

SOT223 PNP SILICON PLANAR MEDIUM POWER TRANSISTOR

BCP51

ISSUE 3 – AUGUST 1995

FEATURES

- * Suitable for AF drivers and output stages
- * High collector current and Low $V_{CE(sat)}$

COMPLEMENTARY TYPE – BCP54

PARTMARKING DETAILS – BCP51
BCP51 – 10
BCP51 – 16



ABSOLUTE MAXIMUM RATINGS.

| PARAMETER | SYMBOL | VALUE | UNIT |
|---|----------------|-------------|------------------|
| Collector-Base Voltage | V_{CBO} | -45 | V |
| Collector-Emitter Voltage | V_{CEO} | -45 | V |
| Emitter-Base Voltage | V_{EBO} | -5 | V |
| Peak Pulse Current | I_{CM} | -1.5 | A |
| Continuous Collector Current | I_C | -1 | A |
| Power Dissipation at $T_{amb}=25^\circ\text{C}$ | P_{tot} | 2 | W |
| Operating and Storage Temperature Range | $T_j; T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | CONDITIONS. |
|---------------------------------------|---------------|-----------------------|------------|-------------------|---------------------|--|
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | -45 | | | V | $I_C = -100\mu\text{A}$ |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | -45 | | | V | $I_C = -10\text{mA}^*$ |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | -5 | | | V | $I_E = -10\mu\text{A}$ |
| Collector Cut-Off Current | I_{CBO} | | | -100 -10 | nA μA | $V_{CB} = -30\text{V}$ $V_{CB} = -30\text{V}, T_{amb} = 150^\circ\text{C}$ |
| Emitter Cut-Off Current | I_{EBO} | | | -10 | μA | $V_{EB} = -5\text{V}$ |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | | | -0.5 | V | $I_C = -500\text{mA}, I_B = -50\text{mA}^*$ |
| Base-Emitter Turn-On Voltage | $V_{BE(on)}$ | | | -1.0 | V | $I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$ |
| Static Forward Current Transfer Ratio | h_{FE} | 40 25 63 100 | 100 160 | 250 160 250 | | $I_C = -150\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -500\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -150\text{mA}, V_{CE} = -2\text{V}^*$ $I_C = -150\text{mA}, V_{CE} = -2\text{V}^*$ |
| Transition Frequency | f_T | | 125 | | MHz | $I_C = -50\text{mA}, V_{CE} = -10\text{V}, f = 100\text{MHz}$ |

*Measured under pulsed conditions. Pulse width=300 μs . Duty cycle $\leq 2\%$