

# 2SC2404

## Silicon NPN epitaxial planar type

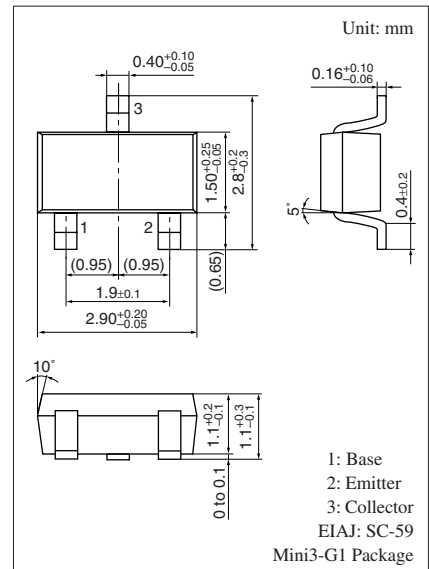
For high-frequency amplification

### ■ 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 $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 30          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 20          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 3           | V                |
| Collector current                     | $I_C$     | 15          | mA               |
| Collector power dissipation           | $P_C$     | 150         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |



Marking Symbol: U

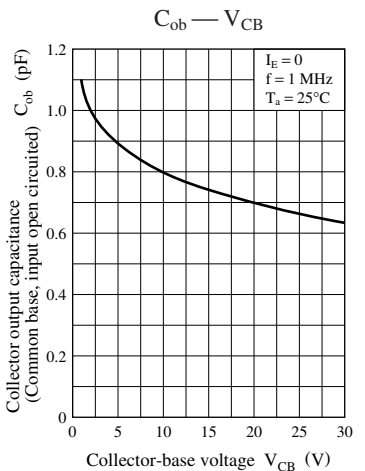
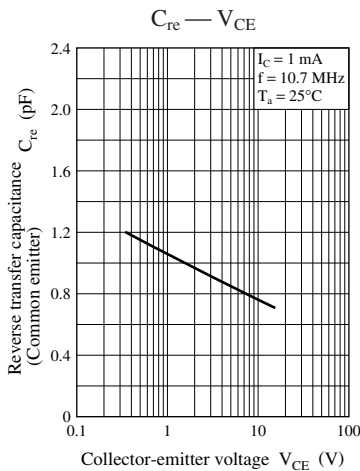
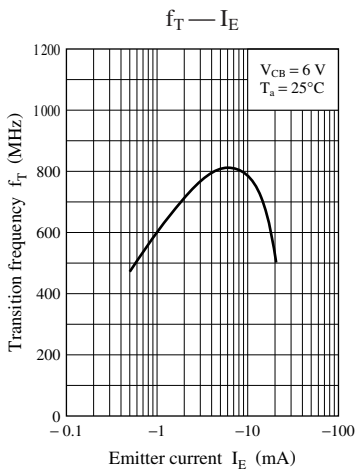
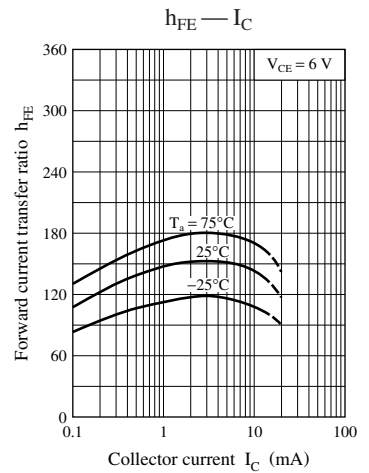
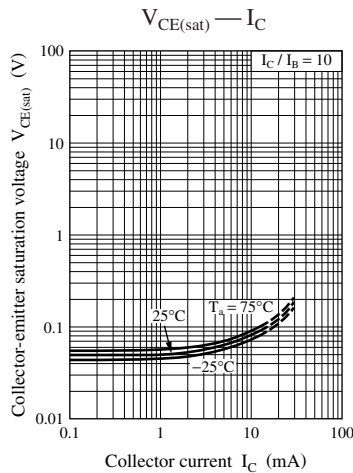
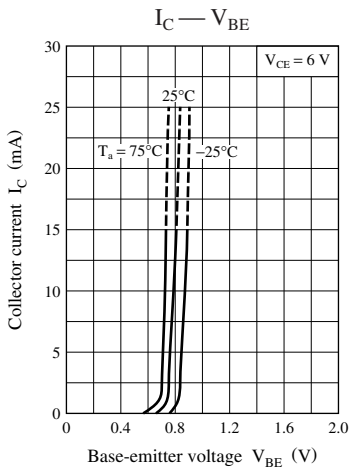
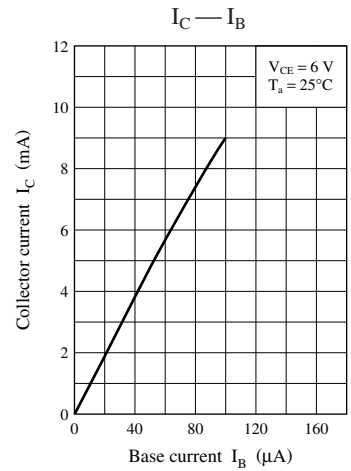
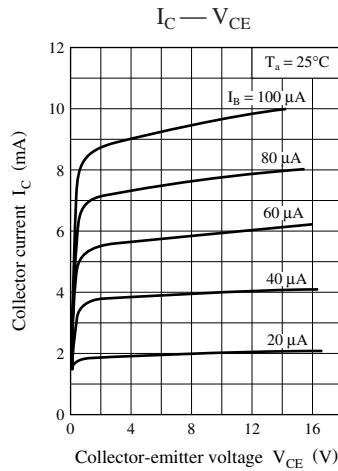
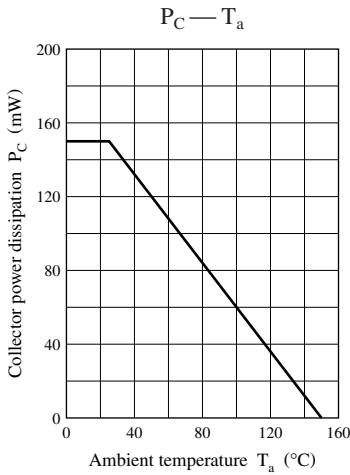
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

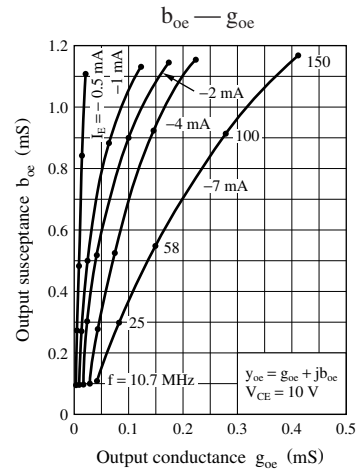
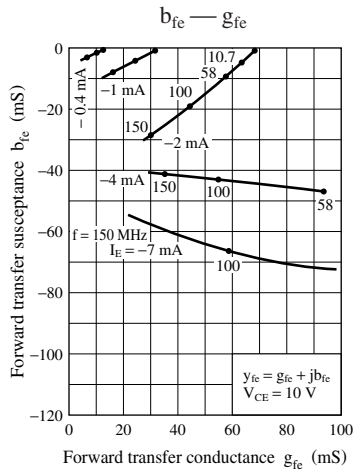
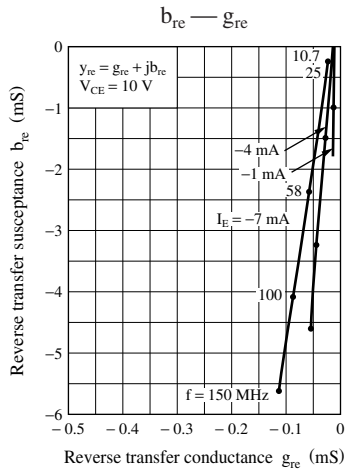
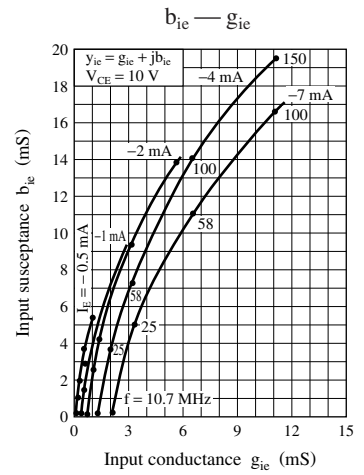
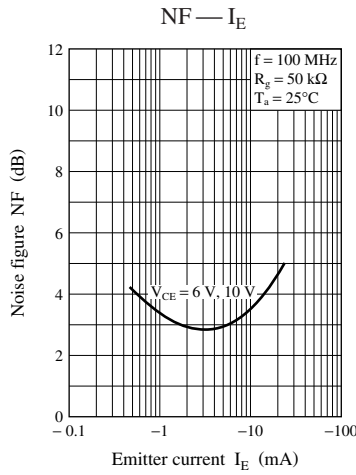
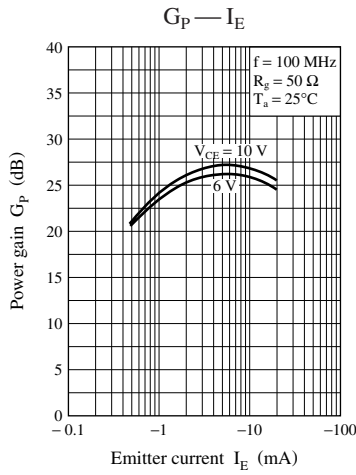
| Parameter                                     | Symbol    | Conditions  | Min | Typ  | Max | Unit |
|---|-----------|---|-----|------|-----|------|
| Collector-base voltage (Emitter open)         | $V_{CBO}$ | $I_C = 10 \mu\text{A}$ , $I_E = 0$                                      | 30  |      |     | V    |
| Emitter-base voltage (Collector open)         | $V_{EBO}$ | $I_E = 10 \mu\text{A}$ , $I_C = 0$                                      | 3   |      |     | V    |
| Base-emitter voltage                          | $V_{BE}$  | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$                          |     | 0.72 |     | V    |
| Forward current transfer ratio *              | $h_{FE}$  | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$                          | 65  |      | 260 | —    |
| Transition frequency                          | $f_T$     | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 100 \text{ MHz}$  | 450 | 650  |     | MHz  |
| Reverse transfer capacitance (Common emitter) | $C_{re}$  | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 10.7 \text{ MHz}$ |     | 0.8  | 1.0 | pF   |
| Power gain                                    | $G_P$     | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 100 \text{ MHz}$  |     | 24   |     | dB   |
| Noise figure                                  | NF        | $V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 100 \text{ MHz}$  |     | 3.3  |     | dB   |

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Rank classification

| Rank     | C         | D          |
|----------|-----------|------------|
| $h_{FE}$ | 65 to 160 | 100 to 260 |





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