

2SB819

Silicon PNP epitaxial planer type

For low-frequency output amplification

Complementary to 2SD1051

Features

- High collector to emitter voltage V_{CEO} .
- Large collector power dissipation P_C .
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Ratings | Unit |
|------------------------------|-----------|------------|------|
| Collector to base voltage | V_{CBO} | -50 | V |
| Collector to emitter voltage | V_{CEO} | -40 | V |
| Emitter to base voltage | V_{EBO} | -5 | V |
| Peak collector current | I_{CP} | -3 | A |
| Collector current | I_C | -1.5 | A |
| Collector power dissipation | P_C^* | 1 | W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 ~ +150 | °C |

* Printed circuit board: Copper foil area of 1cm² or more, and the board thickness of 1.7mm for the collector portion

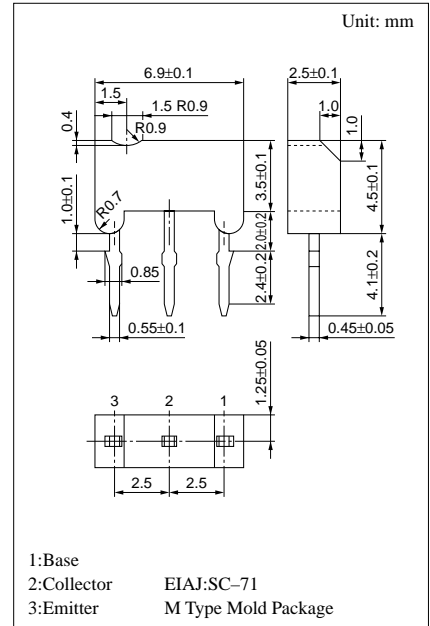
Electrical Characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---------------|--|-----|-----|------|------|
| Collector cutoff current | I_{CBO} | $V_{CB} = -20V, I_E = 0$ | | | -1 | μA |
| | I_{CEO} | $V_{CE} = -10V, I_B = 0$ | | | -100 | μA |
| Emitter cutoff current | I_{EBO} | $V_{EB} = -5V, I_C = 0$ | | | -10 | μA |
| Collector to base voltage | V_{CBO} | $I_C = -1mA, I_E = 0$ | -50 | | | V |
| Collector to emitter voltage | V_{CEO} | $I_C = -2mA, I_B = 0$ | -40 | | | V |
| Forward current transfer ratio | h_{FE}^{*1} | $V_{CE} = -5V, I_C = -1A^{*2}$ | 80 | | 220 | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -1.5A, I_B = -0.15A^{*2}$ | | | -1 | V |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | $I_C = -2A, I_B = -0.2A^{*2}$ | | | -1.5 | V |
| Transition frequency | f_T | $V_{CB} = -5V, I_E = 0.5A, f = 200MHz$ | | 150 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -20V, I_E = 0, f = 1MHz$ | | 45 | | pF |

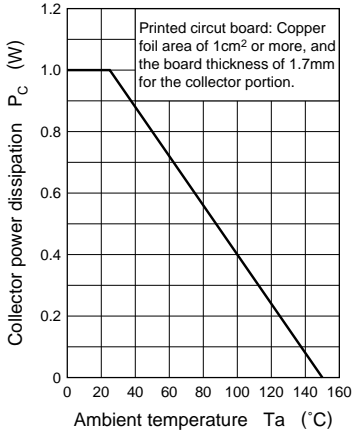
^{*2} Pulse measurement

^{*1} h_{FE} Rank classification

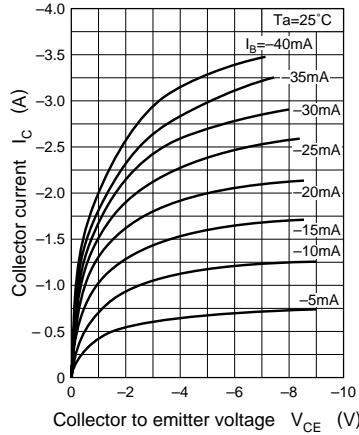
| Rank | Q | R |
|----------|----------|-----------|
| h_{FE} | 80 ~ 160 | 120 ~ 220 |



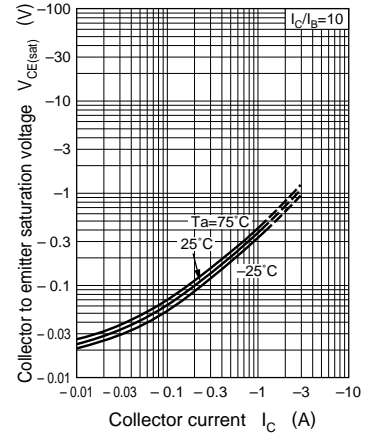
$P_C - T_a$



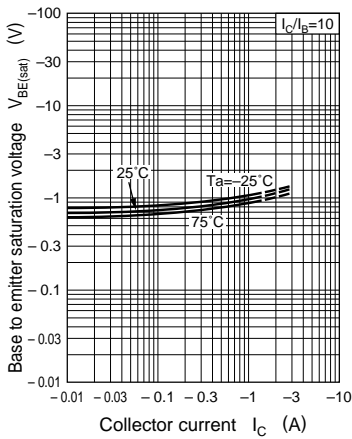
$I_C - V_{CE}$



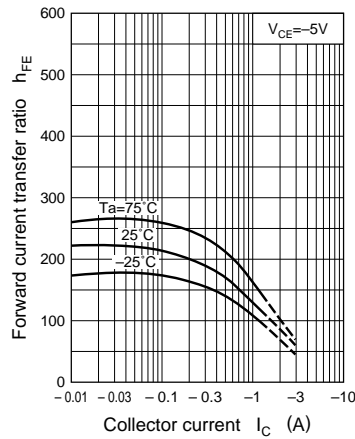
$V_{CE(sat)} - I_C$



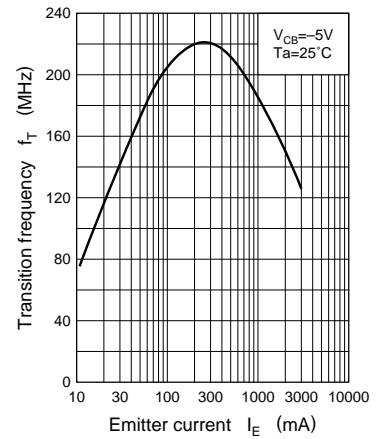
$V_{BE(sat)} - I_C$



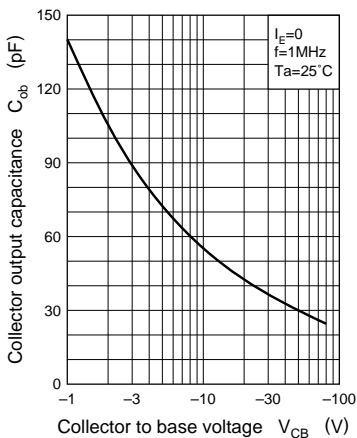
$h_{FE} - I_C$



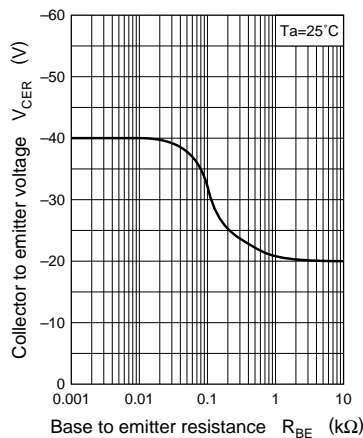
$f_T - I_E$



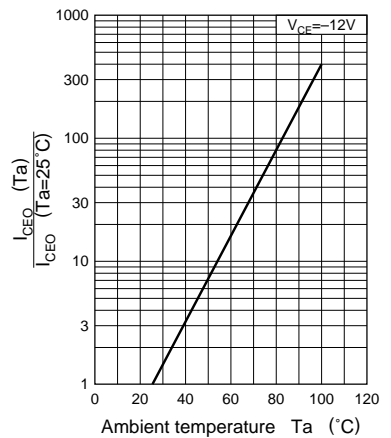
$C_{ob} - V_{CB}$



$V_{CER} - R_{BE}$



$I_{CEO} - T_a$



Area of safe operation (ASO)

