



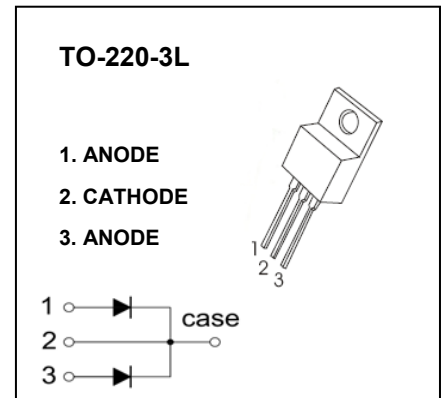
## TO-220-3L Plastic-Encapsulate Diodes

### SBL1030CT, 35CT, 40CT, 45CT, 50CT, 60CT

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



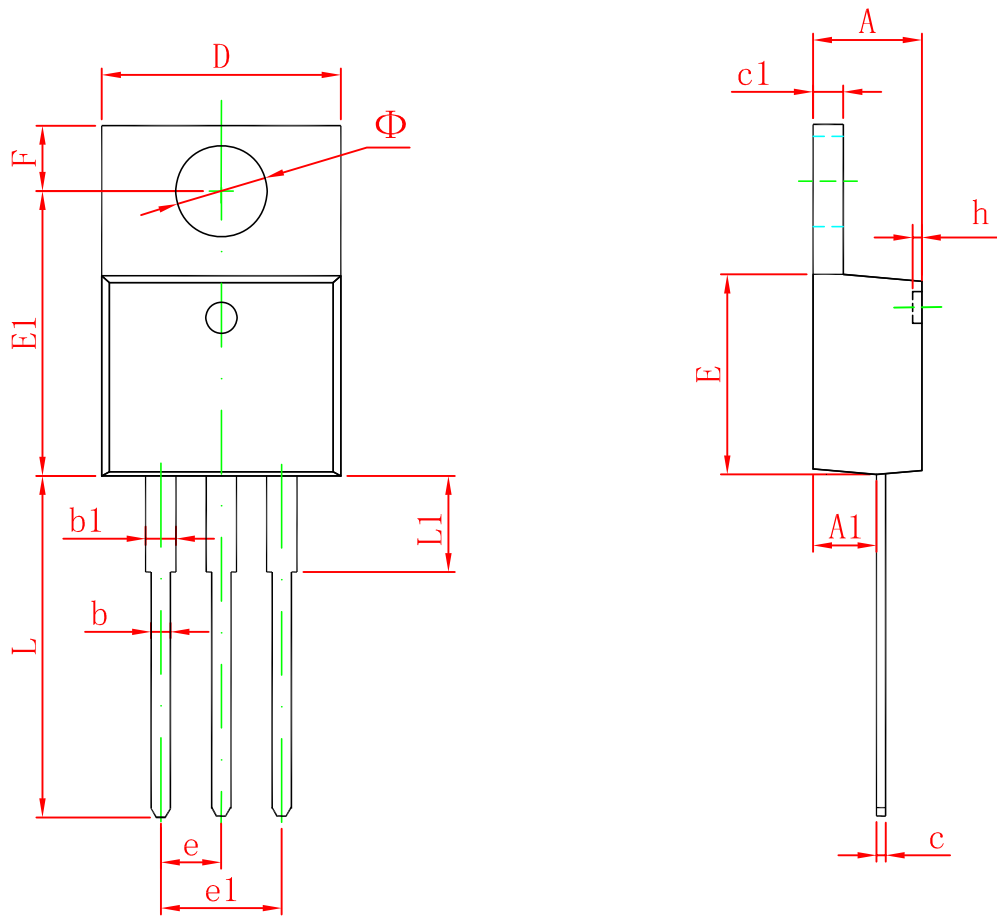
#### MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ unless otherwise noted )

| Symbol          | Parameter   | Value         |               |               |               |               |               | Unit               |
|-----------------|---|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|
|                 |   | SBL<br>1030CT | SBL<br>1035CT | SBL<br>1040CT | SBL<br>1045CT | SBL<br>1050CT | SBL<br>1060CT |                    |
| $V_{RRM}$       | Peak repetitive reverse voltage                                   | 30            | 35            | 40            | 45            | 50            | 60            | V                  |
| $V_{RWM}$       | Working peak reverse voltage                                      |               |               |               |               |               |               |                    |
| $V_R$           | DC blocking voltage   |               |               |               |               |               |               |                    |
| $V_{R(RMS)}$    | RMS reverse voltage   | 21            | 24.5          | 28            | 31.5          | 35            | 42            | V                  |
| $I_O$           | Average rectified output current@ $T_c=95^\circ\text{C}$          | 10            |               |               |               |               |               | A                  |
| $I_{FSM}$       | Non-Repetitive peak forward surge current<br>8.3ms half sine wave | 175           |               |               |               |               |               | A                  |
| $P_D$           | Power dissipation   | 2             |               |               |               |               |               | W                  |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient                       | 50            |               |               |               |               |               | $^\circ\text{C/W}$ |
| $T_J$           | Junction temperature  | 125           |               |               |               |               |               | $^\circ\text{C}$   |
| $T_{stg}$       | Storage temperature   | -55~+150      |               |               |               |               |               | $^\circ\text{C}$   |

**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

| Parameter                 | Symbol            | Device           | Test conditions           | Min | Typ | Max  | Unit |
|---------------------------|-------------------|------------------|---------------------------|-----|-----|------|------|
| Reverse voltage           | V <sub>(BR)</sub> | SBL1030CT        | I <sub>R</sub> =0.5mA     | 30  |     |      | V    |
|                           |                   | SBL1035CT        |                           | 35  |     |      |      |
|                           |                   | SBL1040CT        |                           | 40  |     |      |      |
|                           |                   | SBL1045CT        |                           | 45  |     |      |      |
|                           |                   | SBL1050CT        |                           | 50  |     |      |      |
|                           |                   | SBL1060CT        |                           | 60  |     |      |      |
| Reverse current           | I <sub>R</sub>    | SBL1030CT        | V <sub>R</sub> =30V       |     |     | 0.5  | mA   |
|                           |                   | SBL1035CT        | V <sub>R</sub> =35V       |     |     |      |      |
|                           |                   | SBL1040CT        | V <sub>R</sub> =40V       |     |     |      |      |
|                           |                   | SBL1045CT        | V <sub>R</sub> =45V       |     |     |      |      |
|                           |                   | SBL1050CT        | V <sub>R</sub> =50V       |     |     |      |      |
|                           |                   | SBL1060CT        | V <sub>R</sub> =60V       |     |     |      |      |
| Forward voltage           | V <sub>F</sub>    | SBL1030CT-1045CT | I <sub>F</sub> =5A        |     |     | 0.55 | V    |
|                           |                   | SBL1050CT,1060CT |                           |     |     | 0.7  |      |
| Typical total capacitance | C <sub>tot</sub>  | SBL1030CT-1060CT | V <sub>R</sub> =4V,f=1MHz |     | 450 |      | pF   |

# TO-220-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 4.470                     | 4.670  | 0.176                | 0.184 |
| A1     | 2.520                     | 2.820  | 0.099                | 0.111 |
| b      | 0.710                     | 0.910  | 0.028                | 0.036 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.310                     | 0.530  | 0.012                | 0.021 |
| c1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| D      | 10.010                    | 10.310 | 0.394                | 0.406 |
| E      | 8.500                     | 8.900  | 0.335                | 0.350 |
| E1     | 12.060                    | 12.460 | 0.475                | 0.491 |
| e      | 2.540 TYP                 |        | 0.100 TYP            |       |
| e1     | 4.980                     | 5.180  | 0.196                | 0.204 |
| F      | 2.590                     | 2.890  | 0.102                | 0.114 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 13.400                    | 13.800 | 0.528                | 0.543 |
| L1     | 3.560                     | 3.960  | 0.140                | 0.156 |
| $\Phi$ | 3.735                     | 3.935  | 0.147                | 0.155 |