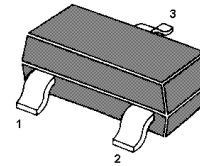


MMBTSC2411

NPN Silicon Epitaxial Planar Transistor

The transistor is subdivided into three groups P, Q and R according to its DC current gain.



1.BASE 2.EMITTER 3.COLLECTOR
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit |
|---------------------------|-----------|-------------|------------------|
| Collector Base Voltage | V_{CBO} | 40 | V |
| Collector Emitter Voltage | V_{CEO} | 32 | V |
| Emitter Base Voltage | V_{EBO} | 5 | V |
| Collector Current | I_C | 500 | mA |
| Power Dissipation | P_{tot} | 200 | mW |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{Stg} | -55 to +150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Typ. | Max. | Unit | |
|---|---------------|----------|------|------|---------------|---|
| DC Current Gain at $V_{CE} = 3\text{ V}$, $I_C = 100\text{ mA}$ | P | h_{FE} | 82 | - | 180 | - |
| | Q | h_{FE} | 120 | - | 270 | - |
| | R | h_{FE} | 180 | - | 390 | - |
| Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$ | $V_{(BR)CBO}$ | 40 | - | - | V | |
| Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$ | $V_{(BR)CEO}$ | 32 | - | - | V | |
| Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$ | $V_{(BR)EBO}$ | 5 | - | - | V | |
| Collector Cutoff Current at $V_{CB} = 20\text{ V}$ | I_{CBO} | - | - | 1 | μA | |
| Emitter Cutoff Current at $V_{EB} = 4\text{ V}$ | I_{EBO} | - | - | 1 | μA | |
| Collector Saturation Voltage at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$ | $V_{CE(sat)}$ | - | - | 0.4 | V | |
| Transition frequency at $V_{CE} = 5\text{ V}$, $-I_E = 20\text{ mA}$, $f = 100\text{ MHz}$ | f_T | - | 250 | - | MHz | |
| Output Capacitance at $V_{CB} = 10\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$ | C_{ob} | - | 6 | - | pF | |

MMBTSC2411

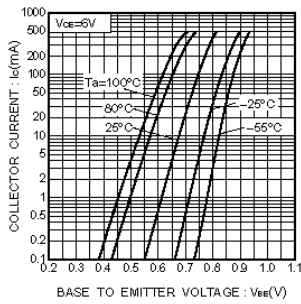


Fig.1 Grounded emitter propagation characteristics

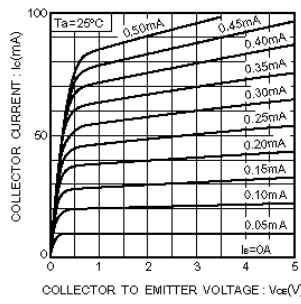


Fig.2 Grounded emitter output characteristics(I)

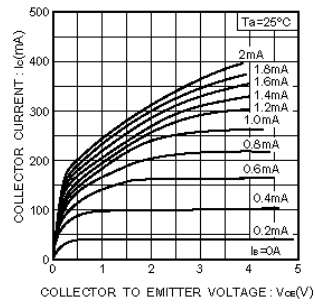


Fig.3 Grounded emitter output characteristics(II)

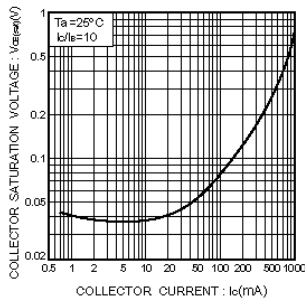


Fig.4 Collector-emitter saturation voltage vs. collector current

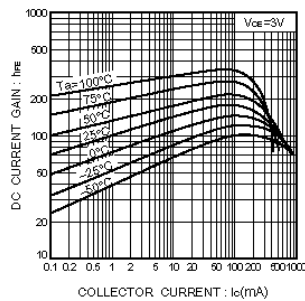


Fig.5 DC current gain vs. collector current

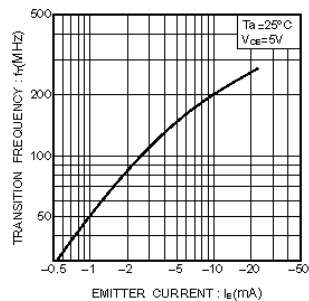


Fig.6 Gain bandwidth product vs. emitter current

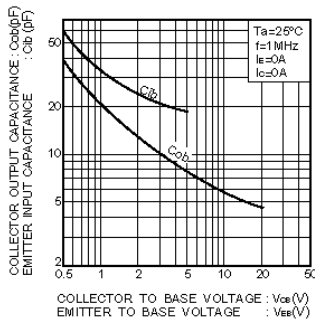


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage