

2SB1699

Silicon PNP epitaxial planar type

For power amplification

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Mini Power 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} | -60 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | -60 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | -6 | V |
| Collector current | I_C | -2 | A |
| Peak collector current | I_{CP} | -4 | A |
| Collector power dissipation * | P_C | 1 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

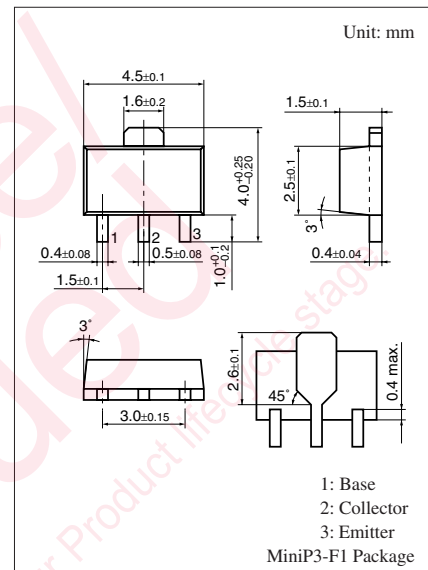
Note) *: Print circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

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

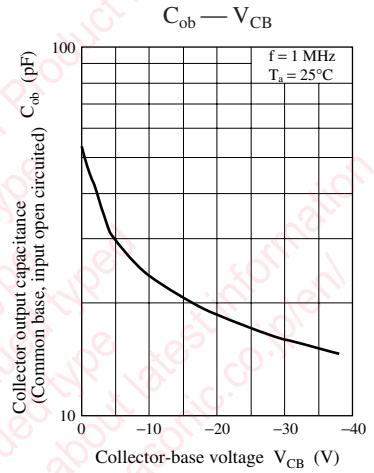
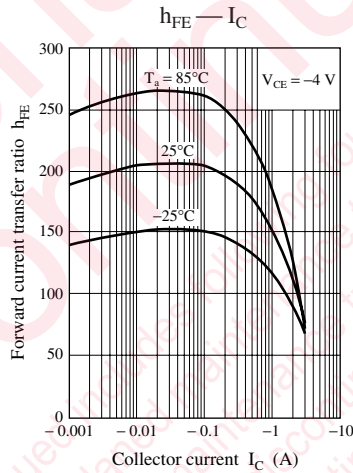
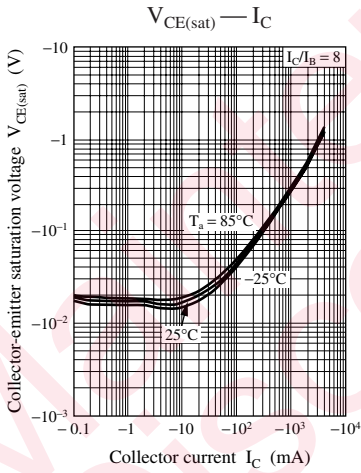
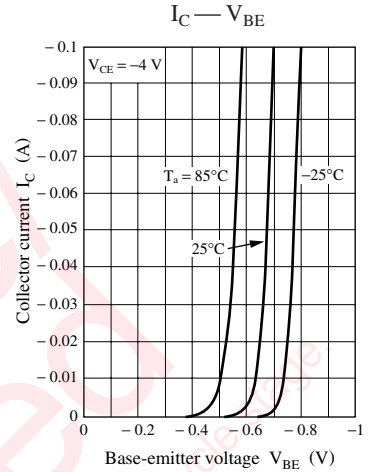
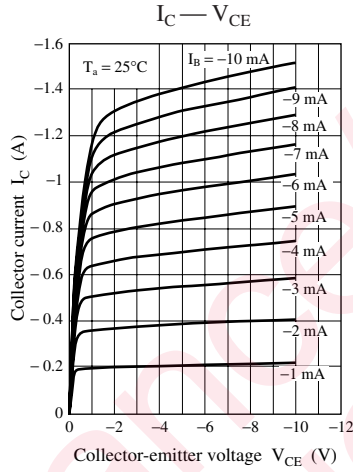
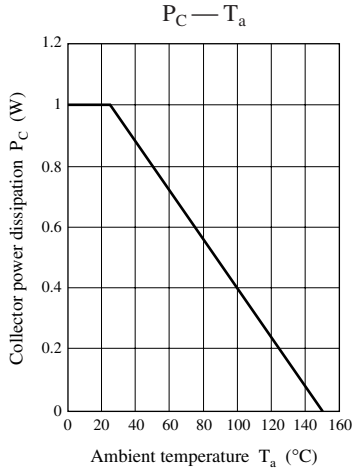
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|-----|------|---------------|
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = -1\text{ mA}$, $I_B = 0$ | -60 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = -60\text{ V}$, $I_E = 0$ | | | -100 | μA |
| Collector-emitter cut-off current (Base open) | I_{CEO} | $V_{CE} = -60\text{ V}$, $I_B = 0$ | | | -100 | μA |
| Forward current transfer ratio * | h_{FE1} | $V_{CE} = -4\text{ V}$, $I_C = -1\text{ A}$ | 80 | | 250 | — |
| | h_{FE2} | $V_{CE} = -4\text{ V}$, $I_C = -0.2\text{ A}$ | 60 | | | |
| | h_{FE3} | $V_{CE} = -4\text{ V}$, $I_C = -2\text{ A}$ | 30 | | | |
| Collector-emitter saturation voltage * | $V_{CE(sat)}$ | $I_C = -2\text{ A}$, $I_B = -250\text{ mA}$ | | | -0.5 | V |
| Turn-on time | t_{on} | $I_C = -1\text{ A}$, $I_{B1} = 0.1\text{ A}$ | | 0.2 | | μs |
| Storage time | t_{stg} | $I_{B2} = -0.1\text{ A}$, $V_{CC} = -50\text{ V}$ | | 0.4 | | μs |
| Fall time | t_f | | | 0.1 | | μs |
| Transition frequency | f_T | $V_{CB} = -10\text{ V}$, $I_E = 50\text{ mA}$, $f = 200\text{ MHz}$ | | 180 | | MHz |

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

2. *: Pulse measurement



Marking Symbol: 3A



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