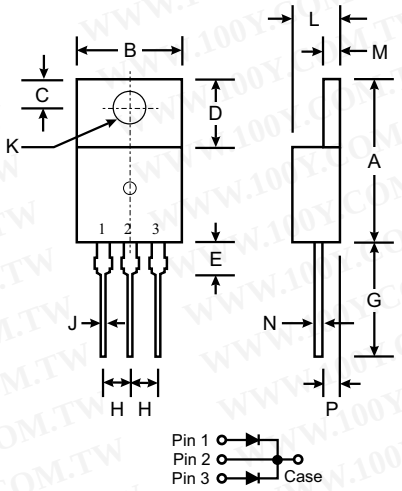
TRANSYS ELECTRONICS LIMITED

# SBL1030CT - SBL1060CT

## 10A SCHOTTKY BARRIER RECTIFIER

## 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
- Plastic Material: UL Flammability Classification Rating 94V-0




| TO-220AB | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 14.22 | 15.88 |
| **B** | 9.65 | 10.67 |
| **C** | 2.54 | 3.43 |
| **D** | 5.84 | 6.86 |
| **E** | □ | 6.35 |
| **G** | 12.70 | 14.73 |
| **H** | 2.29 | 2.79 |
| **J** | 0.51 | 1.14 |
| **K** | 3.53 □ | 4.09 □ |
| **L** | 3.56 | 4.83 |
| **M** | 1.14 | 1.40 |
| **N** | 0.30 | 0.64 |
| **P** | 2.03 | 2.92 |
| **All Dimensions in mm** | | |

## Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (approx.)
- Mounting Position: Any

## Maximum Ratings and Electrical Characteristics

@ $T_A$ = 25 □C unless otherwise specified

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

| Characteristic | Symbol | 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 | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 30 | 35 | 40 | 45 | 50 | 60 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | 24.5 | 28 | 31.5 | 35 | 42 | V |
| Average Rectified Output Current @ $T_C$ = 95 □C (Note 1) | $I_O$ | 10 | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 175 | | | | | | A |
| Forward Voltage Drop @ $I_F$ = 5.0A, $T_C$ = 25 □C | $V_{FM}$ | 0.55 | | | | 0.70 | | V |
| Peak Reverse Current @ $T_C$ = 25 □C<br>at Rated DC Blocking Voltage @ $T_C$ = 125 □C | $I_{RM}$ | 0.5<br>50 | | | | | | mA |
| Typical Junction Capacitance (Note 2) | $C_j$ | 450 | | | | | | pF |
| Typical Thermal Resistance Junction to Case (Note 1) | $R_{\square Jc}$ | 5.5 | | | | | | °C/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -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.

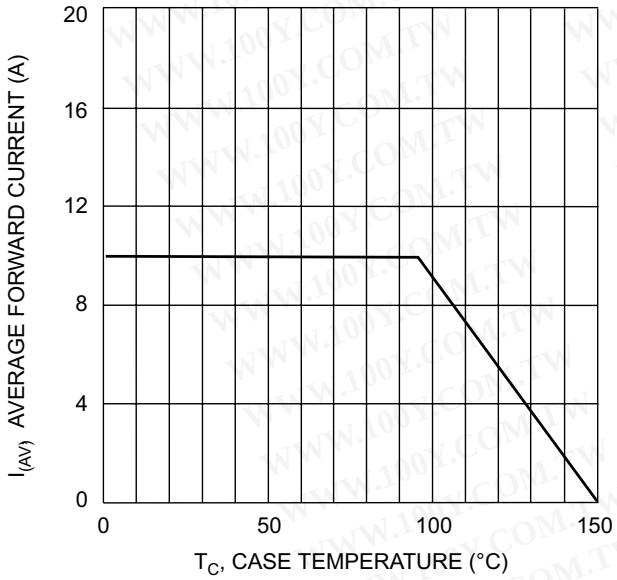



Fig. 1 Forward Current Derating Curve

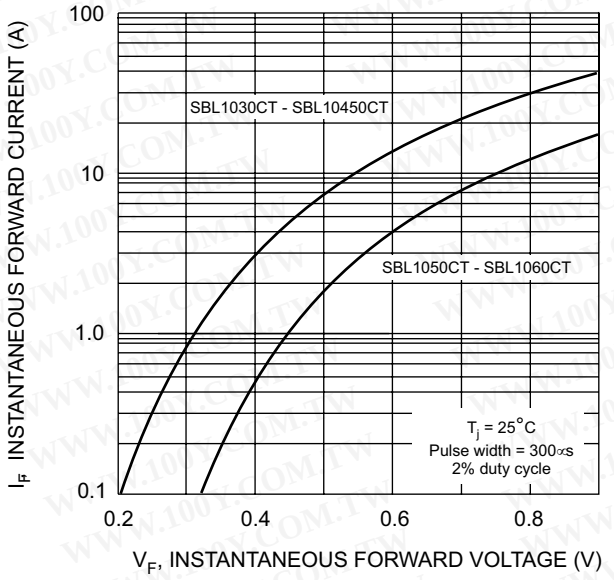



Fig. 2 Typical Forward Characteristics per Element

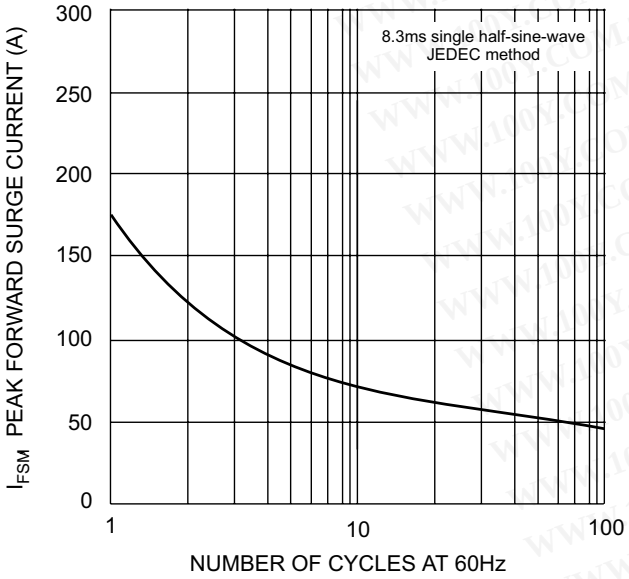



Fig. 3 Max Non-Repetitive Surge Current

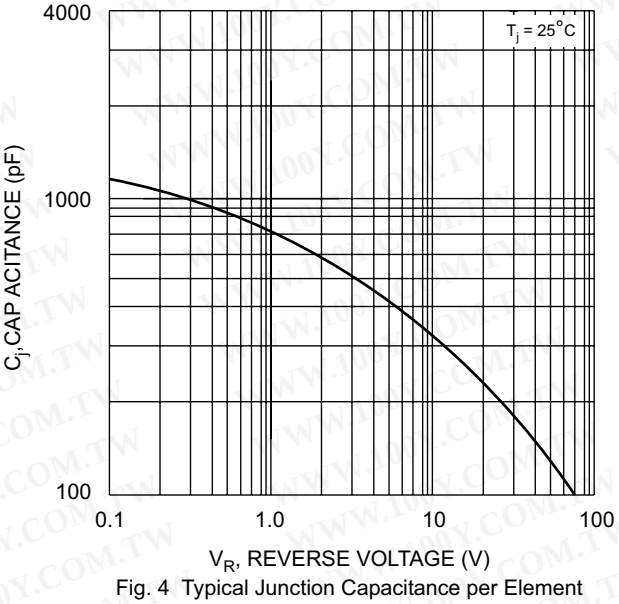



Fig. 4 Typical Junction Capacitance per Element

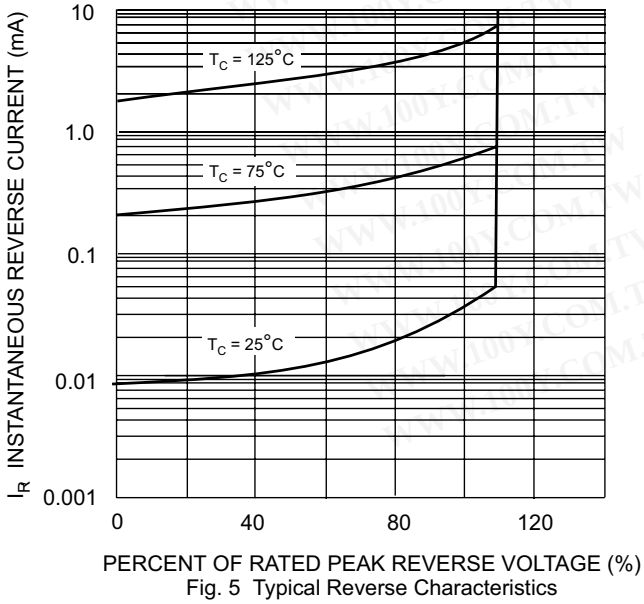



Fig. 5 Typical Reverse Characteristics