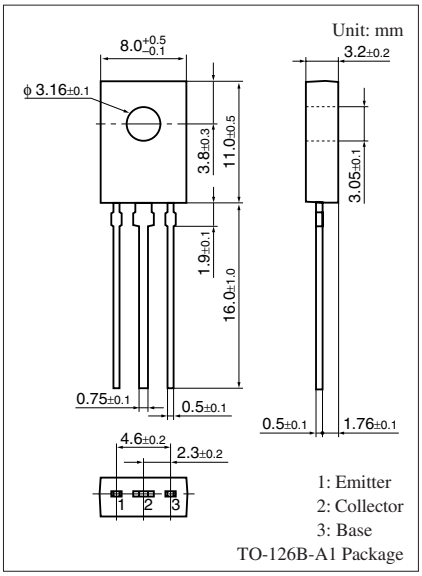
# 2SC1568

## Silicon NPN epitaxial planar type

For low-voltage type medium output power amplification
Complementary to 2SA0900




### ■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Satisfactory operation performances and high efficiency with a low-voltage power supply
- TO-126B package which incorporates a unique construction enabling installation to the heat sink without using insulation parts

### ■ Absolute Maximum Ratings $T_a = 25°C$

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 18 | V |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 18 | V |
| 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 | $P_C$ | 1.2 | W |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |

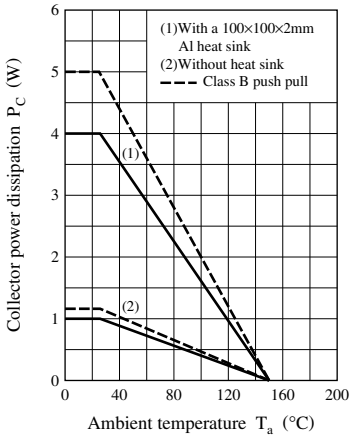
### ■ Electrical Characteristics $T_a = 25°C \pm 3°C$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | $I_C$ = 10 µA, $I_E$ = 0 | 18 | | | V |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | $I_C$ = 1 mA, $I_B$ = 0 | 18 | | | V |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | $I_E$ = 10 µA, $I_C$ = 0 | 5 | | | V |
| Collector-base cutoff current (Emitter open) | $I_{CBO}$ | $V_{CB}$ = 10 V, $I_E$ = 0 | | | 1 | µA |
| Collector-emitter cutoff current (Base open) | $I_{CEO}$ | $V_{CE}$ = 18 V, $I_B$ = 0 | | | 10 | µA |
| Forward current transfer ratio | $h_{FE1}$ * | $V_{CE}$ = 2 V, $I_C$ = 500 mA | 90 | | 280 | — |
| | $h_{FE2}$ | $V_{CE}$ = 2 V, $I_C$ = 1.5 A | 50 | 100 | | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$ = 1 A, $I_B$ = 50 mA | | | 0.5 | V |
| Base-emitter saturation voltage | $V_{BE(sat)}$ | $I_C$ = 500 mA, $I_B$ = 50 mA | | | 1.2 | V |
| Transition frequency | $f_T$ | $V_{CB}$ = 6 V, $I_E$ = −50 mA, f = 200 MHz | | 150 | | MHz |
| Collector output capacitance (Common base, input open circuited) | $C_{ob}$ | $V_{CB}$ = 6 V, $I_E$ = 0, f = 1 MHz | | 12 | | pF |

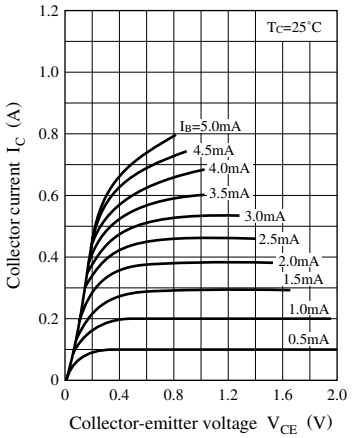
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

| Rank | Q | R | S |
|---|---|---|---|
| $h_{FE1}$ | 90 to 155 | 130 to 210 | 180 to 280 |

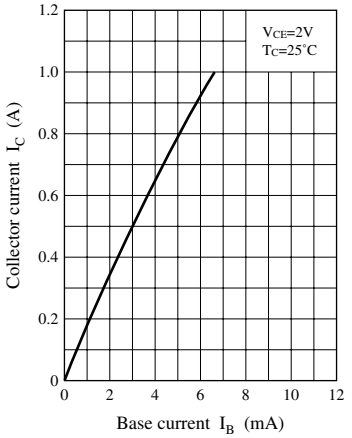
$P_C$ — $T_a$



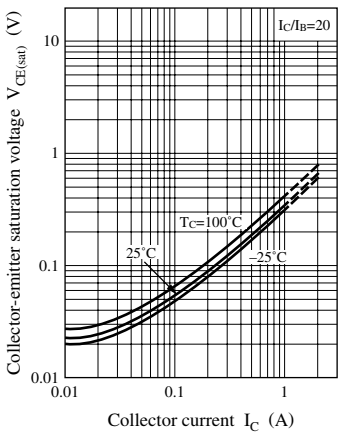

$I_C$ — $V_{CE}$



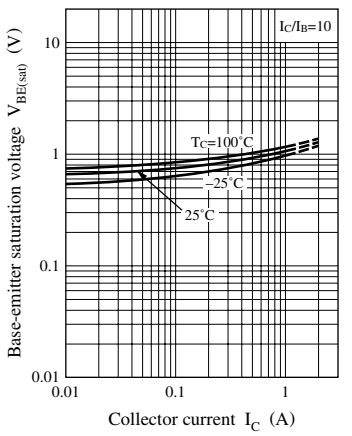

$I_C$ — $I_B$



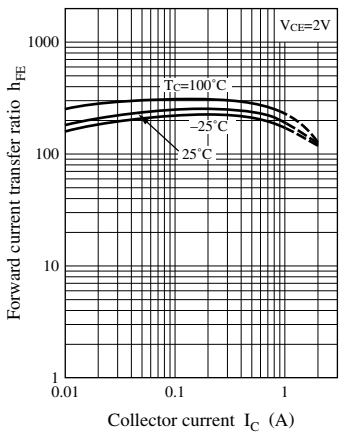

$V_{CE(sat)}$ — $I_C$



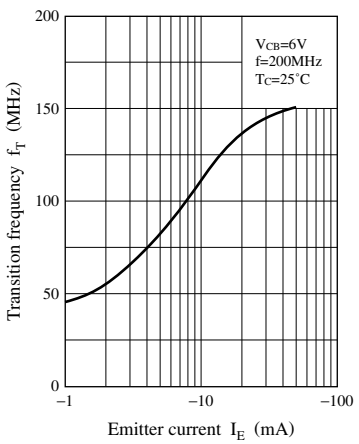

$V_{BE(sat)}$ — $I_C$



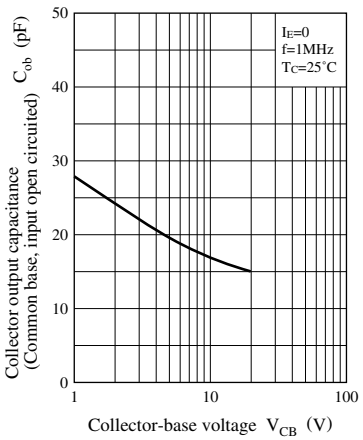

$h_{FE}$ — $I_C$



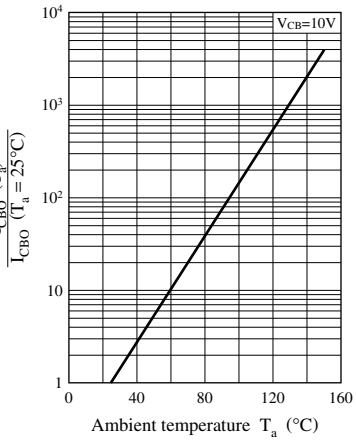

$f_T$ — $I_E$



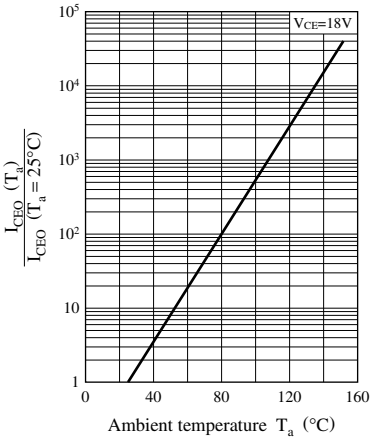

$C_{ob}$ — $V_{CB}$



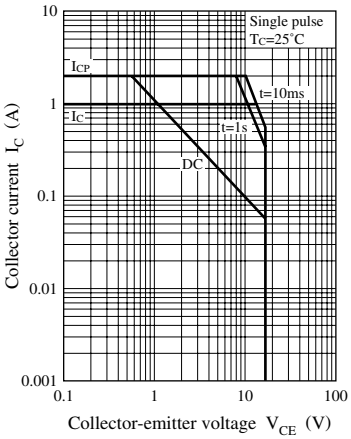

$I_{CBO}$ — $T_a$



$I_{CEO}$ — $T_a$




Safe operation area



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