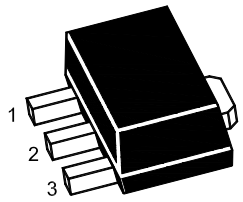
# PNP Silicon Epitaxial Planar Transistor




1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $-V_{CBO}$ | 20 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 20 | V |
| Emitter Base Voltage | $-V_{EBO}$ | 6 | V |
| Collector Current - DC<br>Collector Current - Pulse [1)] | $-I_C$<br>$-I_{CP}$ | 3<br>5 | A<br>A |
| Total Power Dissipation | $P_{tot}$ | 0.5 | W |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature Range | $T_{Stg}$ | - 55 to + 150 | °C |

[1)] Single pulse, PW = 10 ms.

**Characteristics at $T_a$ = 25 °C**

| Parameter | | | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| DC Current Gain<br>at $-V_{CE}$ = 2 V, $-I_C$ = 100 mA | Current Gain Group | Q<br>R | $h_{FE}$<br>$h_{FE}$ | 120<br>180 | -<br>- | 270<br>390 | -<br>- |
| Collector Base Breakdown Voltage<br>at $-I_C$ = 50 µA | | | $-V_{(BR)CBO}$ | 20 | - | - | V |
| Collector Emitter Breakdown Voltage<br>at $-I_C$ = 1 mA | | | $-V_{(BR)CEO}$ | 20 | - | - | V |
| Emitter Base Breakdown Voltage<br>at $-I_E$ = 50 µA | | | $-V_{(BR)EBO}$ | 6 | - | - | V |
| Collector Cutoff Current<br>at $-V_{CB}$ = 20 V | | | $-I_{CBO}$ | - | - | 0.1 | µA |
| Emitter Cutoff Current<br>at $-V_{EB}$ = 5 V | | | $-I_{EBO}$ | - | - | 0.1 | µA |
| Collector Emitter Saturation Voltage<br>at $-I_C$ = 2 A, $-I_B$ = 100 mA | | | $-V_{CE(sat)}$ | - | - | 0.5 | V |
| Transition Frequency<br>at $-V_{CE}$ = 2 V, $-I_E$ = 0.5 A, f = 100 MHz | | | $f_T$ | - | 240 | - | MHz |
| Output Capacitance<br>at $-V_{CB}$ = 10 V, f = 1 MHz | | | $C_{ob}$ | - | 35 | - | pF |

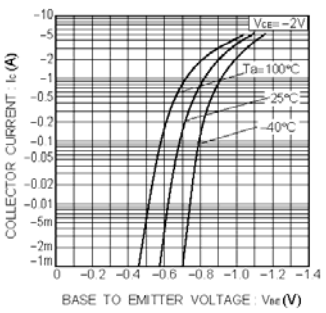



Fig.1 Grounded emitter propagation characteristics

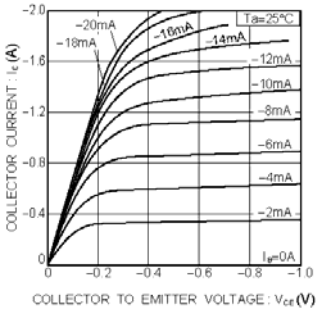



Fig.2 Grounded emitter output characteristics (Ⅰ)

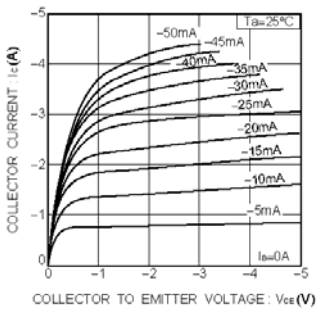



Fig.3 Grounded emitter output characteristics (Ⅱ)

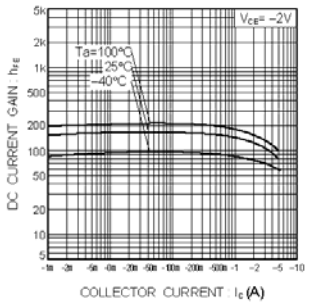



Fig.4 DC current gain vs. collector current

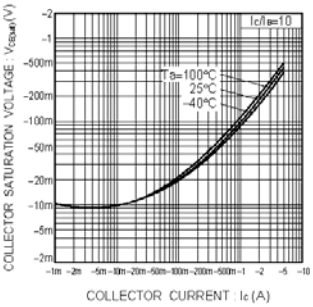



Fig.5 Collector-emitter saturation voltage vs. collector curren (Ⅰ)

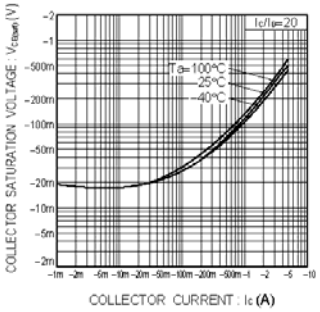



Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅱ)

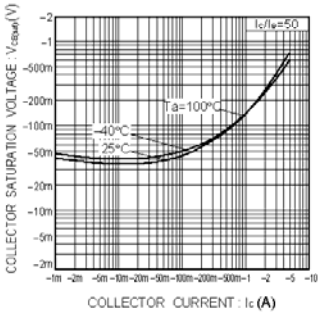



Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅲ)

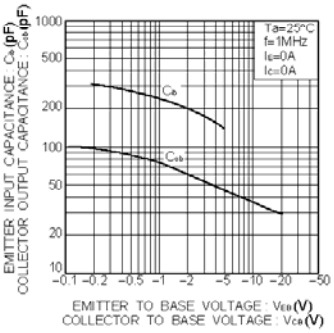



Fig.8 Gain bandwidth product vs. emitter current
Collector output capacitance vs. collector-base voltage

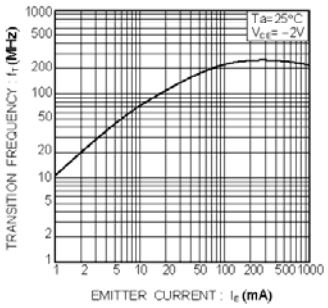



Fig.9 Emitter input capacitance vs. emitter base voltage