

SBD40120TCTB、SBDF40120TCTB

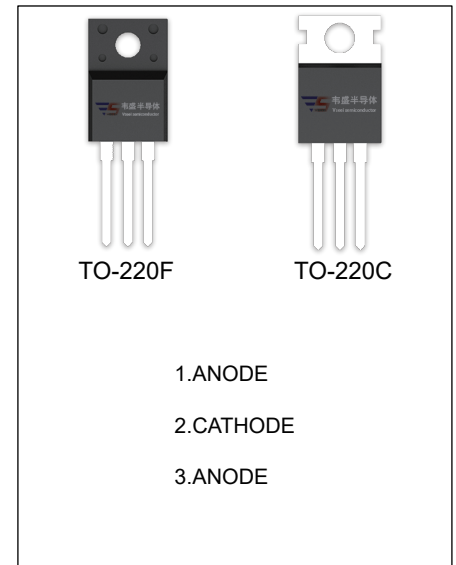
SCHOTTKY BARRIER RECTIFIER

MAIN CHARACTERISTICS

| | |
|--------------|-------------------------------|
| I_O | 40 (2×20) A |
| V_{RRM} | 120 V |
| T_j | 150 °C |
| $V_{F(typ)}$ | 0.66V (@ $T_j=125^{\circ}C$) |

FEATURES

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



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

| Symbol | Parameter | SBD | | Unit |
|-----------------|--|-----------|------------|---------------|
| | | 40120TCTB | F40120TCTB | |
| V_{RRM} | Peak repetitive reverse voltage | 120 | | V |
| V_{RWM} | Working peak reverse voltage | | | |
| V_R | DC blocking voltage | | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 84 | | V |
| I_O | Average rectified output current | 40 | | A |
| I_{FSM} | Non-Repetitive peak forward surge current (8.3ms half sine wave) | 250 | | A |
| $R_{\theta Jc}$ | Thermal resistance from junction to case , $T_c=25^{\circ}C$ | 2.0 | 3.0 | $^{\circ}C/W$ |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient | 62.5 | | $^{\circ}C/W$ |
| T_j | Junction temperature | 150 | | $^{\circ}C$ |
| T_{stg} | Storage temperature | -55~+150 | | $^{\circ}C$ |

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

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-----------------|------------|-----------------|--------------------|------|------|---------|
| Reverse voltage | $V_{(BR)}$ | $I_R=0.1mA$ | 120 | | | V |
| Reverse current | I_R | $V_R=120V$ | $T_j=25^{\circ}C$ | 5 | 100 | μA |
| | | | $T_j=125^{\circ}C$ | 5 | | mA |
| Forward voltage | V_F | $I_F=10A$ | $T_j=25^{\circ}C$ | 0.59 | | V |
| | | | $T_j=125^{\circ}C$ | 0.54 | | V |
| | | $I_F=20A$ | $T_j=25^{\circ}C$ | 0.76 | 0.82 | V |
| | | | $T_j=125^{\circ}C$ | 0.66 | | V |

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

FIG.1: FORWARD CURRENT DERATING CURVE

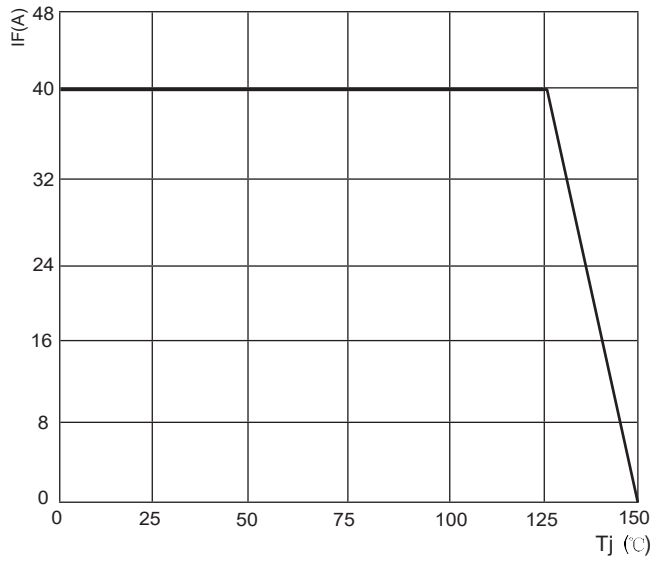


FIG.2: TYPICAL FORWARD CHARACTERISTICS

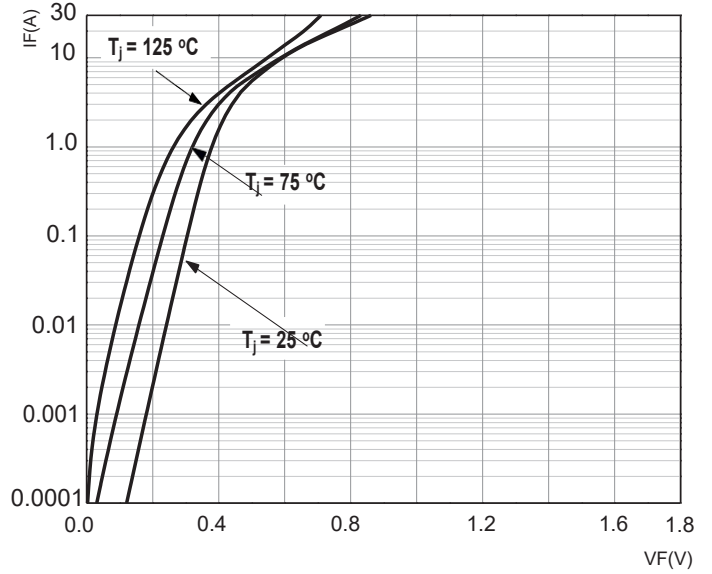


FIG.3: TOTAL CAPACITANCE DERATING CURVE

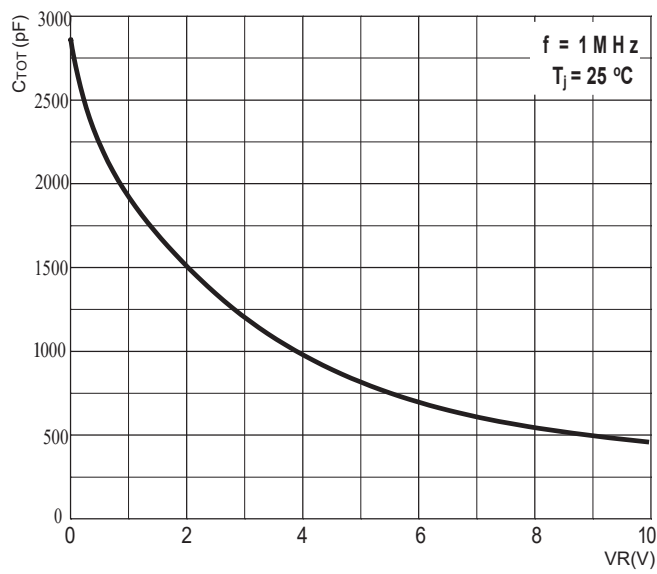


FIG.4: TYPICAL REVERSE CHARACTERISTICS

