



TO-220-3L Plastic-Encapsulate Diode

SBD20H300CTB SCHOTTKY BARRIER RECTIFIER

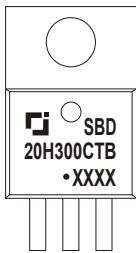
MAIN CHARACTERISTICS

| | |
|--------------|---|
| I_o | 20 (10×2) A |
| V_{RRM} | 300 V |
| T_j | 175 °C |
| $V_{F(typ)}$ | 0.81V (@$T_j=150^{\circ}C$) |

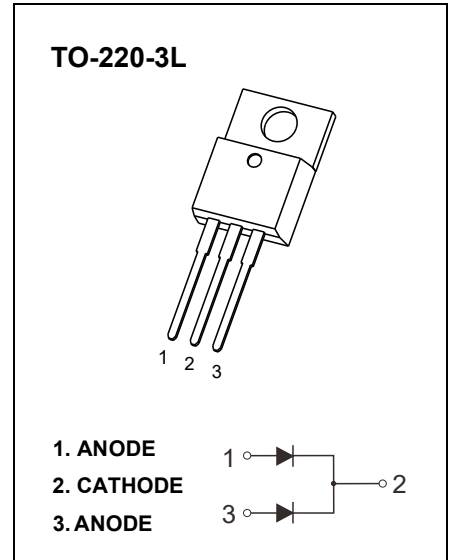
FEATURES

- Low Power Loss,High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop

MARKING



SBD20H300CTB= Device code
 Solid dot = Green molding compound device
 if none, the normal device
 XXXX=C code



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

| Symbol | Parameter | Value | Unit |
|-----------------|--|----------|---------------|
| V_{RRM} | Peak repetitive reverse voltage | 300 | V |
| V_{RWM} | Working peak reverse voltage | | |
| V_R | DC blocking voltage | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 210 | V |
| I_o | Average rectified output current | 20 | A |
| I_{FSM} | Non-Repetitive peak forward surge current (8.3ms half sine wave) | 248 | A |
| $R_{\theta JC}$ | Thermal resistance from junction to case | 1.2 | $^{\circ}C/W$ |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient | 22 | $^{\circ}C/W$ |
| T_j | Junction temperature | 175 | $^{\circ}C$ |
| T_{stg} | Storage temperature | -55~+175 | $^{\circ}C$ |

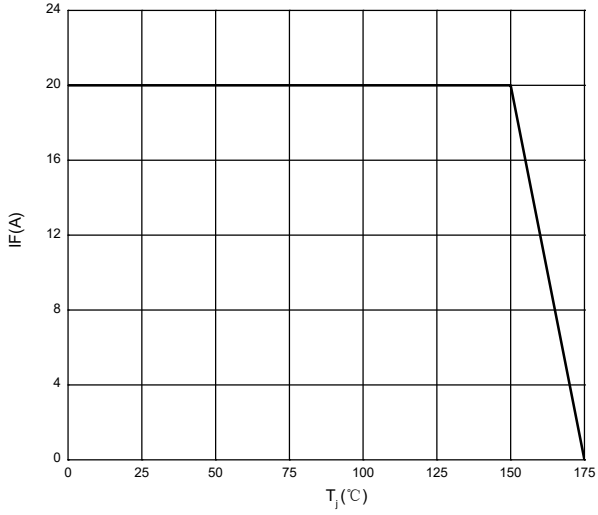
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$ unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-----------------|------------|-----------------|--------------------|------|------|------|
| Reverse voltage | $V_{(BR)}$ | $I_R=1mA$ | 300 | | | V |
| Reverse current | I_R | $V_R=300V$ | $T_j=25^{\circ}C$ | 92 | 500 | nA |
| | | | $T_j=150^{\circ}C$ | 0.76 | | mA |
| Forward voltage | V_F | $I_F=10A$ | $T_j=25^{\circ}C$ | 0.86 | 0.95 | V |
| | | | $T_j=150^{\circ}C$ | 0.70 | | V |
| | | $I_F=20A$ | $T_j=25^{\circ}C$ | 0.93 | | V |
| | | | $T_j=150^{\circ}C$ | 0.81 | | V |

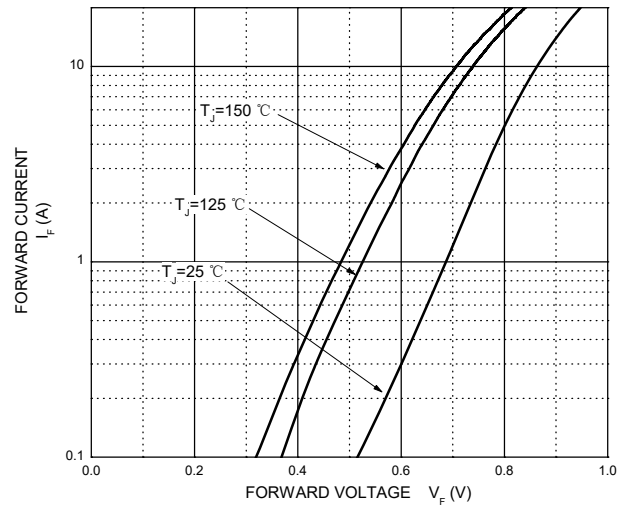
*Pulse test: pulse width $\leq 300\mu s$, duty cycles $\leq 2.0\%$.

Typical Characteristics

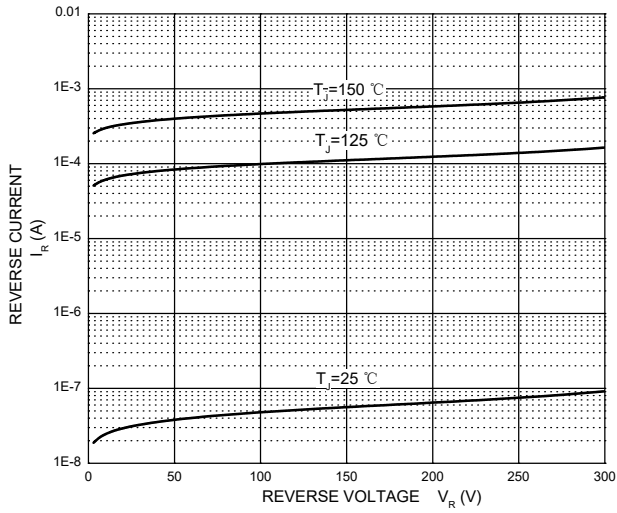
Forward Current Derating Curve



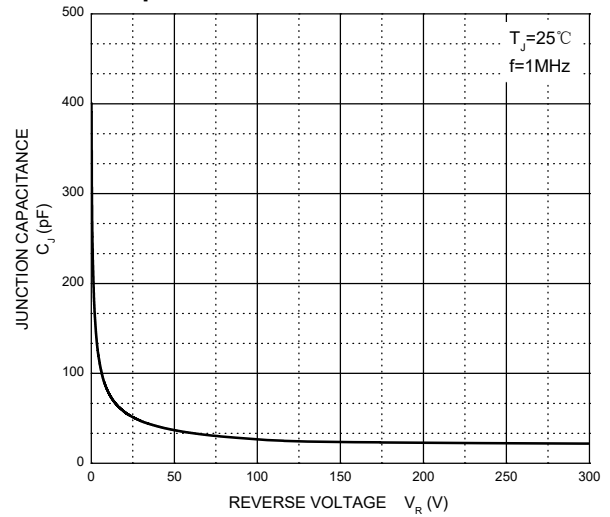
Forward Characteristics



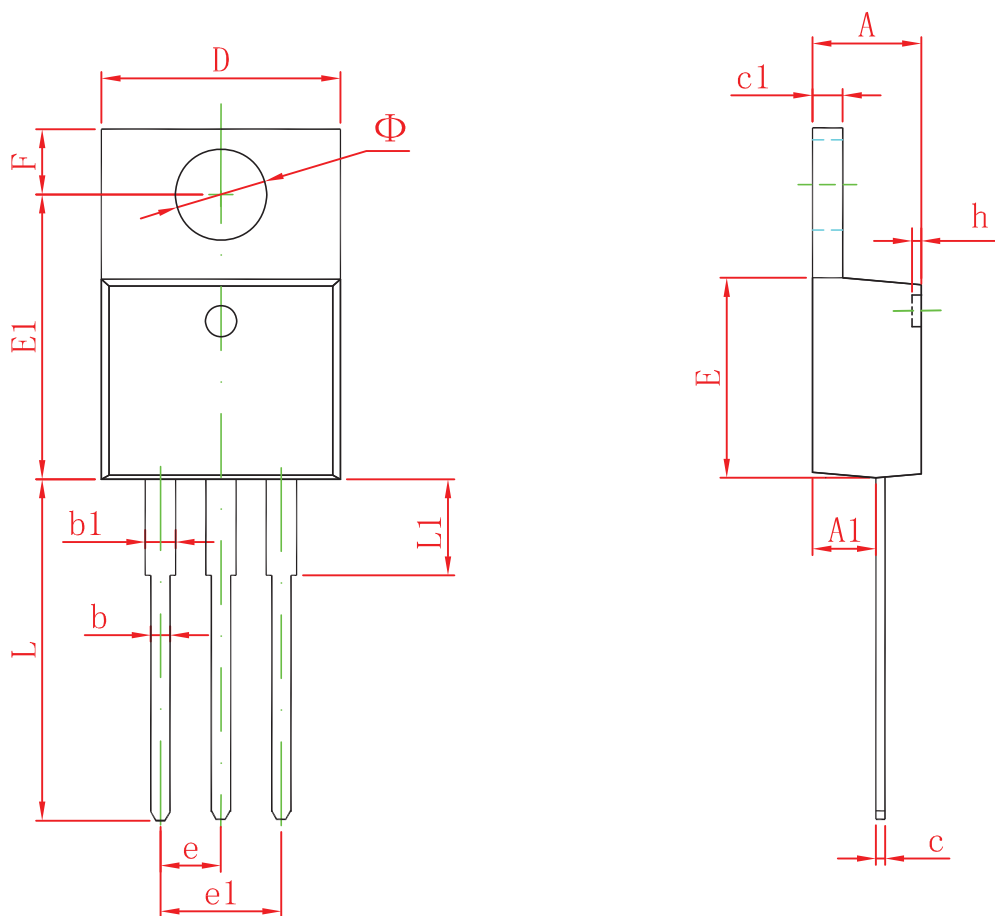
Reverse Characteristics



Capacitance Characteristics Per Diode



TO-220-3L Package Outline Dimensions



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 4.450 | 4.750 | 0.175 | 0.187 |
| 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 | 0.300 | 0.500 | 0.012 | 0.020 |
| c1 | 1.170 | 1.370 | 0.046 | 0.054 |
| D | 9.830 | 10.330 | 0.387 | 0.407 |
| E | 8.500 | 8.900 | 0.335 | 0.350 |
| E1 | 12.050 | 12.650 | 0.474 | 0.498 |
| e | 2.540 TYP | | 0.100 TYP | |
| e1 | 4.900 | 5.200 | 0.192 | 0.205 |
| F | 2.540 | 2.940 | 0.100 | 0.116 |
| h | 0.100 TYP | | 0.004 TYP | |
| L | 13.300 | 13.800 | 0.523 | 0.543 |
| L1 | 3.540 | 3.940 | 0.139 | 0.155 |
| Φ | 3.735 | 3.935 | 0.147 | 0.155 |