

2SD0592A (2SD592A)

Silicon NPN epitaxial planar type

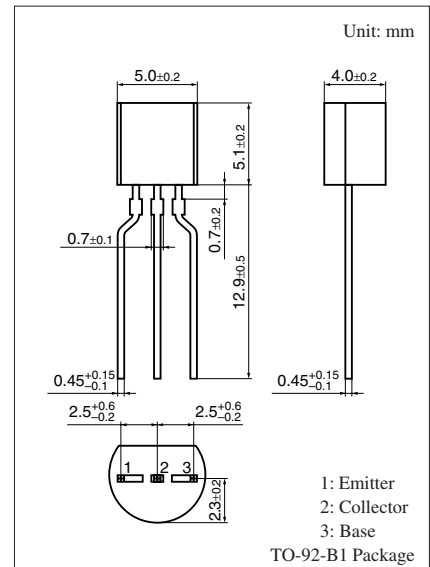
For low-frequency output amplification
Complementary to 2SB0621A (2SB621A)

■ Features

- Large collector power dissipation P_C
- Low collector-emitter saturation voltage $V_{CE(sat)}$

■ 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} | 5 | V |
| Collector current | I_C | 1 | A |
| Peak collector current | I_{CP} | 1.5 | A |
| Collector power dissipation | P_C | 750 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



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

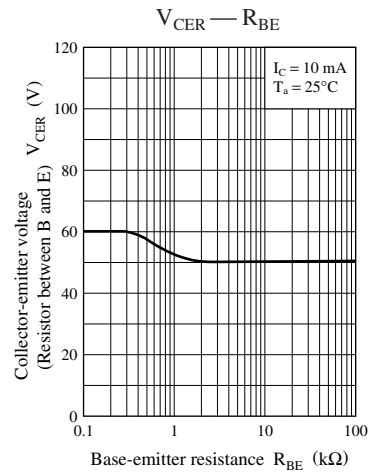
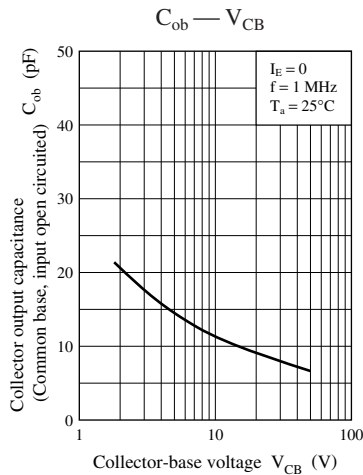
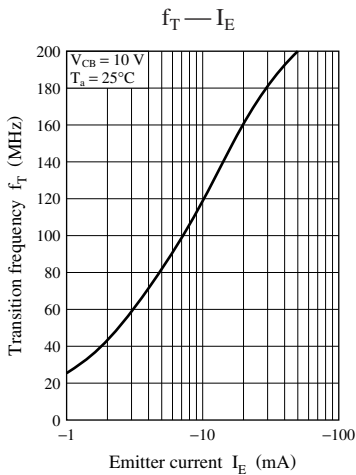
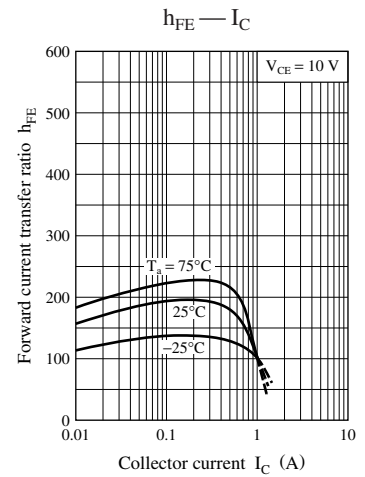
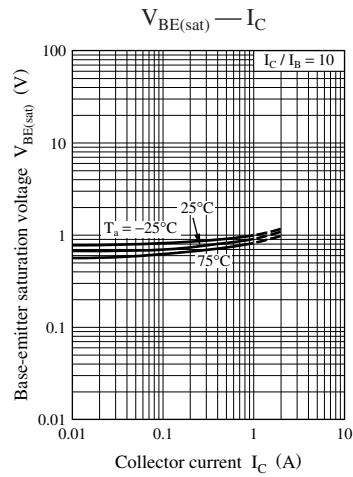
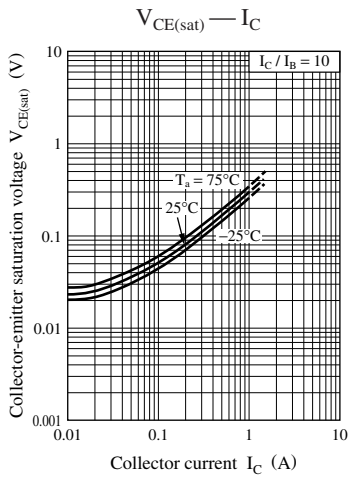
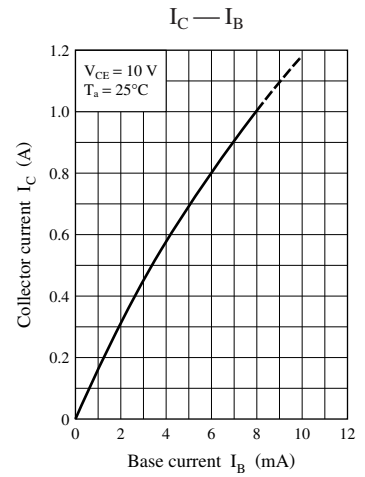
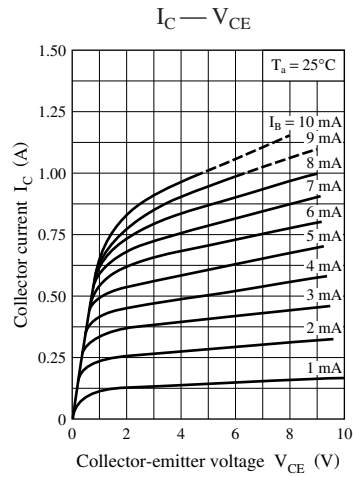
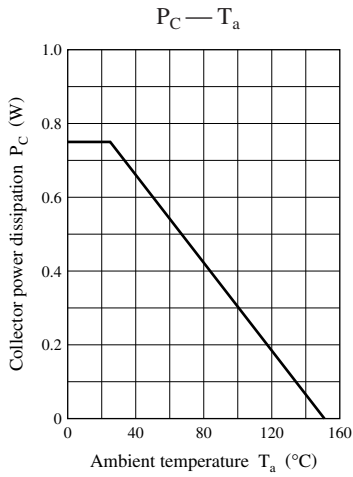
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|--|-----|------|------|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 10 \mu\text{A}$, $I_E = 0$ | 60 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 2 \text{ mA}$, $I_B = 0$ | 50 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 10 \mu\text{A}$, $I_C = 0$ | 5 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 20 \text{ V}$, $I_E = 0$ | | | 0.1 | μA |
| Forward current transfer ratio | h_{FE1}^* | $V_{CE} = 10 \text{ V}$, $I_C = 500 \text{ mA}$ | 85 | | 340 | — |
| | h_{FE2} | $V_{CE} = 5 \text{ V}$, $I_C = 1 \text{ A}$ | 50 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$ | | 0.2 | 0.4 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$ | | 0.85 | 1.20 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}$, $I_E = -50 \text{ mA}$, $f = 200 \text{ MHz}$ | | 200 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$ | | | 20 | pF |

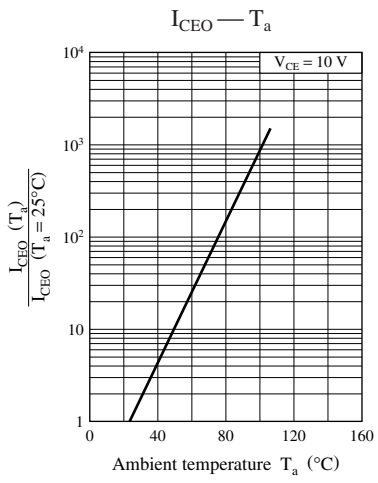
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

| Rank | Q | R | S |
|-----------|-----------|------------|------------|
| h_{FE1} | 85 to 170 | 120 to 240 | 170 to 340 |

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





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