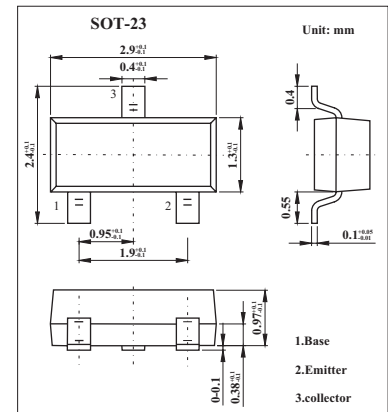


## NPN Transistors

### MMBT5551

#### ■ Features

- High Voltage Transistors
- Pb-Free Packages are Available



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                        | Symbol         | Rating      | Unit             |
|----------------------------------|----------------|-------------|------------------|
| Collector-base voltage           | $V_{CB0}$      | 180         | V                |
| Collector-emitter voltage        | $V_{CE0}$      | 160         | V                |
| Emitter-base voltage             | $V_{EB0}$      | 6           | V                |
| Collector current-continuous     | $I_C$          | 0.6         | A                |
| Collector Power Dissipation      | $P_C$          | 300         | mW               |
| Junction and storage temperature | $T_J, T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                              | Symbol        | Testconditions                                        | Min | Typ | Max | Unit |
|----------------------------------------|---------------|-------------------------------------------------------|-----|-----|-----|------|
| Collector-base breakdown voltage       | $V_{CB0}$     | $I_C = 100 \mu\text{A}, I_E = 0$                      | 180 |     |     | V    |
| Collector-emitter breakdown voltage *  | $V_{CE0}$     | $I_C = 1.0 \text{ mA}, I_B = 0$                       | 160 |     |     | V    |
| Emitter-base breakdown voltage         | $V_{EB0}$     | $I_E = 10 \mu\text{A}, I_C = 0$                       | 6   |     |     | V    |
| Collector cutoff current               | $I_{CBO}$     | $V_{CB} = 120 \text{ V}, I_E = 0$                     |     |     | 50  | nA   |
| Emitter cutoff current                 | $I_{EBO}$     | $V_{EB} = 4.0 \text{ V}, I_C = 0$                     |     |     | 50  | nA   |
| DC current gain *                      | $h_{FE}$      | $I_C = 1.0 \text{ mA}, V_{CE} = 5 \text{ V}$          | 80  |     |     |      |
|                                        |               | $I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}$           | 100 |     | 300 |      |
|                                        |               | $I_C = 50 \text{ mA}, V_{CE} = 5 \text{ V}$           | 50  |     |     |      |
| Collector-emitter saturation voltage * | $V_{CE(sat)}$ | $I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$           |     |     | 0.5 | V    |
| Base-emitter saturation voltage *      | $V_{BE(sat)}$ | $I_C = 50 \text{ mA}, I_B = 5.0 \text{ mA}$           |     |     | 1.0 | V    |
| Transistor frequency                   | $f_T$         | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 100 |     |     | MHz  |

\* Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle=2.0%.

#### ■ Marking

|         |    |
|---------|----|
| Marking | G1 |
|---------|----|

### ■ Typical Characteristics

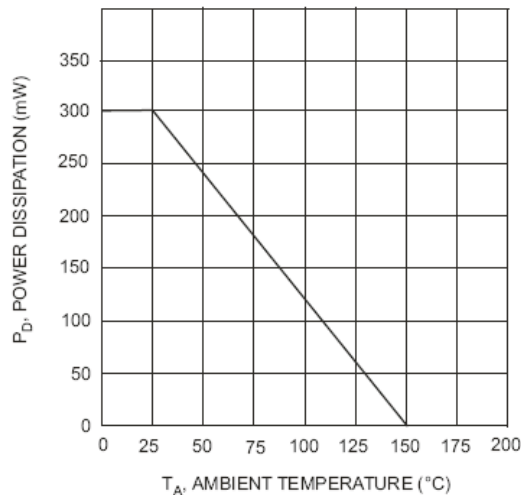


Fig.1 Max Power Dissipation vs. Ambient Temperature

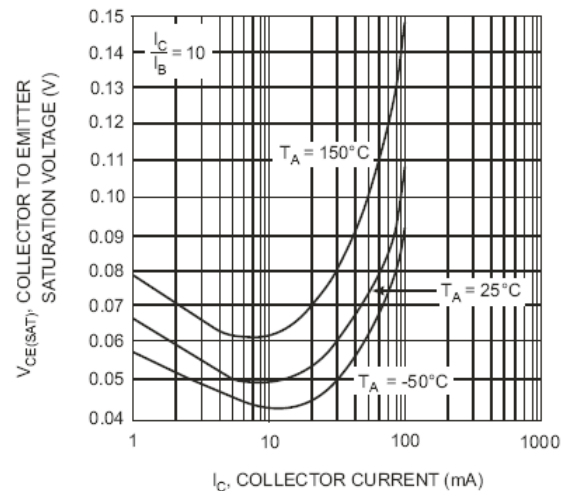


Fig.2 Collector Emitter Saturation Voltage vs. Collector Current

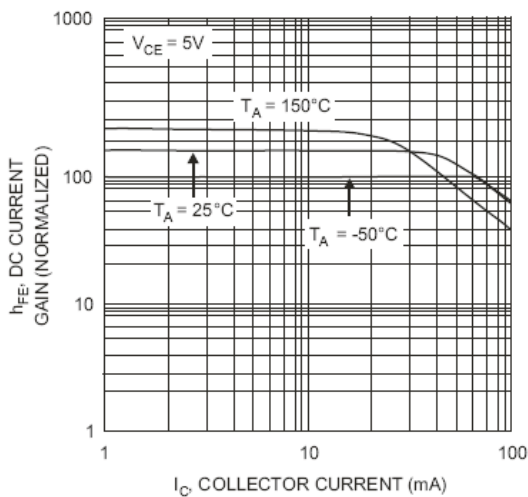


Fig.3 DC Current Gain vs. Collector Current

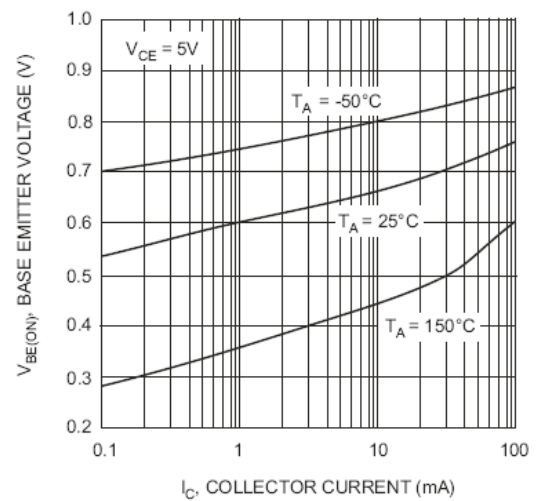


Fig.4 Base Emitter Voltage vs. Collector Current

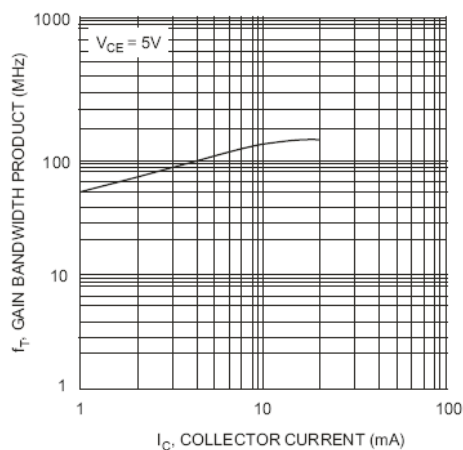


Fig.5 Gain Bandwidth Product vs. Collector Current