

2SB1169, 2SB1169A

Silicon PNP epitaxial planar type

For power amplification

■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

| Parameter | Symbol | Rating | Unit | |
|--|-----------|--------------------------|------------------|---|
| Collector-base voltage (Emitter open) | 2SB1169 | V_{CBO} | -60 | V |
| | 2SB1169A | | -80 | |
| Collector-emitter voltage (Base open) | 2SB1169 | V_{CEO} | -60 | V |
| | 2SB1169A | | -80 | |
| Emitter-base voltage (Collector open) | V_{EBO} | -5 | V | |
| Collector current | I_C | -1 | A | |
| Peak collector current | I_{CP} | -2 | A | |
| Collector power dissipation | P_C | | 15 | W |
| | | $T_a = 25^\circ\text{C}$ | 1.3 | |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ | |
| Storage temperature | T_{stg} | -55 ~ +150 | $^\circ\text{C}$ | |

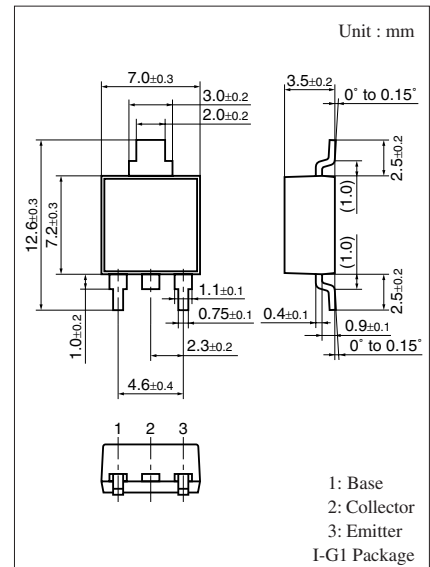
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|-----|------|---------------|
| Collector-emitter voltage (Base open) | 2SB1169 | $I_C = -30 \text{ mA}, I_B = 0$ | -60 | | | V |
| | 2SB1169A | | -80 | | | |
| Base-emitter voltage | V_{BE} | $V_{CE} = -4 \text{ V}, I_C = -1 \text{ A}$ | | | -1.3 | V |
| Collector-emitter cutoff current (E-B short) | 2SB1169 | $V_{CE} = -60 \text{ V}, V_{BE} = 0$ | | | -200 | μA |
| | 2SB1169A | $V_{CE} = -80 \text{ V}, V_{BE} = 0$ | | | -200 | |
| Collector-emitter cutoff current (Base open) | 2SB1169 | $V_{CE} = -30 \text{ V}, I_B = 0$ | | | -300 | μA |
| | 2SB1169A | $V_{CE} = -60 \text{ V}, I_B = 0$ | | | -300 | |
| Emitter-base cutoff current (Collector open) | I_{EBO} | $V_{EB} = -5 \text{ V}, I_C = 0$ | | | -1 | mA |
| Forward current transfer ratio | h_{FE1}^* | $V_{CE} = -4 \text{ V}, I_C = -0.2 \text{ A}$ | 40 | | 450 | — |
| | h_{FE2} | $V_{CE} = -4 \text{ V}, I_C = -1 \text{ A}$ | 15 | | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -1 \text{ A}, I_B = -0.125 \text{ A}$ | | | -1 | V |
| Transition frequency | f_T | $V_{CE} = -10 \text{ V}, I_C = -0.5 \text{ A}, f = 10 \text{ MHz}$ | | 40 | | MHz |
| Turn-on time | t_{on} | $I_C = -1 \text{ A}, I_{B1} = -50 \text{ mA}, I_{B2} = 50 \text{ mA}$ | | 0.5 | | μs |
| Storage time | t_{stg} | $V_{CC} = -50 \text{ V}$ | | 1.2 | | μs |
| Fall time | t_f | | | 0.3 | | μs |

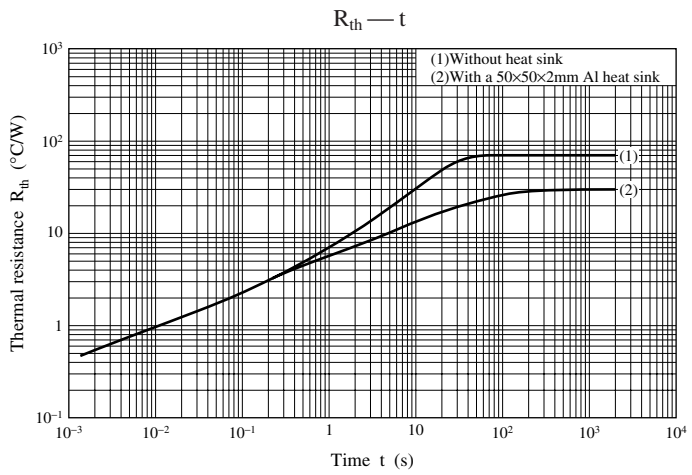
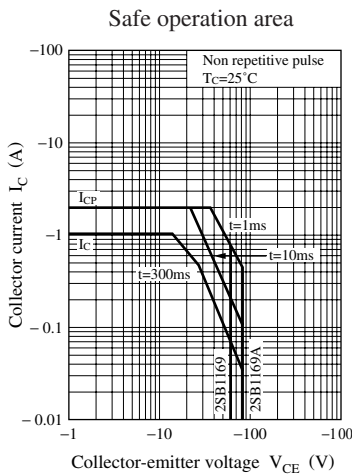
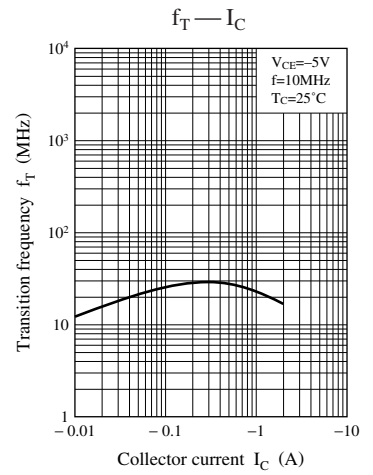
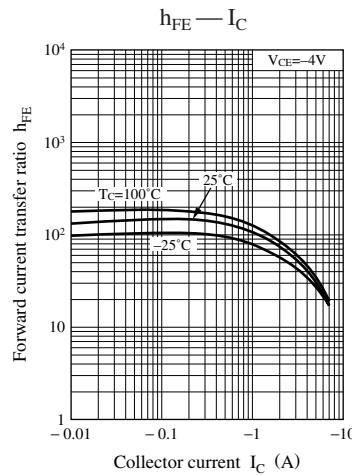
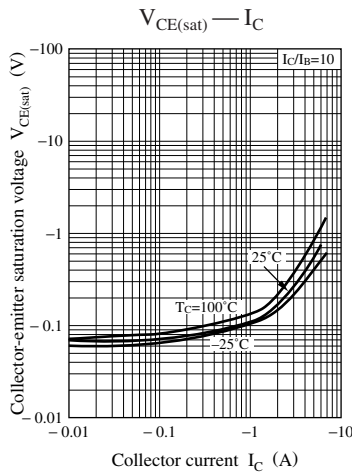
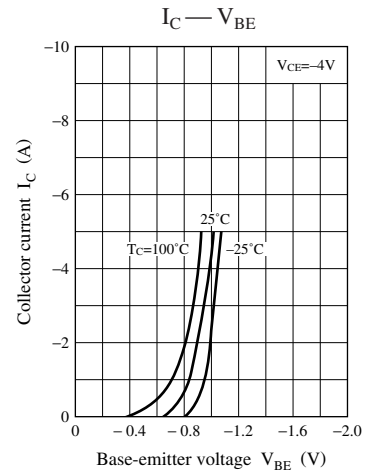
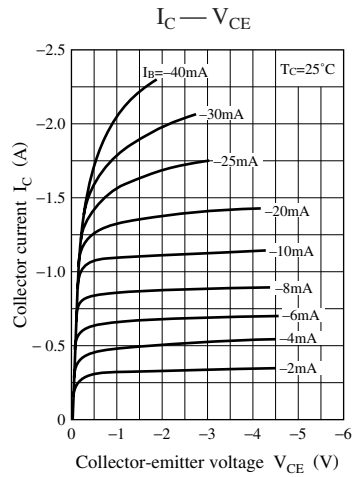
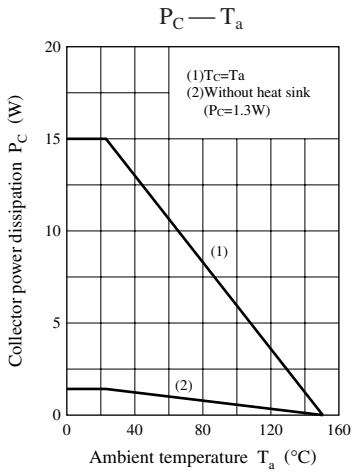
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

| Rank | R | Q | P | O |
|-----------|----------|-----------|------------|------------|
| h_{FE1} | 40 to 90 | 70 to 150 | 120 to 250 | 200 to 450 |



Note) Self-supported type package is also prepared.



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