

2SD1823

Silicon NPN epitaxial planar type

For low-frequency amplification

■ Features

- High forward current transfer ratio h_{FE}
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- High emitter-base voltage (Collector open) V_{EBO}
- Low noise voltage NV
- S-Mini 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} | 50 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 40 | V |
| Emitter-base voltage (Collector open) | V_{EBO} | 15 | V |
| Collector current | I_C | 50 | mA |
| Peak collector current | I_{CP} | 100 | mA |
| Collector power dissipation | P_C | 150 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |

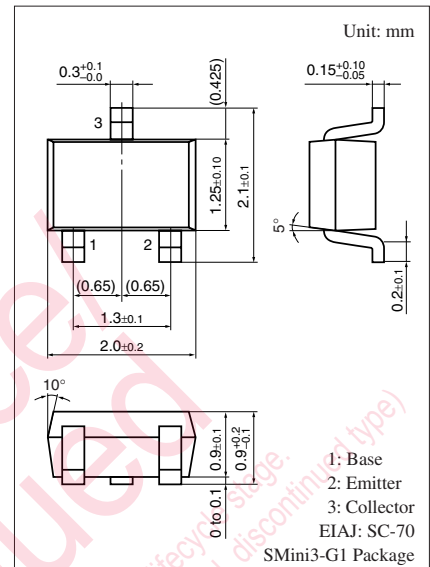
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|----------------------------------------------|---------------|-------------------------------------------------------------------|-----|------|------|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 10 \mu\text{A}, I_E = 0$ | 50 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 1 \text{ mA}, I_B = 0$ | 40 | | | V |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 10 \mu\text{A}, I_C = 0$ | 15 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 20 \text{ V}, I_E = 0$ | | | 0.1 | μA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = 20 \text{ V}, I_B = 0$ | | | 1 | μA |
| Forward current transfer ratio * | h_{FE} | $V_{CE} = 10 \text{ V}, I_C = 2 \text{ mA}$ | 400 | | 2000 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$ | | 0.05 | 0.20 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}, I_E = -2 \text{ mA}, f = 200 \text{ MHz}$ | | 120 | | MHz |

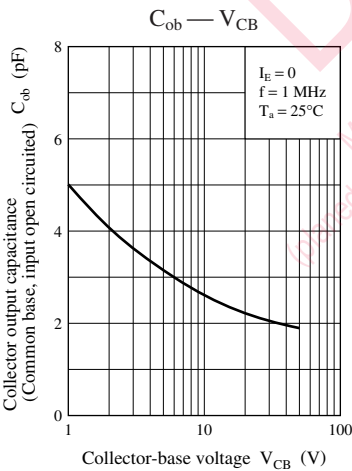
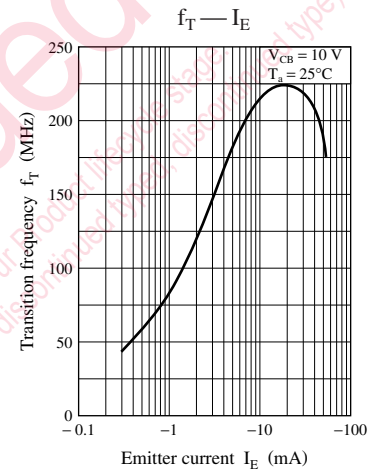
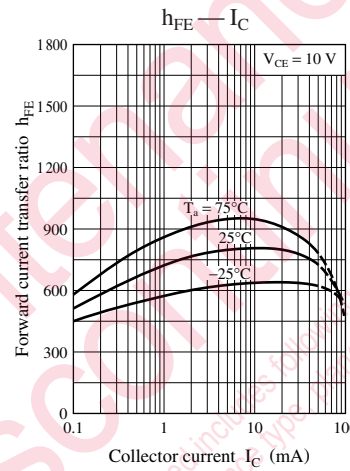
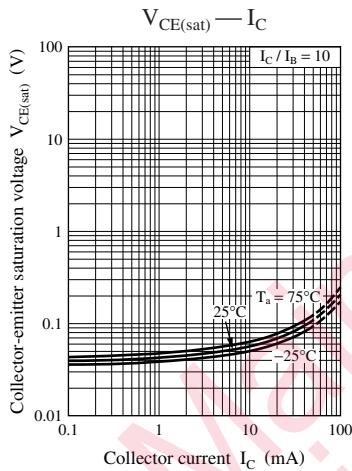
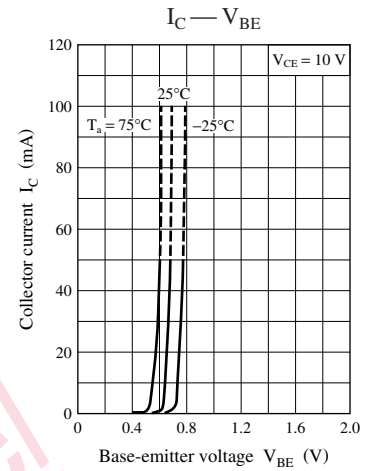
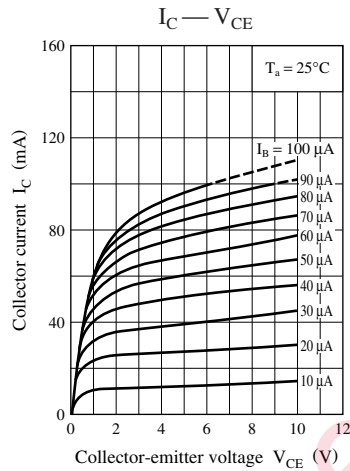
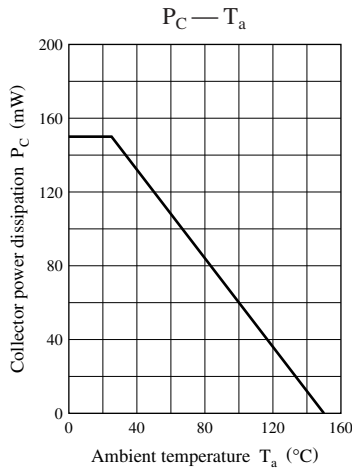
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *: Rank classification

| Rank | R | S | T |
|----------|------------|--------------|----------------|
| h_{FE} | 400 to 800 | 600 to 1 200 | 1 000 to 2 000 |



Marking symbol: 1Z



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