

2SA1309A

Silicon PNP epitaxial planar type

For low-frequency amplification

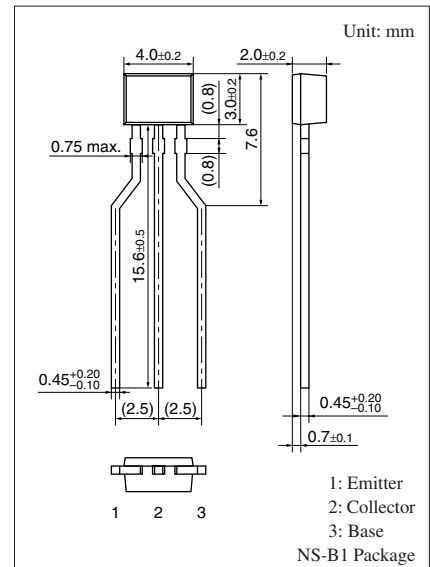
Complementary to 2SC3311A

■ Features

- High forward current transfer ratio h_{FE}
- Allowing supply with the radial taping
- Optimum for high-density mounting

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

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | -60 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | -50 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | -7 | V |
| Collector current | I_C | -100 | mA |
| Peak collector current | I_{CP} | -200 | mA |
| Collector power dissipation | P_C | 300 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



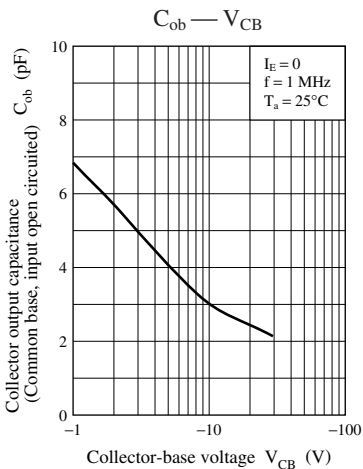
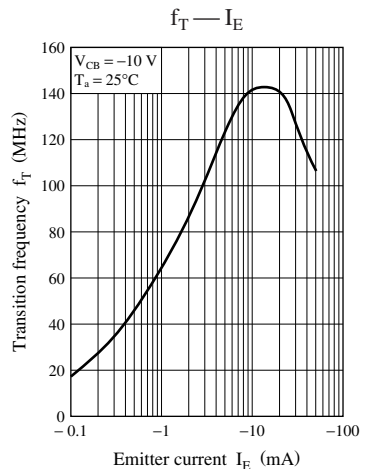
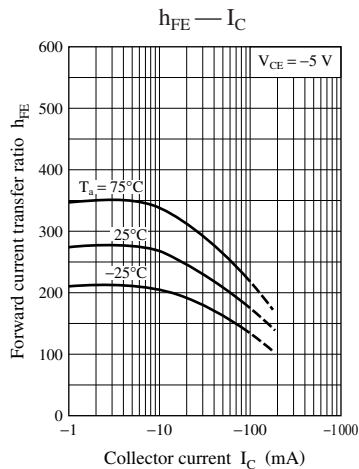
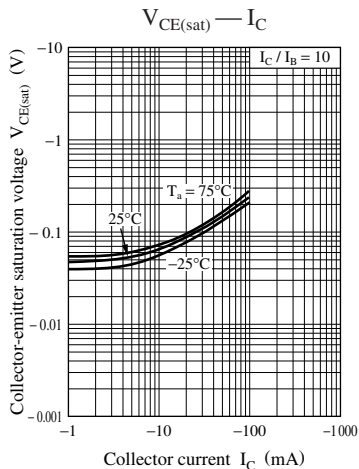
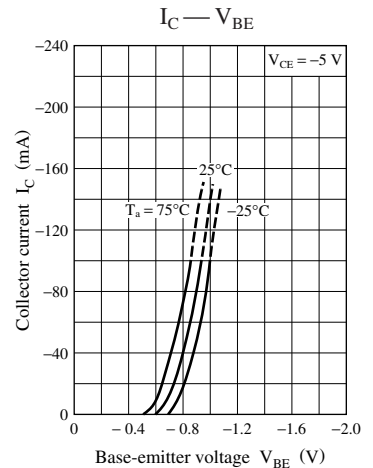
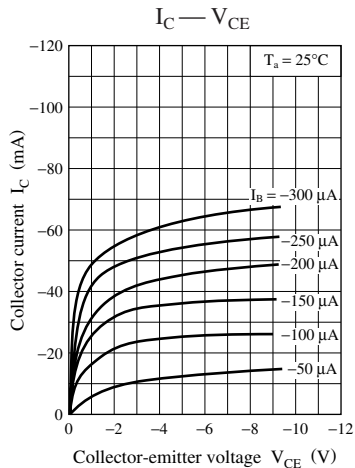
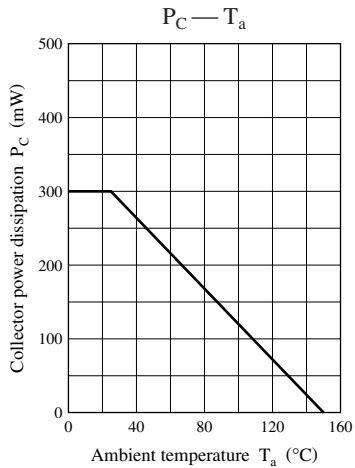
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|--|---------------|---|-----|-----|------|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = -10 \mu\text{A}$, $I_E = 0$ | -60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = -2 \text{ mA}$, $I_B = 0$ | -50 | | | 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 |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = -10 \text{ V}$, $I_B = 0$ | | | -1 | μA |
| Forward current transfer ratio * | h_{FE} | $V_{CE} = -10 \text{ V}$, $I_C = -2 \text{ mA}$ | 160 | | 460 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -50 \text{ mA}$, $I_B = -5 \text{ mA}$ | | | -0.3 | V |
| Transition frequency | f_T | $V_{CB} = -10 \text{ V}$, $I_E = 1 \text{ mA}$, $f = 200 \text{ MHz}$ | | 80 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = -10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$ | | 3.5 | | pF |

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

2. *: Rank classification

| Rank | Q | R | S | No rank |
|----------|------------|------------|------------|------------|
| h_{FE} | 160 to 260 | 210 to 340 | 290 to 460 | 160 to 460 |



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