

2SC5939

Silicon NPN epitaxial planar type

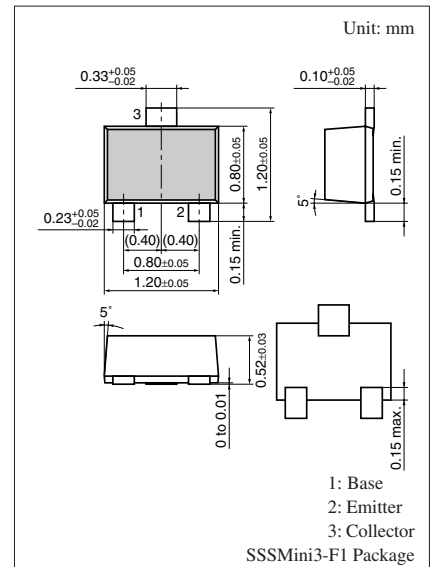
For high-frequency amplification/oscillation/mixing

■ Features

- High transition frequency f_T
- Small collector output capacitance (Common base, input open circuited) C_{ob} and reverse transfer capacitance (Common base) C_{rb}
- SSS-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape 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} | 3 | V |
| Collector current | I_C | 50 | mA |
| Collector power dissipation | P_C | 100 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +125 | $^\circ\text{C}$ |

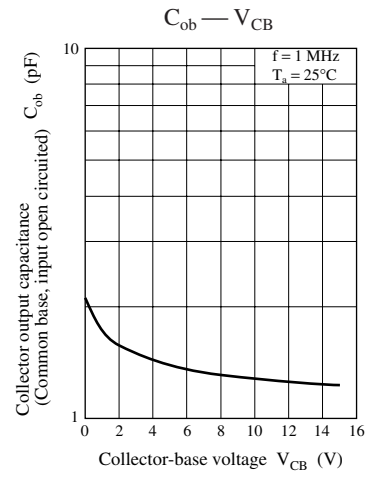
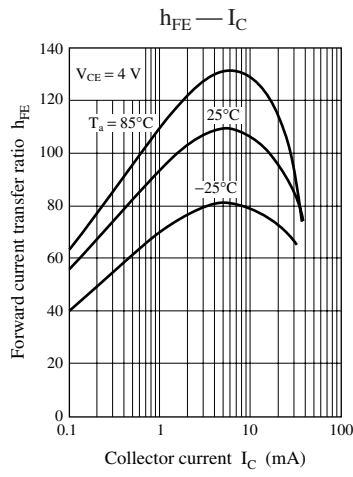
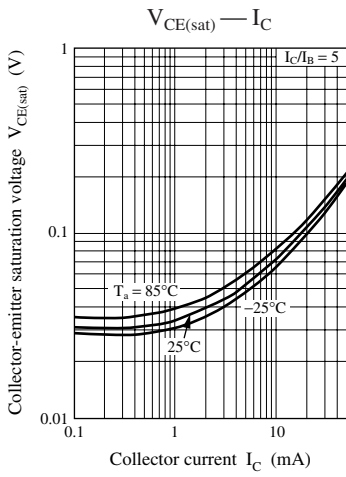
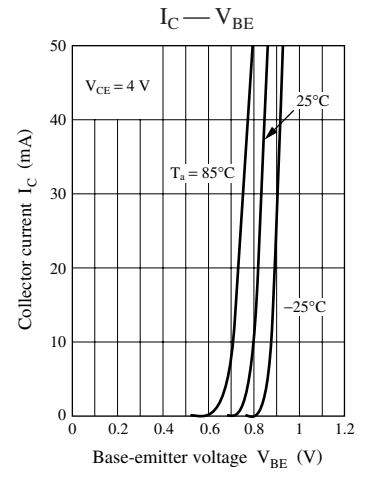
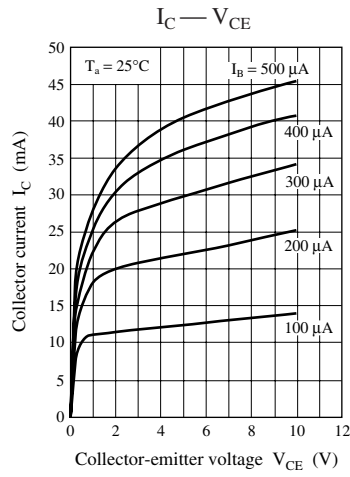
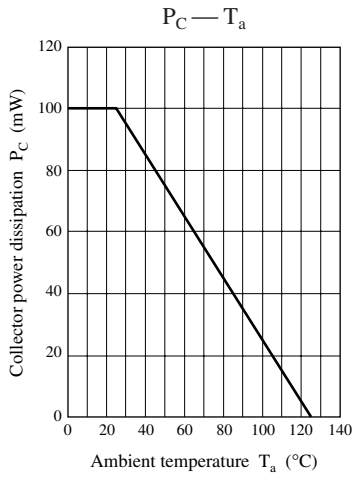


Marking Symbol: 1S

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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|--------------------------|---|------|------|-----|---------------|
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 2 \text{ mA}, I_B = 0$ | 10 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 10 \mu\text{A}, I_C = 0$ | 3 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 10 \text{ V}, I_E = 0$ | | | 1 | μA |
| Forward current transfer ratio | h_{FE} | $V_{CE} = 4 \text{ V}, I_C = 5 \text{ mA}$ | 75 | | 400 | — |
| h_{FE} ratio | Δh_{FE} | $V_{CE} = 4 \text{ V}, I_C = 100 \mu\text{A}$ | 0.75 | | 1.6 | — |
| | | $V_{CE} = 4 \text{ V}, I_C = 5 \text{ mA}$ | | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$ | | | 0.5 | V |
| Transition frequency | f_T | $V_{CE} = 4 \text{ V}, I_E = -5 \text{ mA}, f = 200 \text{ MHz}$ | 1.4 | 1.9 | 2.7 | GHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ | | 1.4 | | pF |
| Reverse transfer capacitance (Common base) | C_{rb} | $V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ | | 0.45 | | pF |
| Collector-base parameter | $\Gamma_{bb}' \cdot C_C$ | $V_{CB} = 4 \text{ V}, I_E = -5 \text{ mA}, f = 31.9 \text{ MHz}$ | | 11 | | ps |

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



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