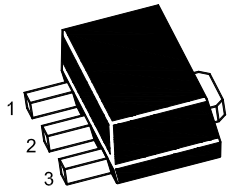
# NPN Silicon Epitaxial Planar Transistors

for general purpose, high voltage amplifier applications.

MARKING:G1




1.Base 2.Collector 3.Emitter

SOT-89 Plastic Package

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $V_{CBO}$ | 180 | V |
| Collector Emitter Voltage | $V_{CEO}$ | 160 | V |
| Emitter Base Voltage | $V_{EBO}$ | 6 | V |
| Collector Current | $I_C$ | 600 | mA |
| Power Dissipation | $P_{tot}$ | 500 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | - 55 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

| Parameter | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| DC Current Gain<br>at $V_{CE}$ = 5 V, $I_C$ = 1 mA<br>at $V_{CE}$ = 5 V, $I_C$ = 10 mA<br>at $V_{CE}$ = 5 V, $I_C$ = 50 mA | <br>$h_{FE}$<br>$h_{FE}$<br>$h_{FE}$ | <br>80<br>80<br>30 | <br>-<br>250<br>- | <br>-<br>-<br>- |
| Collector Base Cutoff Current<br>at $V_{CB}$ = 120 V | $I_{CBO}$ | - | 50 | nA |
| Emitter Base Cutoff Current<br>at $V_{EB}$ = 4 V | $I_{EBO}$ | - | 50 | nA |
| Collector Base Breakdown Voltage<br>at $I_C$ = 100 µA | $V_{(BR)CBO}$ | 180 | - | V |
| Collector Emitter Breakdown Voltage<br>at $I_C$ = 1 mA | $V_{(BR)CEO}$ | 160 | - | V |
| Emitter Base Breakdown Voltage<br>at $I_E$ = 10 µA | $V_{(BR)EBO}$ | 6 | - | V |
| Collector Emitter Saturation Voltage<br>at $I_C$ = 10 mA, $I_B$ = 1 mA<br>at $I_C$ = 50 mA, $I_B$ = 5 mA | $V_{CE(sat)}$ | <br>- | 0.15<br>0.2 | V |
| Base Emitter Saturation Voltage<br>at $I_C$ = 10 mA, $I_B$ = 1 mA<br>at $I_C$ = 50 mA, $I_B$ = 5 mA | $V_{BE(sat)}$ | <br>- | 1<br>1 | V |
| Gain Bandwidth Product<br>at $V_{CE}$ = 10 V, $I_C$ = 10 mA, f = 100 MHz | $f_T$ | 100 | 300 | MHz |
| Collector Output Capacitance<br>at $V_{CB}$ = 10 V, f = 1 MHz | $C_{ob}$ | - | 6 | pF |



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Fig.1 $P_{tot}$ - $T_a$

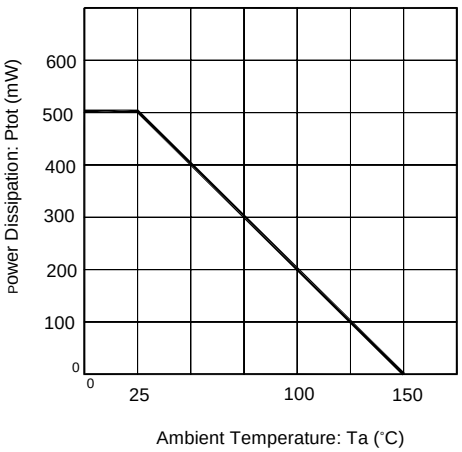



**Fig. 2 $I_C$ - $V_{BE}$**

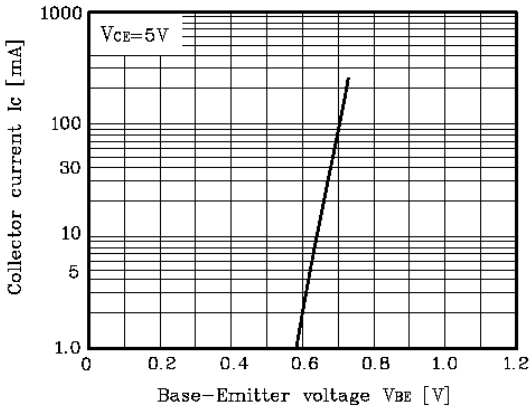



**Fig. 3 $f_T$ - $I_C$**

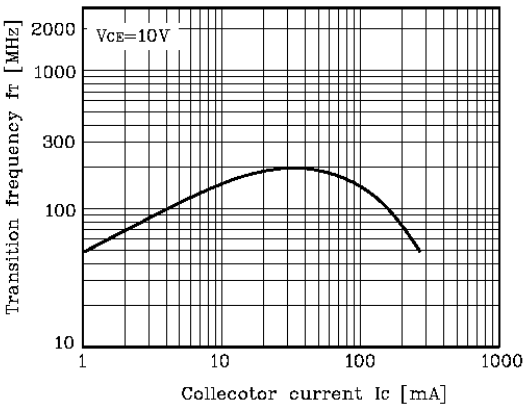



**Fig. 4 $V_{CE(sat)}$, $V_{BE(sat)}$ - $I_C$**

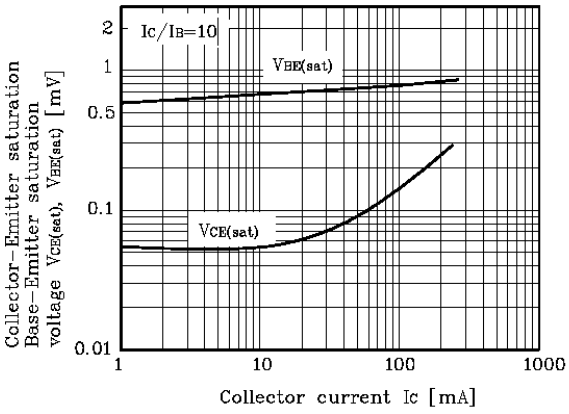
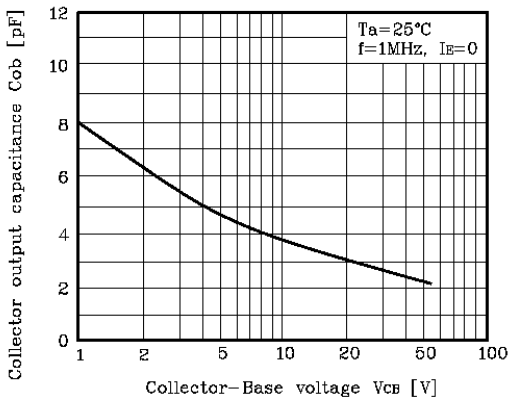



**Fig. 5 $C_{ob}$ - $V_{CB}$**






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