

# 2SC828, 2SC828A

## Silicon NPN Epitaxial Planar Type

For small-signal amplification

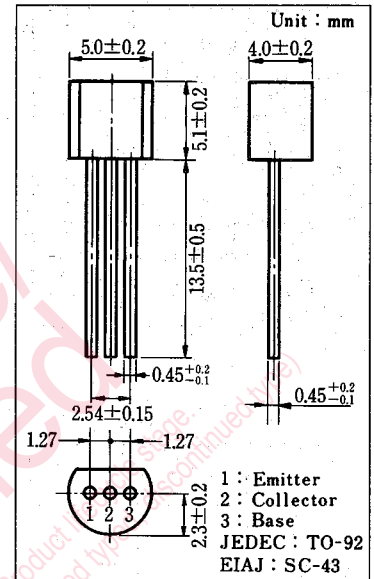
### ■ Features

- Large DC current gain  $h_{FE}$

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

| Item                        | Symbol    | Value      | Unit             |
|-----------------------------|-----------|------------|------------------|
| Collector-Base Voltage      | 2SC828    | 30         | V                |
|                             | 2SC828A   | 45         |                  |
| Collector-Emitter Voltage   | 2SC828    | 25         | V                |
|                             | 2SC828A   | 45         |                  |
| Emitter-Base Voltage        | $V_{EBO}$ | 7          | V                |
| Peak Collector Voltage      | $I_{CP}$  | 100        | mA               |
| Collector Current           | $I_C$     | 50         | mA               |
| Collector Power Dissipation | $P_C$     | 400        | mW               |
| Junction Temperature        | $T_J$     | 150        | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$ | -55 ~ +150 | $^\circ\text{C}$ |

### ■ Package Dimensions

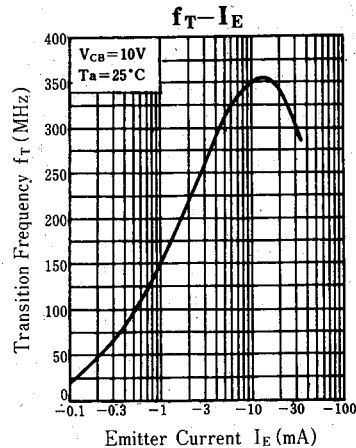
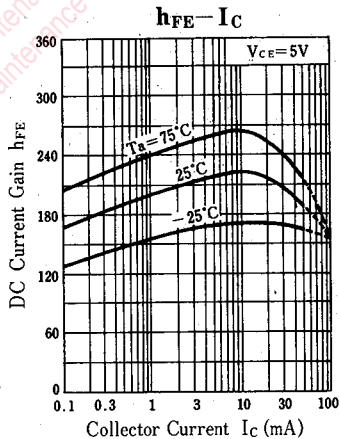
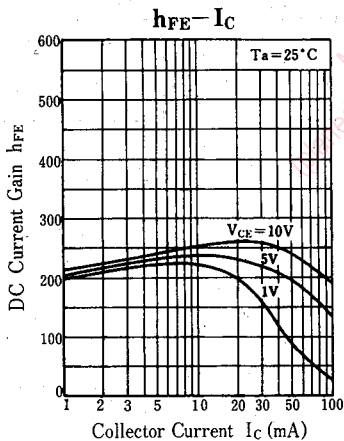
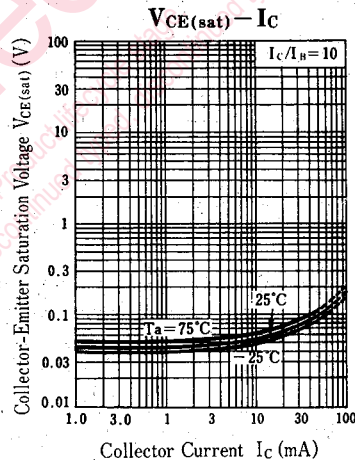
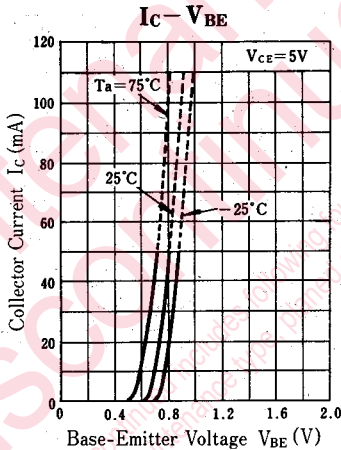
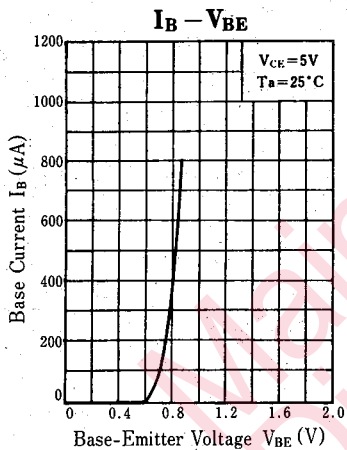
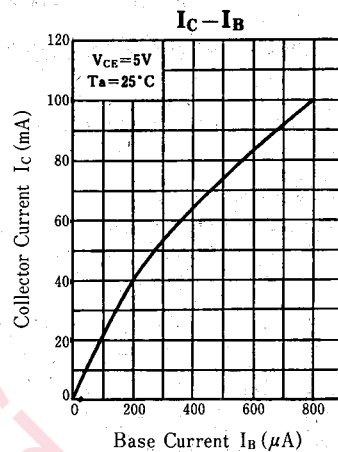
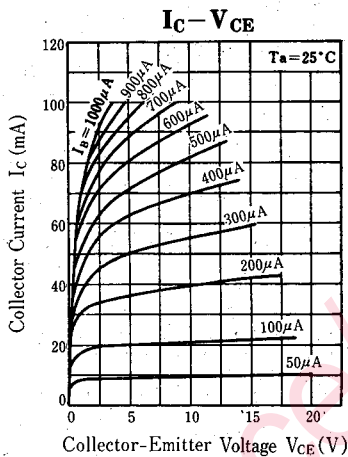
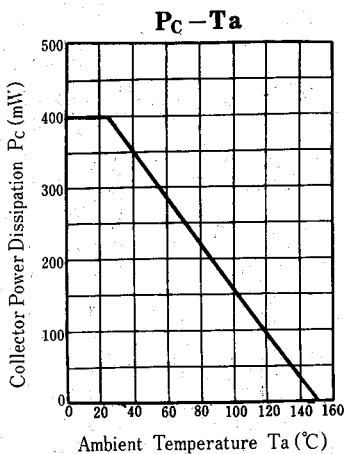


### ■ Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

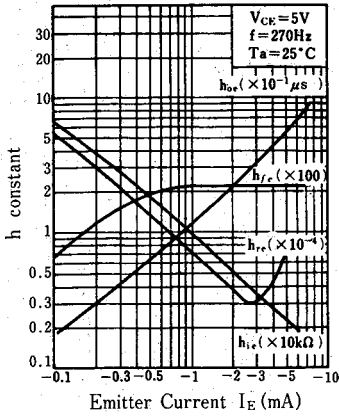
| Item                                 | Symbol        | Condition  | min. | typ. | max. | Unit |
|--------------------------------------|---------------|--|------|------|------|------|
| Collector-Base Voltage               | 2SC828        | $I_C = 10 \mu\text{A}, I_E = 0$  | 30   |      |      | V    |
|                                      | 2SC828A       |  | 45   |      |      |      |
| Collector-Emitter Voltage            | 2SC828        | $I_C = 2 \text{mA}, I_B = 0$   | 25   |      |      | V    |
|                                      | 2SC828A       |  | 45   |      |      |      |
| Emitter-Base Voltage                 | $V_{EBO}$     | $I_E = 10 \mu\text{A}, I_C = 0$  | 7    |      |      | V    |
| DC Current Gain                      | $h_{FE}^*$    | $V_{CE} = 5 \text{V}, I_C = 2 \text{mA}$   | 130  |      | 520  |      |
| Base-Emitter Voltage                 | $V_{BE}$      | $V_{CB} = 5 \text{V}, I_C = 10 \text{mA}$  |      |      | 0.8  | V    |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 50 \text{mA}, I_B = 5 \text{mA}$  |      | 0.14 |      | V    |
| Transition Frequency                 | $f_T$         | $V_{CB} = 10 \text{V}, I_E = -2 \text{mA}, f = 200 \text{MHz}$                       |      | 220  |      | MHz  |
| Noise Figure                         | NF            | $V_{CE} = 5 \text{V}, I_C = 0.2 \text{mA}, R_g = 2 \text{k}\Omega, f = 1 \text{kHz}$ |      | 6    |      | dB   |

#### \* $h_{FE}$ Ranking

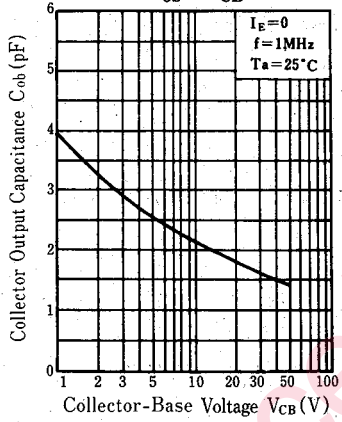
| Rank     | Q         | R         | S         |
|----------|-----------|-----------|-----------|
| $h_{FE}$ | 130 ~ 260 | 180 ~ 360 | 260 ~ 520 |



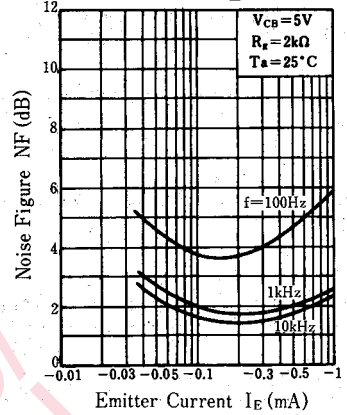
**h Parameter -  $I_E$**



**$C_{ob} - V_{CB}$**



**NF -  $I_E$**



Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.  
(planned maintenance type, maintenance type, planned discontinued type, discontinued type)

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