

2SC1317, 2SC1318

Silicon NPN epitaxial planar type

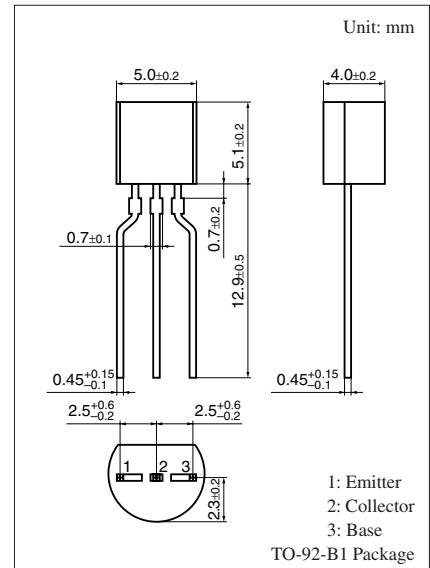
For low-frequency power amplification and driver amplification
Complementary to 2SA0719 and 2SA0720

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Complementary pair with 2SA0719 and 2SA0720

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

| Parameter | Symbol | Rating | Unit |
|--|-----------|-------------|------------------|
| Collector-base voltage (Emitter open) | 2SC1317 | 30 | V |
| | 2SC1318 | 60 | |
| Collector-emitter voltage (Base open) | 2SC1317 | 25 | V |
| | 2SC1318 | 50 | |
| Emitter-base voltage (Collector open) | V_{EBO} | 7 | V |
| Collector current | I_C | 0.5 | A |
| Peak collector current | I_{CP} | 1 | A |
| Collector power dissipation | P_C | 625 | mW |
| Junction temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |



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

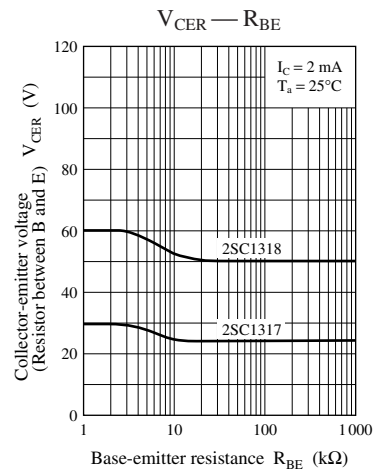
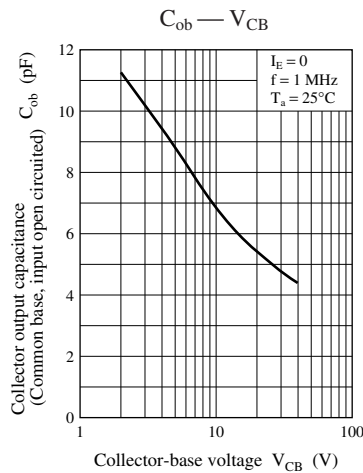
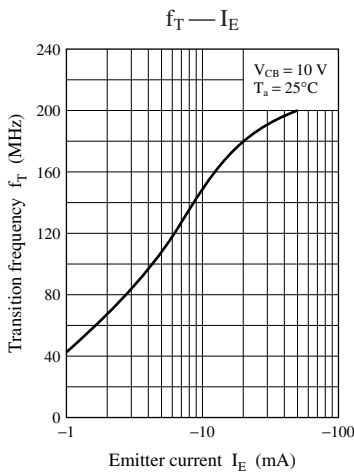
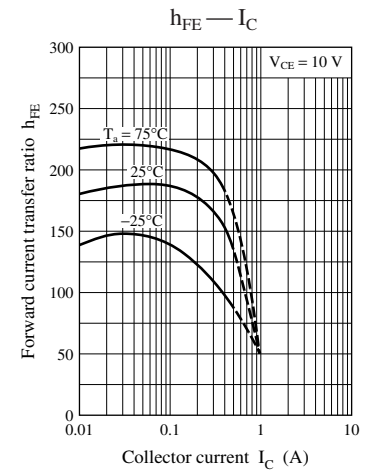
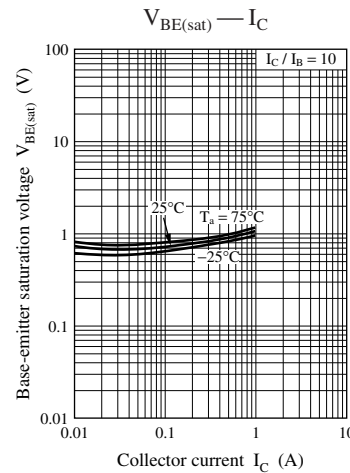
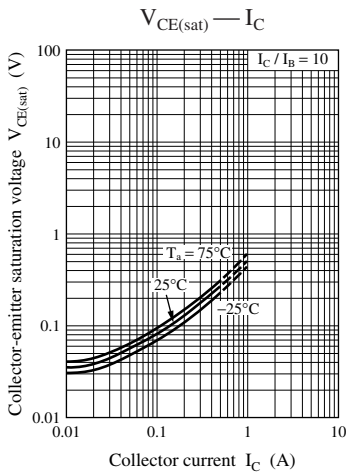
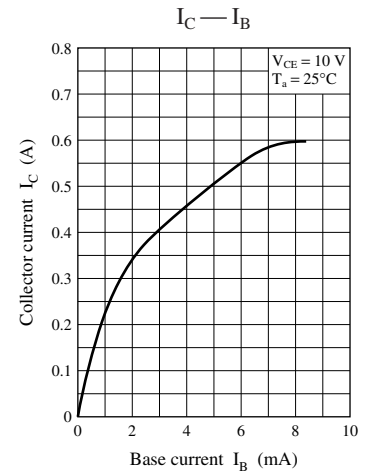
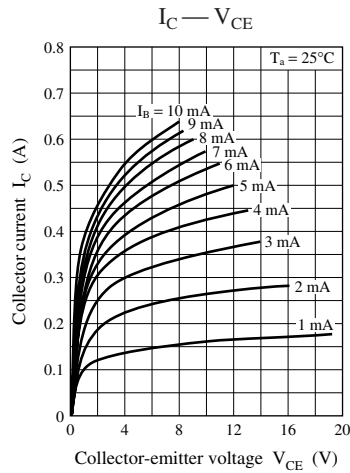
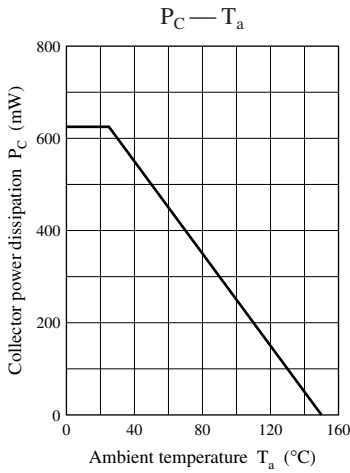
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|---|-----|------|------|---------------|
| Collector-base voltage (Emitter open) | 2SC1317 | $I_C = 10 \mu\text{A}, I_E = 0$ | 30 | | | V |
| | 2SC1318 | | 60 | | | |
| Collector-emitter voltage (Base open) | 2SC1317 | $I_C = 10 \text{mA}, I_B = 0$ | 25 | | | V |
| | 2SC1318 | | 50 | | | |
| Emitter-base voltage (Collector open) | V_{EBO} | $I_E = 10 \mu\text{A}, I_C = 0$ | 7 | | | V |
| Collector-base cutoff current (Emitter open) | I_{CBO} | $V_{CB} = 20 \text{V}, I_E = 0$ | | | 0.1 | μA |
| Forward current transfer ratio *1 | h_{FE1} *2 | $V_{CE} = 10 \text{V}, I_C = 150 \text{mA}$ | 85 | | 340 | — |
| | h_{FE2} | $V_{CE} = 10 \text{V}, I_C = 500 \text{mA}$ | 40 | | | — |
| Collector-emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C = 300 \text{mA}, I_B = 30 \text{mA}$ | | 0.35 | 0.60 | V |
| Base-emitter saturation voltage *1 | $V_{BE(sat)}$ | $I_C = 300 \text{mA}, I_B = 30 \text{mA}$ | | 1.1 | 1.5 | V |
| Transition frequency | f_T | $V_{CB} = 10 \text{V}, I_E = -50 \text{mA}, f = 200 \text{MHz}$ | | 200 | | MHz |
| Collector output capacitance (Common base, input open circuited) | C_{ob} | $V_{CB} = 10 \text{V}, I_E = 0, f = 1 \text{MHz}$ | | 6 | 15 | pF |

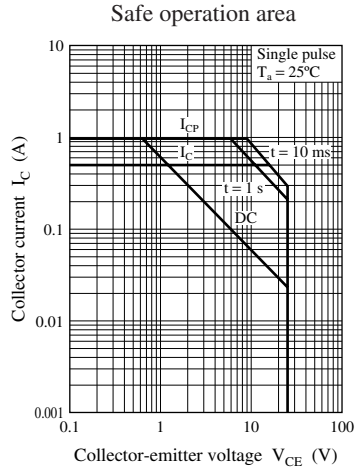
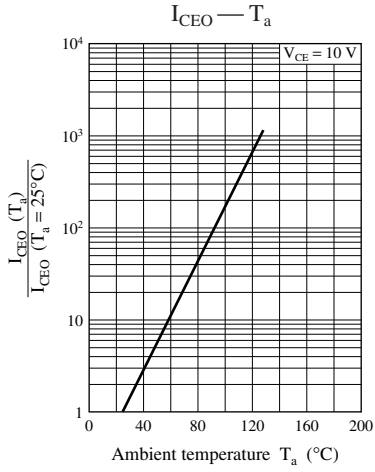
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Pulse measurement

*2: Rank classification

| Rank | Q | R | S |
|-----------|-----------|------------|------------|
| h_{FE1} | 85 to 170 | 120 to 240 | 170 to 340 |





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