

2SB0970 (2SB970)

Silicon PNP epitaxial planar type

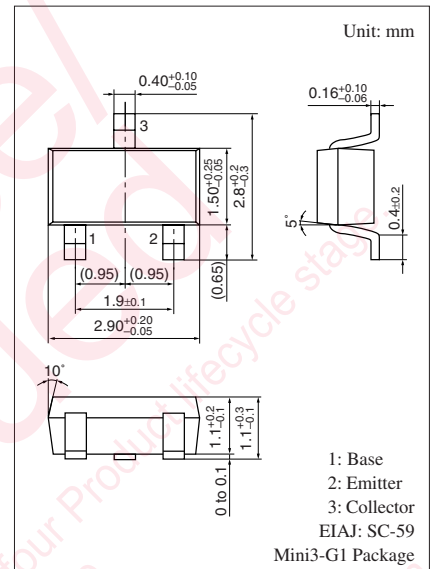
For low-voltage output amplification

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- 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} | -7 | V |
| Collector current | I_C | -0.5 | A |
| Peak collector current | I_{CP} | -1 | A |
| Collector power dissipation | P_C | 200 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



Marking Symbol: 1R

■ 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} | $I_C = -10 \mu\text{A}$, $I_E = 0$ | -15 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = -1 \text{ mA}$, $I_B = 0$ | -10 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = -10 \mu\text{A}$, $I_C = 0$ | -7 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = -10 \text{ V}$, $I_E = 0$ | | | -100 | nA |
| Forward current transfer ratio *1 | h_{FE1} *2 | $V_{CE} = -2 \text{ V}$, $I_C = -0.5 \text{ A}$ | 130 | | 350 | — |
| | h_{FE2} | $V_{CE} = -2 \text{ V}$, $I_C = -1 \text{ A}$ | 60 | | | — |
| Collector-emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C = -0.4 \text{ A}$, $I_B = -8 \text{ mA}$ | | -0.16 | -0.30 | V |
| Base-emitter saturation voltage *1 | $V_{BE(sat)}$ | $I_C = -0.4 \text{ A}$, $I_B = -8 \text{ mA}$ | | -0.8 | -1.2 | V |
| Transition frequency | f_T | $V_{CB} = -10 \text{ V}$, $I_E = 50 \text{ mA}$, $f = 200 \text{ MHz}$ | | 130 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = -10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$ | | 22 | | pF |

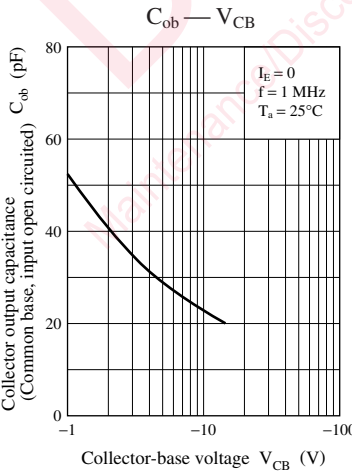
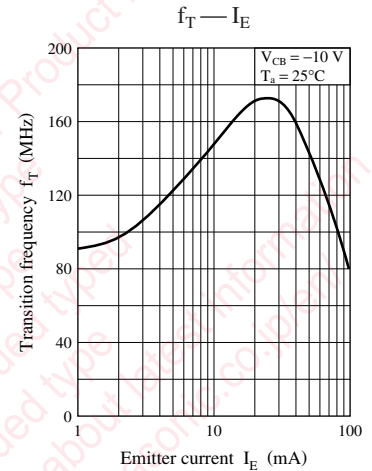
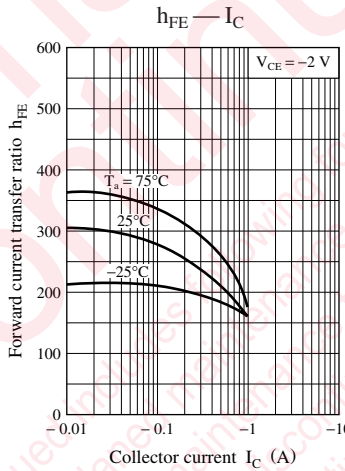
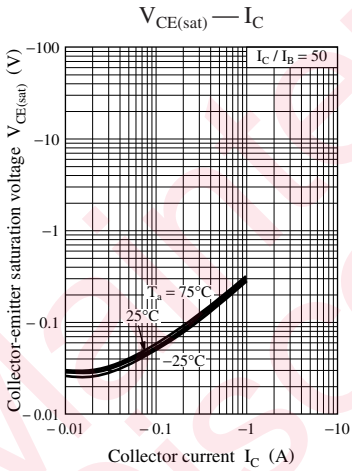
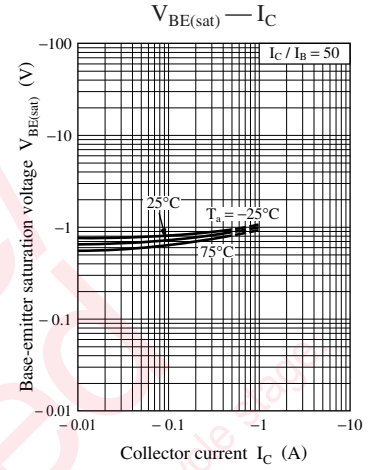
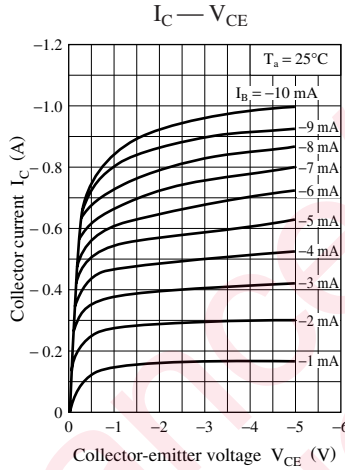
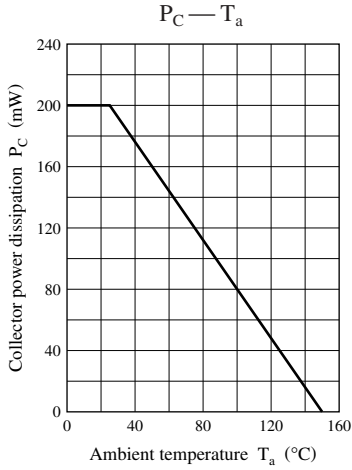
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement

*2: Rank classification

| Rank | R | S |
|-----------|------------|------------|
| h_{FE1} | 130 to 220 | 180 to 350 |

Note) The part number in the parenthesis shows conventional part number.



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