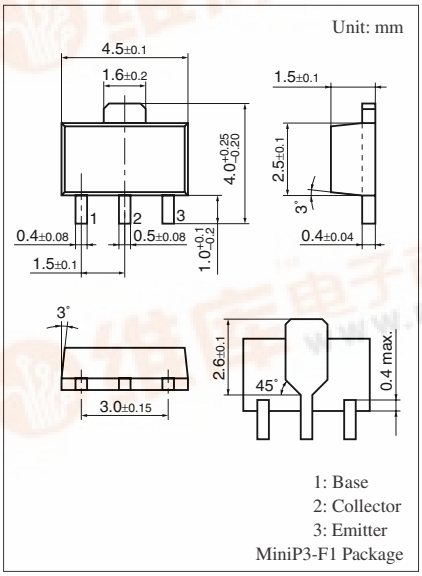
# 2SD0968A (2SD968A)

## Silicon NPN epitaxial planar type

For low-frequency driver amplification
Complementary to 2SB0789A (2SB789A)




Marking Symbol: V

### ■ Features

- High collector-emitter voltage (Base open) $V_{CEO}$
- Large collector power dissipation $P_C$
- Mini power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

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

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-base voltage (Emitter open) | $V_{CBO}$ | 120 | V |
| Collector-emitter voltage (Base open) | $V_{CEO}$ | 120 | V |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | 5 | V |
| Peak collector current | $I_{CP}$ | 1 | A |
| Collector current | $I_C$ | 0.5 | A |
| Collector power dissipation * | $P_C$ | 1 | W |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |

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

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

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-emitter voltage (Base open) | $V_{CEO}$ | $I_C$ = 100 µA, $I_B$ = 0 | 120 | | | V |
| Emitter-base voltage (Collector open) | $V_{EBO}$ | $I_E$ = 10 µA, $I_C$ = 0 | 5 | | | V |
| Forward current transfer ratio *1 | $h_{FE1}$ *2 | $V_{CE}$ = 10 V, $I_C$ = 150 mA | 130 | | 330 | |
| | $h_{FE2}$ | $V_{CE}$ = 5 V, $I_C$ = 500 mA | 50 | | | |
| Collector-emitter saturation voltage *1 | $V_{CE(sat)}$ | $I_C$ = 500 mA, $I_B$ = 50 mA | | 0.2 | 0.6 | V |
| Base-emitter saturation voltage *1 | $V_{BE(sat)}$ | $I_C$ = 500 mA, $I_B$ = 50 mA | | 0.85 | 1.20 | V |
| Transition frequency | $f_T$ | $V_{CB}$ = 10 V, $I_E$ = −50 mA, f = 200 MHz | | 120 | | MHz |
| Collector output capacitance (Common base, input open circuited) | $C_{ob}$ | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1 MHz | | | 20 | pF |

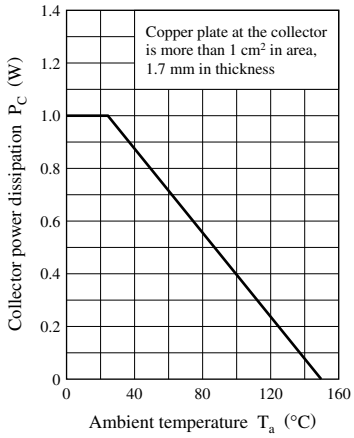
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *1: Pulse measurement
*2: Rank classification

| Rank | R | S |
|---|---|---|
| $h_{FE1}$ | 130 to 220 | 185 to 330 |

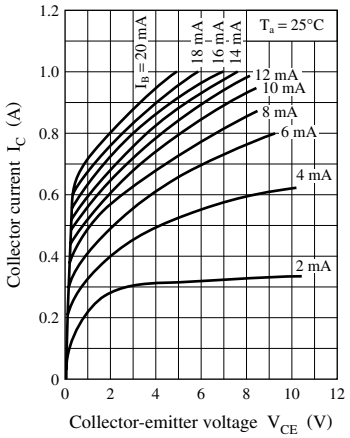


Note) The part numbers in the parenthesis show conventional part number.

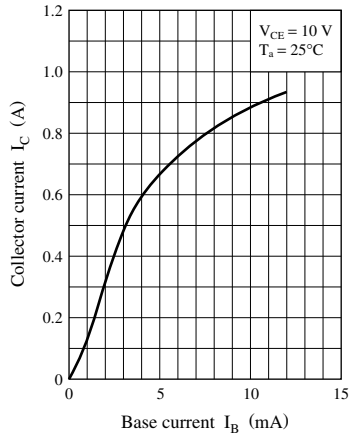
$P_C$ — $T_a$



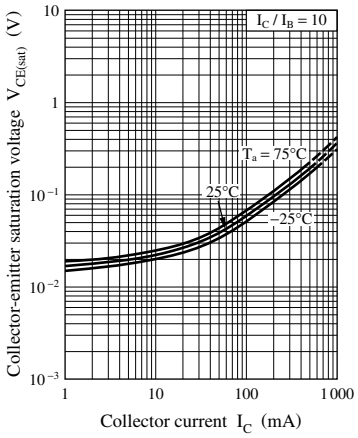

$I_C$ — $V_{CE}$



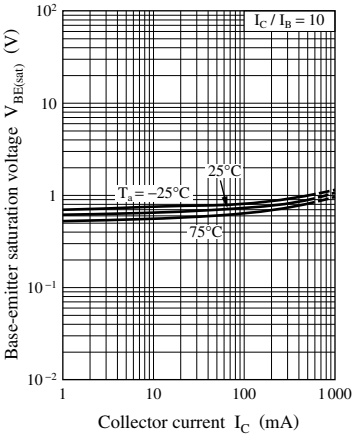

$I_C$ — $I_B$



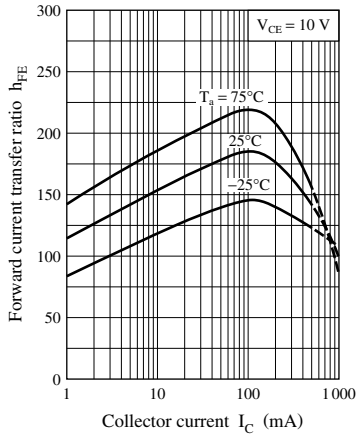

$V_{CE(sat)}$ — $I_C$



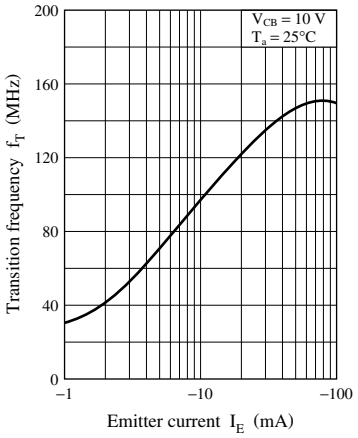

$V_{BE(sat)}$ — $I_C$



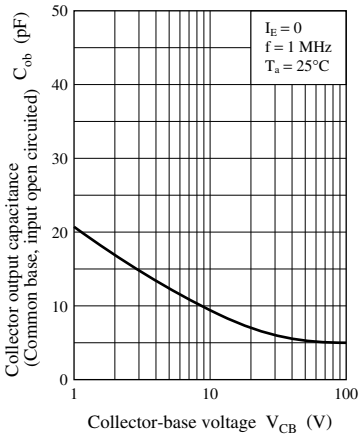

$h_{FE}$ — $I_C$




$f_T$ — $I_E$




$C_{ob}$ — $V_{CB}$



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