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# 2SC3704

## Silicon NPN epitaxial planar type

For UHF band low-noise amplification

### ■ Features

- Low noise figure NF
- High forward transfer gain  $|S_{21e}|^2$
- High transition frequency  $f_T$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

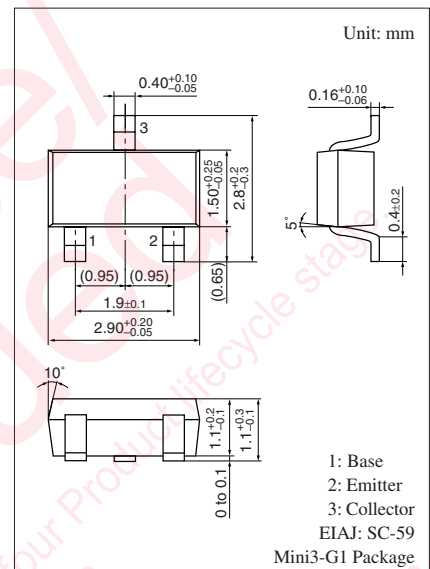
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter                             | Symbol    | Rating      | Unit             |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 15          | V                |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 10          | V                |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 2           | V                |
| Collector current                     | $I_C$     | 80          | mA               |
| Collector power dissipation           | $P_C$     | 200         | mW               |
| Junction temperature                  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                   | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

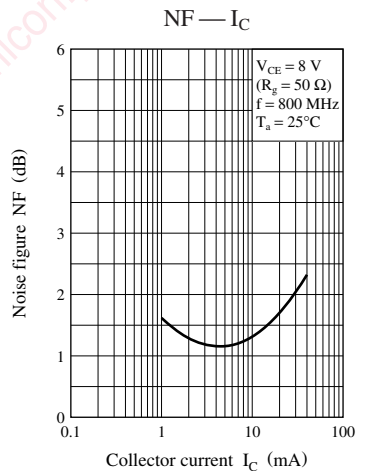
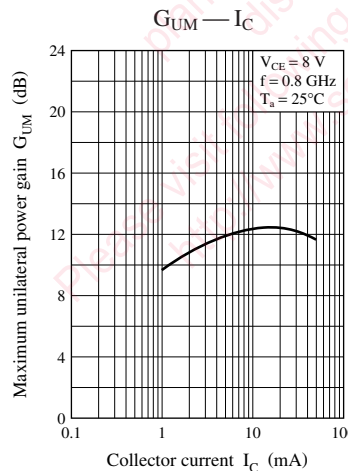
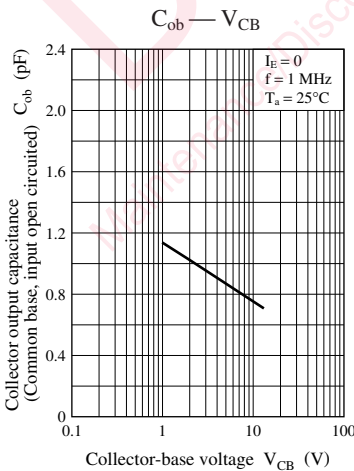
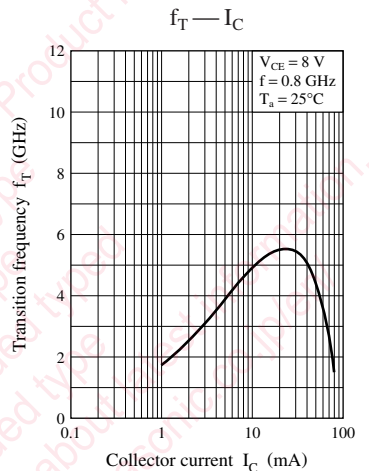
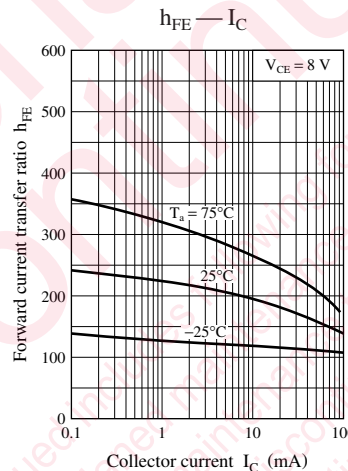
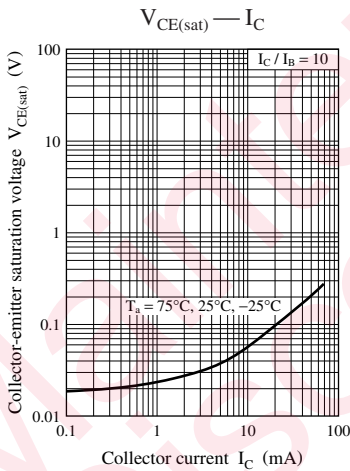
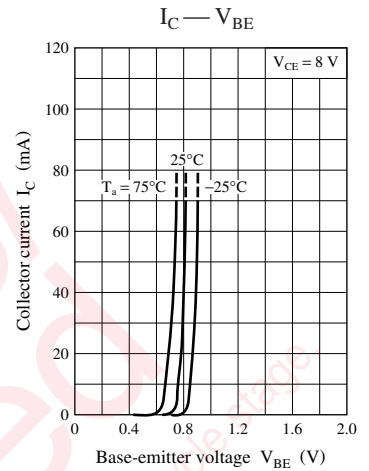
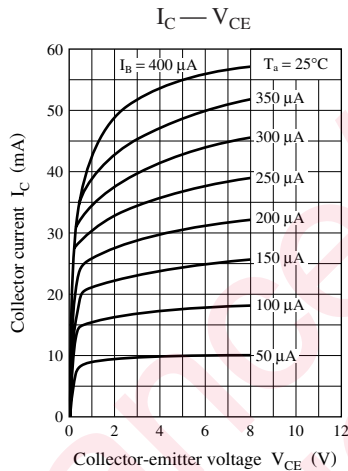
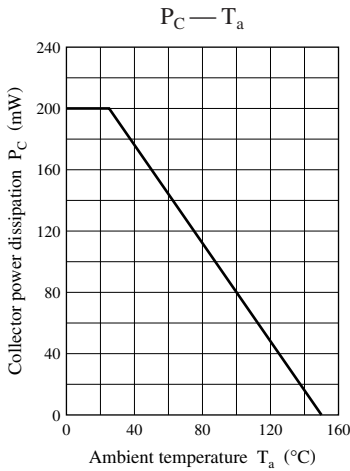
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter   | Symbol        | Conditions  | Min | Typ | Max | Unit          |
|---|---------------|---|-----|-----|-----|---------------|
| Collector-base cutoff current (Emitter open)                        | $I_{CBO}$     | $V_{CB} = 15\text{ V}, I_E = 0$                               |     |     | 1   | $\mu\text{A}$ |
| Emitter-base cutoff current (Collector open)                        | $I_{EBO}$     | $V_{EB} = 1\text{ V}, I_C = 0$                                |     |     | 1   | $\mu\text{A}$ |
| Forward current transfer ratio                                      | $h_{FE1}$     | $V_{CE} = 8\text{ V}, I_C = 20\text{ mA}$                     | 50  | 150 | 300 | —             |
|   | $h_{FE2}$     | $V_{CE} = 1\text{ V}, I_C = 3\text{ mA}$                      | 80  |     | 280 |               |
| Transition frequency  | $f_T$         | $V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 0.8\text{ GHz}$ |     | 6   |     | GHz           |
| Collector output capacitance<br>(Common base, input open circuited) | $C_{ob}$      | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$             |     | 0.7 | 1.2 | pF            |
| Forward transfer gain   | $ S_{21e} ^2$ | $V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 0.8\text{ GHz}$ |     | 13  |     | dB            |
| Maximum unilateral power gain                                       | $G_{UM}$      | $V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 0.8\text{ GHz}$ |     | 14  |     | dB            |
| Noise figure  | NF            | $V_{CE} = 8\text{ V}, I_C = 7\text{ mA}, f = 0.8\text{ GHz}$  |     | 1.0 | 1.7 | dB            |

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



Marking Symbol: 2W





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