

2SC1518

Silicon NPN epitaxial planar type

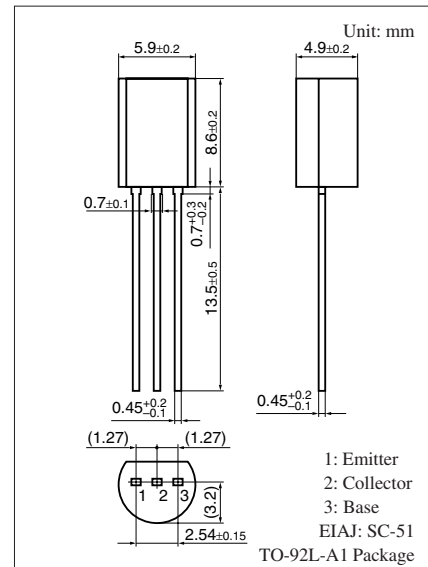
For high-frequency bias oscillation of tape recorders
For DC-DC converter

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Satisfactory operation performances and high efficiency with a low-voltage power supply

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

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | V_{CBO} | 25 | V |
| Collector-emitter voltage (Base open) | V_{CEO} | 20 | 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 | 1 | W |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



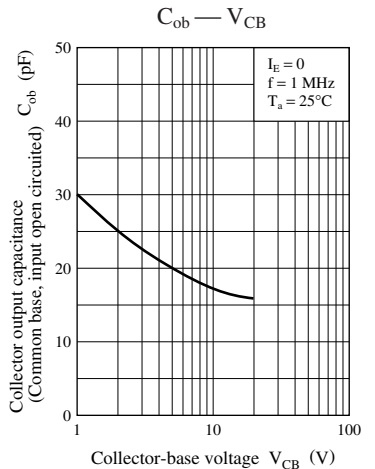
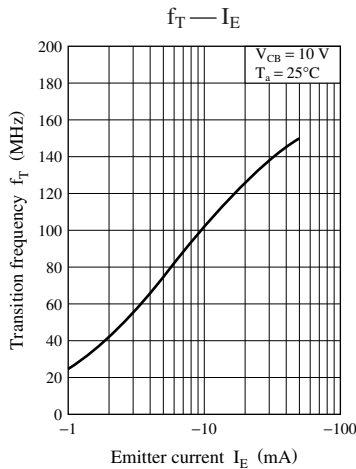
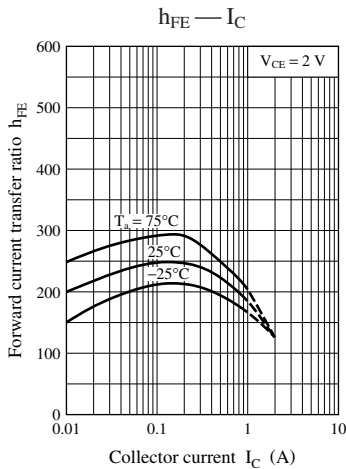
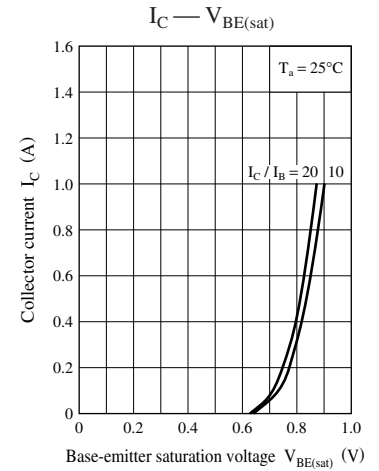
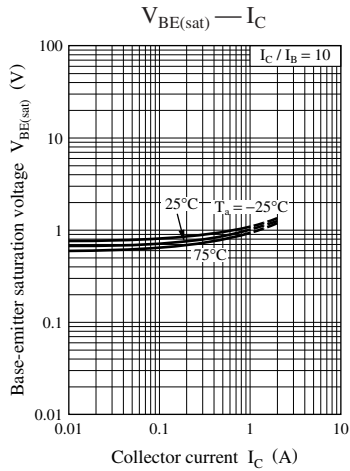
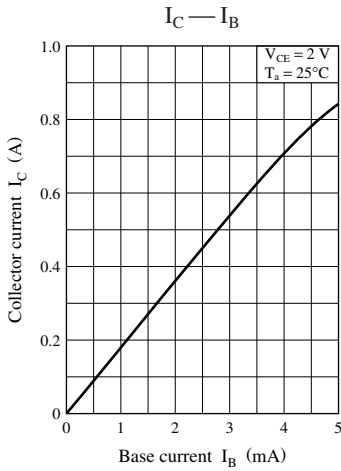
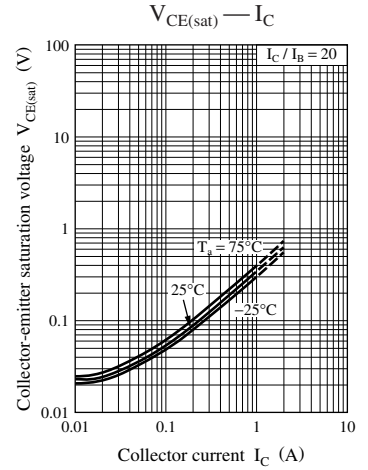
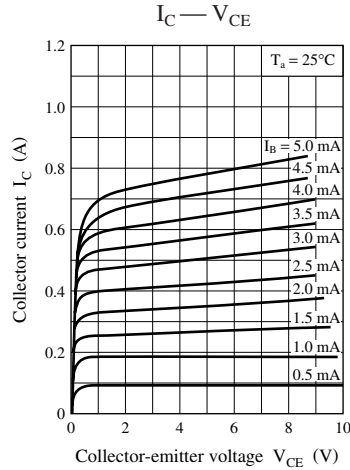
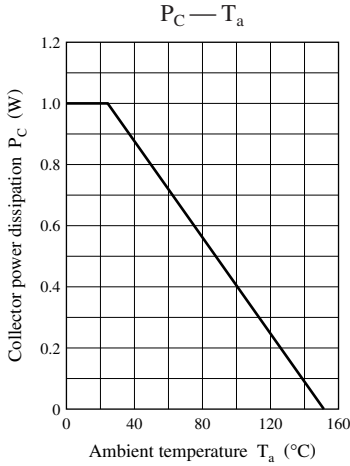
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

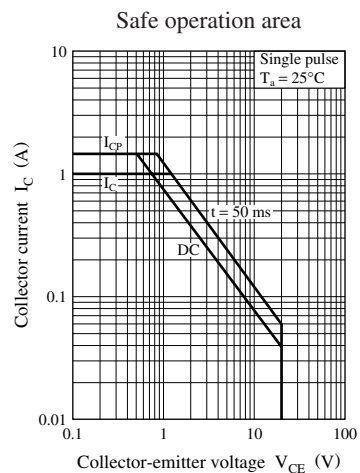
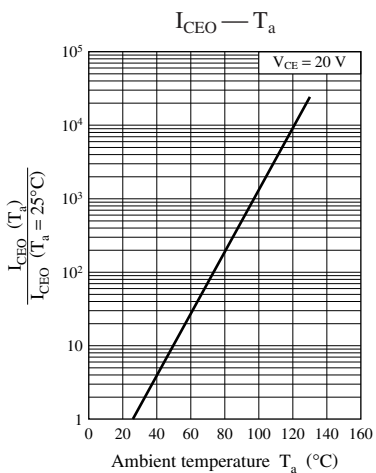
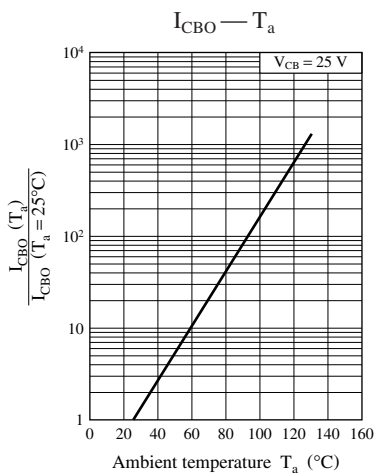
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|--|-----|-----|-----|---------------|
| Collector-base voltage (Emitter open) | V_{CBO} | $I_C = 10 \mu\text{A}$, $I_E = 0$ | 25 | | | V |
| Collector-emitter voltage (Base open) | V_{CEO} | $I_C = 1 \text{ mA}$, $I_B = 0$ | 20 | | | 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} | $V_{CB} = 25 \text{ V}$, $I_E = 0$ | | | 100 | nA |
| Collector-emitter cutoff current (Base open) | I_{CEO} | $V_{CE} = 20 \text{ V}$, $I_B = 0$ | | | 1 | μA |
| Forward current transfer ratio | h_{FE1}^* | $V_{CE} = 2 \text{ V}$, $I_C = 500 \text{ mA}$ | 90 | | 330 | — |
| | h_{FE2} | $V_{CE} = 2 \text{ V}$, $I_C = 1 \text{ A}$ | 50 | 100 | | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$ | | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 500 \text{ mA}$, $I_B = 50 \text{ mA}$ | | | 1.2 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{ V}$, $I_E = -50 \text{ mA}$, $f = 200 \text{ MHz}$ | | 150 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$ | | 12 | 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} | 90 to 155 | 130 to 220 | 185 to 330 |





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