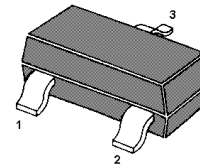


MMBTSB1197

PNP Silicon Epitaxial Planar Transistor

Low frequency transistor

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



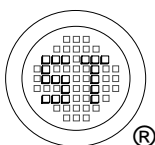
1.BASE 2.EMITTER 3.COLLECTOR
SOT-23 Plastic Package

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 | $-I_C$ | 800 | 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. | Max. | Unit |
|---|----------------|------|------|---------------|
| DC Current Gain at $-V_{CE} = 3\text{ V}$, $-I_C = 100\text{ mA}$ | Q h_{FE} | 120 | 270 | - |
| | R h_{FE} | 180 | 390 | - |
| Collector Cutoff Current at $-V_{CB} = 20\text{ V}$ | $-I_{CBO}$ | - | 0.5 | μA |
| Emitter Cutoff Current at $-V_{EB} = 4\text{ V}$ | $-I_{EBO}$ | - | 0.5 | μA |
| Collector Base Breakdown Voltage at $-I_C = 50\text{ }\mu\text{A}$ | $-V_{(BR)CBO}$ | 40 | - | V |
| Collector Emitter Breakdown Voltage at $-I_C = 1\text{ mA}$ | $-V_{(BR)CEO}$ | 32 | - | V |
| Emitter Base Breakdown Voltage at $-I_E = 50\text{ }\mu\text{A}$ | $-V_{(BR)EBO}$ | 5 | - | V |
| Collector Saturation Voltage at $-I_C = 500\text{ mA}$, $-I_B = 50\text{ mA}$ | $-V_{CE(sat)}$ | - | 0.5 | V |
| Output Capacitance at $-V_{CB} = 10\text{ V}$, $I_E = 0\text{ A}$, $f = 1\text{ MHz}$ | C_{ob} | - | 30 | pF |
| Transition Frequency at $-V_{CE} = 5\text{ V}$, $I_E = 50\text{ mA}$, $f = 100\text{ MHz}$ | f_T | 50 | - | MHz |



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Dated : 21/12/2005

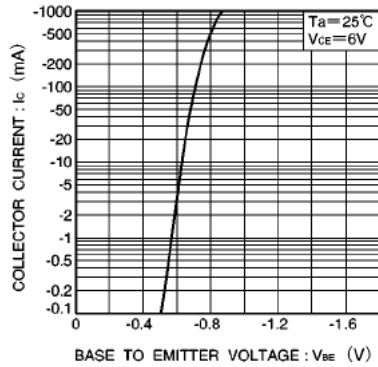


Fig.1 Grounded emitter propagation characteristics

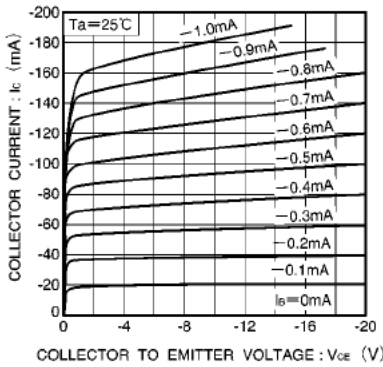


Fig.2 Grounded emitter output characteristics (I)

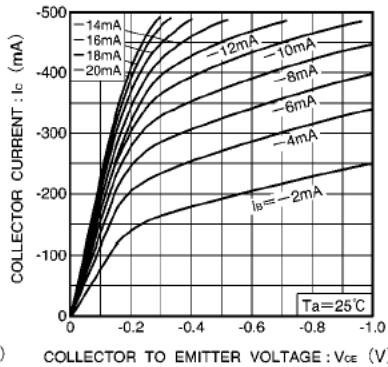


Fig.3 Grounded emitter output characteristics (II)

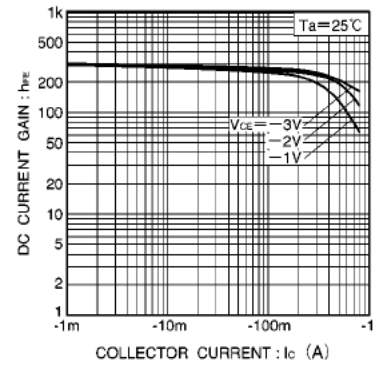


Fig.4 DC current gain vs. collector current

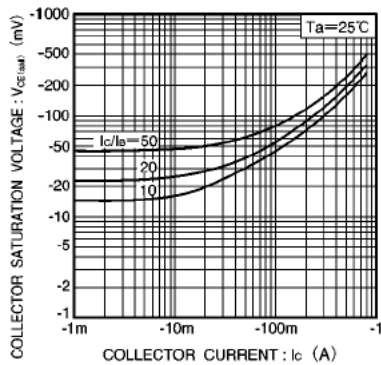


Fig.5 Collector-emitter saturation voltage vs. collector current

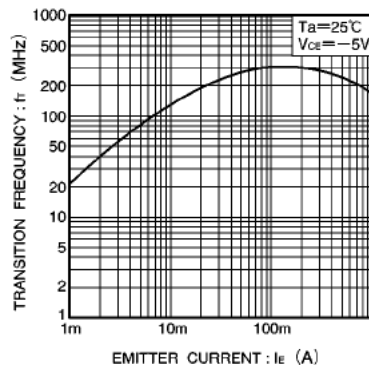


Fig.6 Gain bandwidth product vs. emitter current

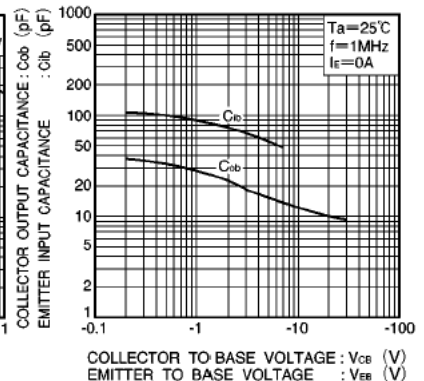
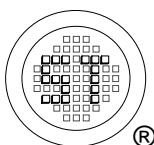


Fig.7 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage



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