

SOT-23 Plastic-Encapsulate Transistors

MMBT5551 TRANSISTOR (NPN)

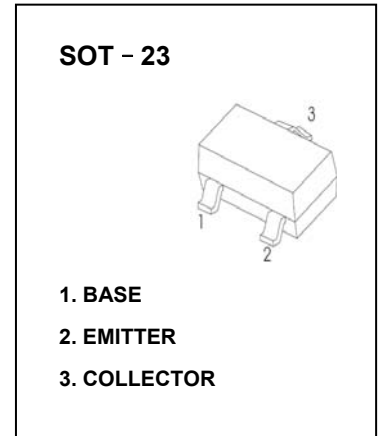
FEATURES

- Complementary to MMBT5401
- Ideal for Medium Power Amplification and Switching

MARKING: G1

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

| Symbol | Parameter | Value | Unit |
|-----------------|---|----------|---------------------------|
| V_{CBO} | Collector-Base Voltage | 180 | V |
| V_{CEO} | Collector-Emitter Voltage | 160 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current | 600 | mA |
| P_C | Collector Power Dissipation | 300 | mW |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 416 | $^\circ\text{C}/\text{W}$ |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | -55~+150 | $^\circ\text{C}$ |



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

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|--------------------------------------|------------------|---|-----|-----|------|------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu\text{A}, I_E=0$ | 180 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}^*$ | $I_C=1\text{mA}, I_B=0$ | 160 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=10\mu\text{A}, I_C=0$ | 6 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=120\text{V}, I_E=0$ | | | 50 | nA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=4\text{V}, I_C=0$ | | | 50 | nA |
| DC current gain | $h_{FE(1)}^*$ | $V_{CE}=5\text{V}, I_C=1\text{mA}$ | 80 | | | |
| | $h_{FE(2)}^*$ | $V_{CE}=5\text{V}, I_C=10\text{mA}$ | 100 | | 300 | |
| | $h_{FE(3)}^*$ | $V_{CE}=5\text{V}, I_C=50\text{mA}$ | 50 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)1}^*$ | $I_C=10\text{mA}, I_B=1\text{mA}$ | | | 0.15 | V |
| | $V_{CE(sat)2}^*$ | $I_C=50\text{mA}, I_B=5\text{mA}$ | | | 0.2 | V |
| Base-emitter saturation voltage | $V_{BE(sat)1}^*$ | $I_C=10\text{mA}, I_B=1\text{mA}$ | | | 1 | V |
| | $V_{BE(sat)2}^*$ | $I_C=50\text{mA}, I_B=5\text{mA}$ | | | 1 | V |
| Transition frequency | f_T | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 100 | | 300 | MHz |
| Collector output capacitance | C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | | 6 | pF |

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

CLASSIFICATION OF $h_{FE(2)}$

| RANK | L | H |
|-------|---------|---------|
| RANGE | 100-200 | 200-300 |

Typical Characteristics

MMBT5551

