

2SC2404

Silicon NPN epitaxial planer type

For high-frequency amplification

Features

- Optimum for RF amplification of FM/AM radios.
- High transition frequency f_T .
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Absolute Maximum Ratings (Ta=25°C)

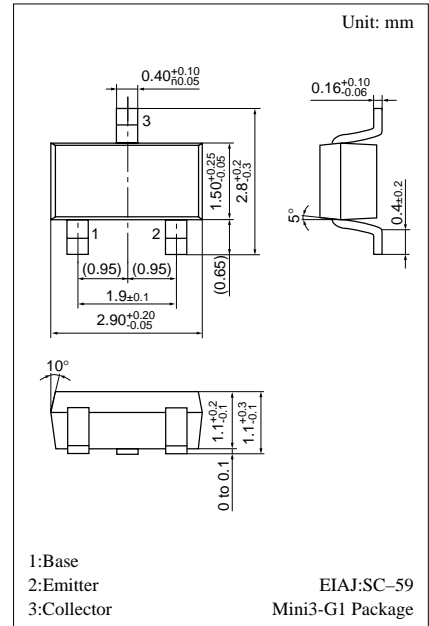
| Parameter | Symbol | Rated | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage | V_{CBO} | 30 | V |
| Collector to emitter voltage | V_{CEO} | 20 | V |
| Emitter to base voltage | V_{EBO} | 3 | V |
| Collector current | I_C | 15 | mA |
| Collector power dissipation | P_C | 150 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 ~ +150 | °C |

Electrical Characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|------------|---------------------------------------|-----|------|-----|------|
| Collector to base voltage | V_{CBO} | $I_C = 10\mu A, I_E = 0$ | 30 | | | V |
| Emitter to base voltage | V_{EBO} | $I_E = 10\mu A, I_C = 0$ | 3 | | | V |
| Forward current transfer ratio | h_{FE}^* | $V_{CB} = 6V, I_E = -1mA$ | 40 | | 260 | |
| Base to emitter voltage | V_{BE} | $V_{CB} = 6V, I_E = -1mA$ | | 0.72 | | V |
| Transition frequency | f_T | $V_{CB} = 6V, I_E = -1mA, f = 100MHz$ | 450 | 650 | | MHz |
| Common emitter reverse transfer capacitance | C_{re} | $V_{CE} = 6V, I_C = 1mA, f = 10.7MHz$ | | 0.8 | 1 | pF |
| Power gain | PG | $V_{CB} = 6V, I_E = -1mA, f = 100MHz$ | | 24 | | dB |
| Noise figure | NF | $V_{CB} = 6V, I_E = -1mA, f = 100MHz$ | | 3.3 | | dB |

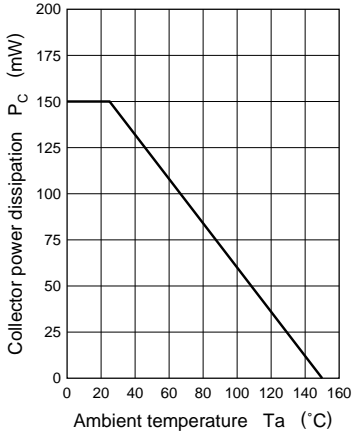
* h_{FE} Rank classification

| Rank | B | C | D |
|----------------|----------|----------|-----------|
| h_{FE} | 40 ~ 110 | 65 ~ 160 | 100 ~ 260 |
| Marking Symbol | UB | UC | UD |

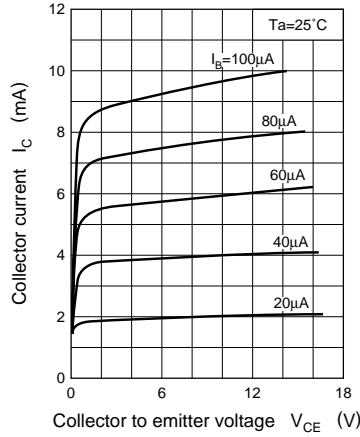


Marking symbol : U

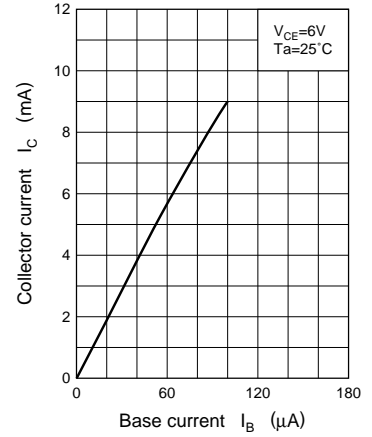
$P_C - T_a$



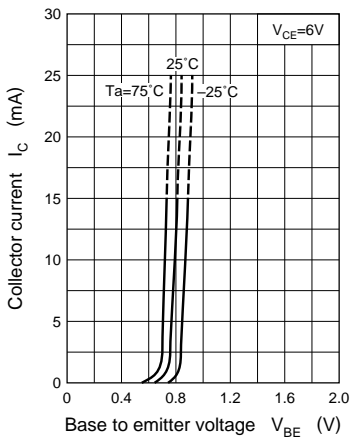
$I_C - V_{CE}$



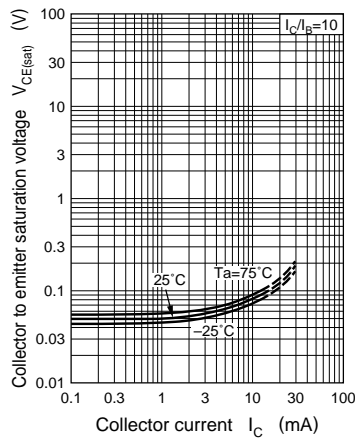
$I_C - I_B$



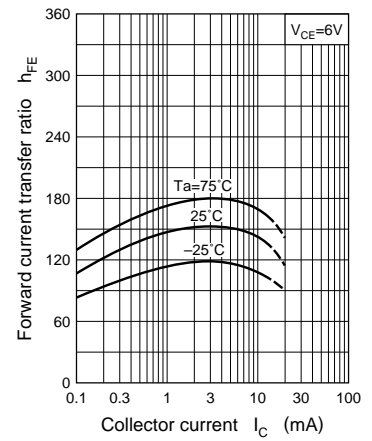
$I_C - V_{BE}$



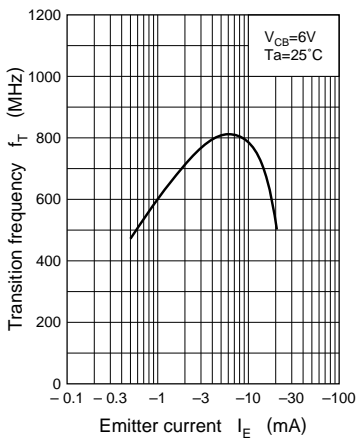
$V_{CE(sat)} - I_C$



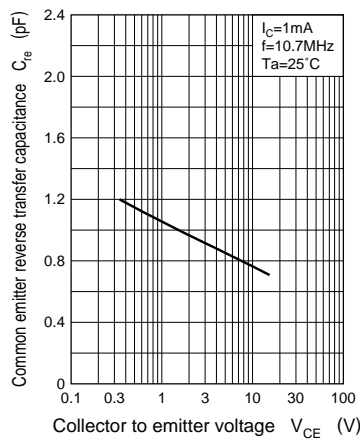
$h_{FE} - I_C$



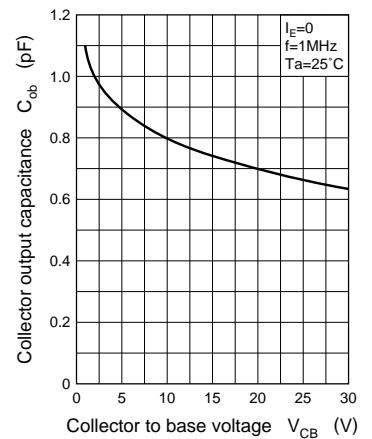
$f_T - I_E$



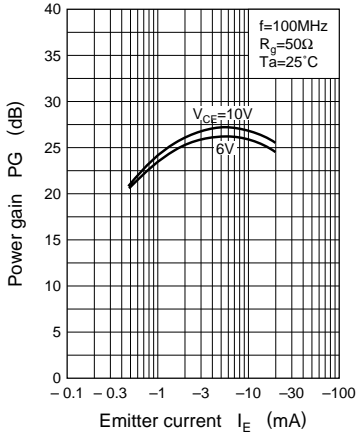
$C_{re} - V_{CE}$



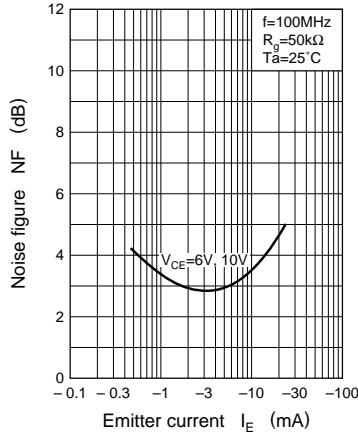
$C_{ob} - V_{CB}$



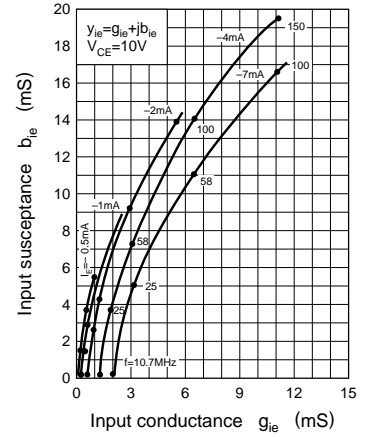
PG — I_E



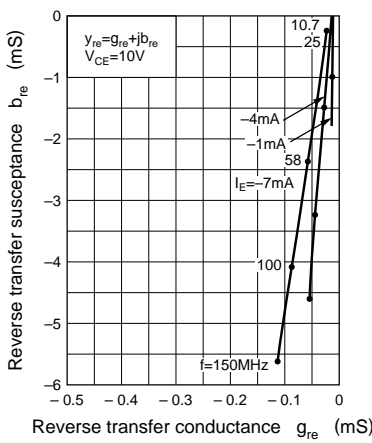
NF — I_E



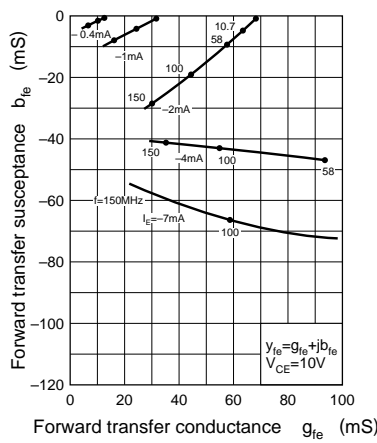
b_{ie} — g_{ie}



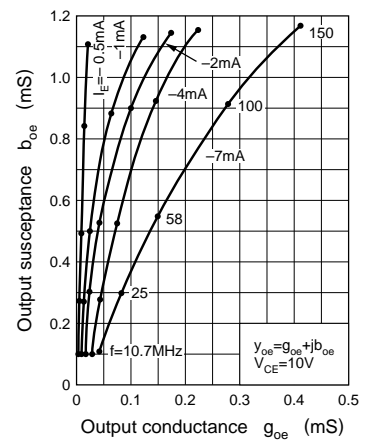
b_{re} — g_{re}



b_{fe} — g_{fe}



b_{oe} — g_{oe}



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