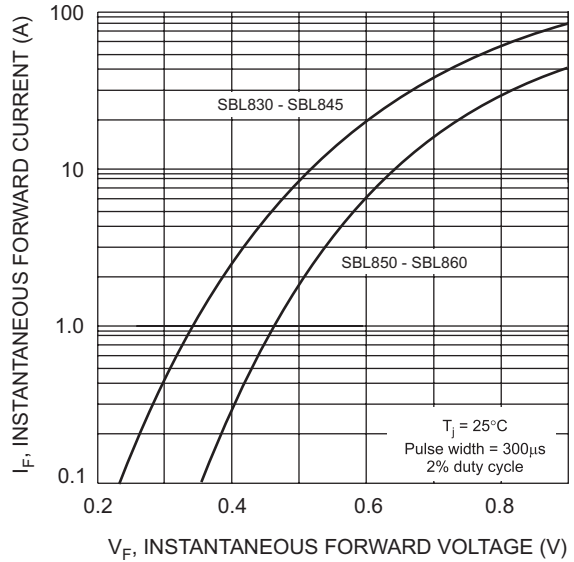


Fig. 2 Typical Forward Characteristics

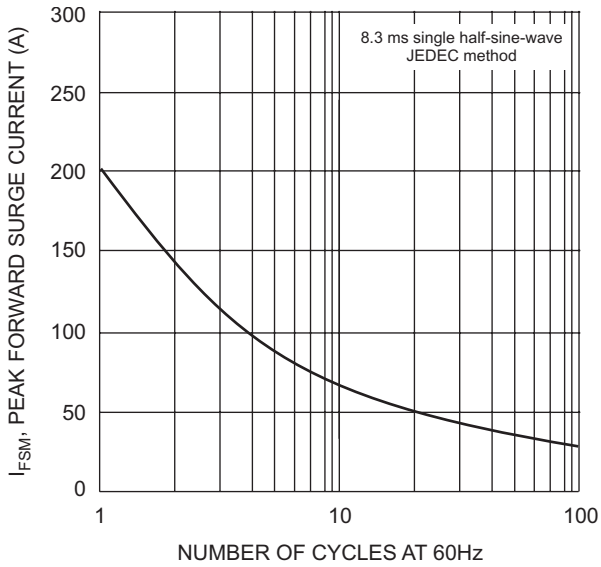


Fig. 3 Max Non-Repetitive Surge Current

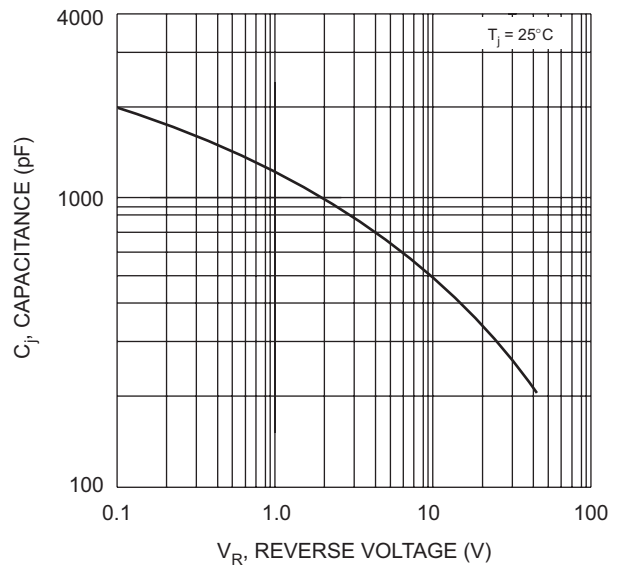


Fig. 4 Typical Junction Capacitance

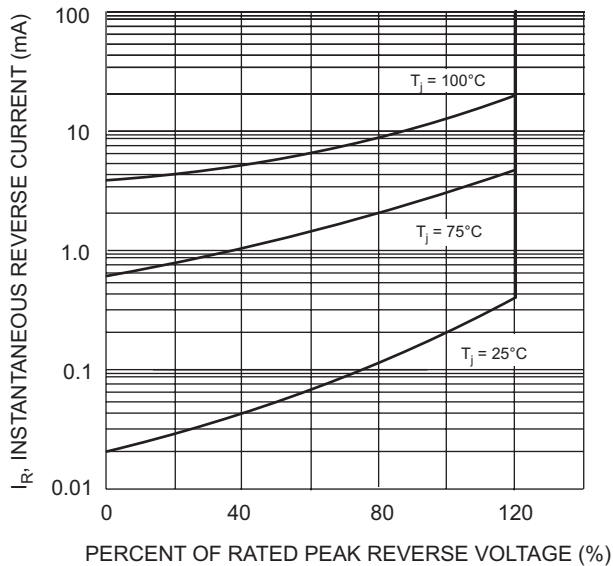


Fig. 5 Typical Reverse Characteristics

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|---------------|------------------|-----------------|
| SBL8xx* | TO-220AC | 50/Tube |

* xx = Device type, e.g. SBL845

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