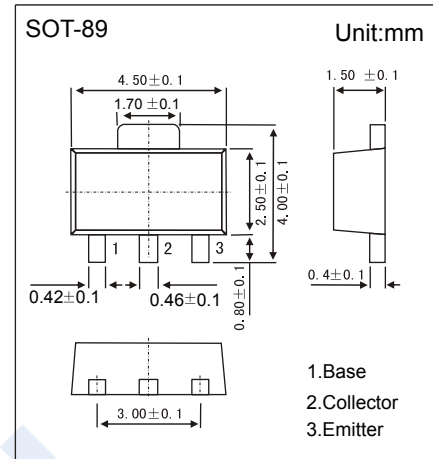


## NPN Transistors

# 2SC4504

## ■ Features

- Collector Current Capability  $I_c=0.3A$
- Collector Emitter Voltage  $V_{CEO}=20V$



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

| Parameter                               | Symbol           | Rating     | Unit |
|-----------------------------------------|------------------|------------|------|
| Collector - Base Voltage                | V <sub>CBO</sub> | 30         | V    |
| Collector - Emitter Voltage             | V <sub>CEO</sub> | 20         |      |
| Emitter - Base Voltage                  | V <sub>EBO</sub> | 3          |      |
| Collector Current - Continuous          | I <sub>C</sub>   | 0.3        | A    |
| Collector Current - Pulse               | I <sub>CP</sub>  | 0.6        |      |
| Collector Power Dissipation<br>(Note.1) | P <sub>C</sub>   | 0.5        | W    |
|                                         |                  | 1.3        |      |
| Junction Temperature                    | T <sub>J</sub>   | 150        | °C   |
| Storage Temperature Range               | T <sub>stg</sub> | -55 to 150 |      |

Note.1 : Mounted on ceramic substrate of 250mm<sup>2</sup>X0.8mm

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

| Parameter                            | Symbol               | Test Conditions                              | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|----------------------------------------------|-----|-----|-----|------|
| Collector- base breakdown voltage    | V <sub>CB0</sub>     | I <sub>C</sub> = 100 μA, I <sub>E</sub> = 0  | 30  |     |     | V    |
| Collector- emitter breakdown voltage | V <sub>CE0</sub>     | I <sub>C</sub> = 1 mA, R <sub>BE</sub> = ∞   | 20  |     |     |      |
| Emitter - base breakdown voltage     | V <sub>EB0</sub>     | I <sub>E</sub> = 100 μ A, I <sub>C</sub> = 0 | 3   |     |     |      |
| Collector-base cut-off current       | I <sub>CBO</sub>     | V <sub>CB</sub> = 20 V , I <sub>E</sub> = 0  |     |     | 0.1 | uA   |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> = 2V , I <sub>C</sub> =0     |     |     | 5   |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =100mA, I <sub>B</sub> =10mA  |     |     | 0.5 | V    |
| Base - emitter saturation voltage    | V <sub>BE(sat)</sub> | I <sub>C</sub> =100mA, I <sub>B</sub> =10mA  |     |     | 1.2 |      |
| DC current gain                      | h <sub>FE</sub>      | V <sub>CE</sub> = 5V, I <sub>C</sub> = 50mA  | 40  |     | 200 |      |
|                                      |                      | V <sub>CE</sub> = 5V, I <sub>C</sub> = 300mA | 20  |     |     |      |
| Collector output capacitance         | C <sub>ob</sub>      | V <sub>CB</sub> = 10V,f=1MHz                 |     | 2.9 |     | pF   |
| Reverse Transfer capacitance         | C <sub>re</sub>      |                                              |     | 2.6 |     |      |
| Transition frequency                 | f <sub>tr</sub>      | V <sub>CE</sub> = 5V, I <sub>C</sub> =50mA   |     | 2.2 |     | GHz  |

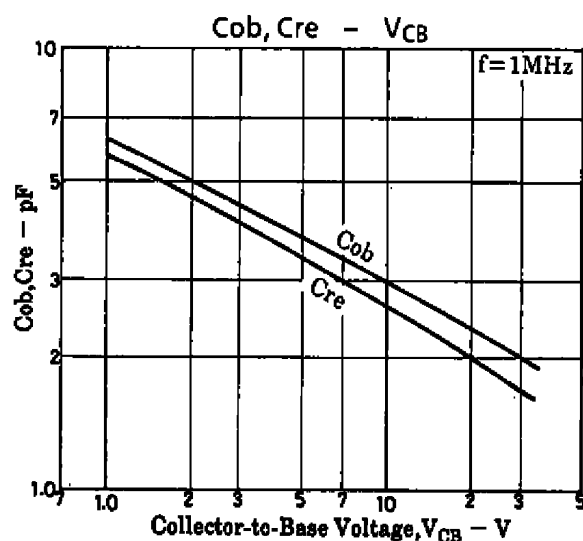
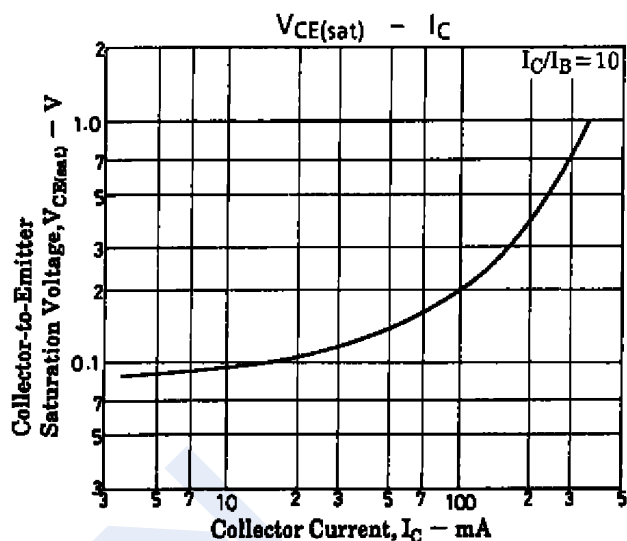
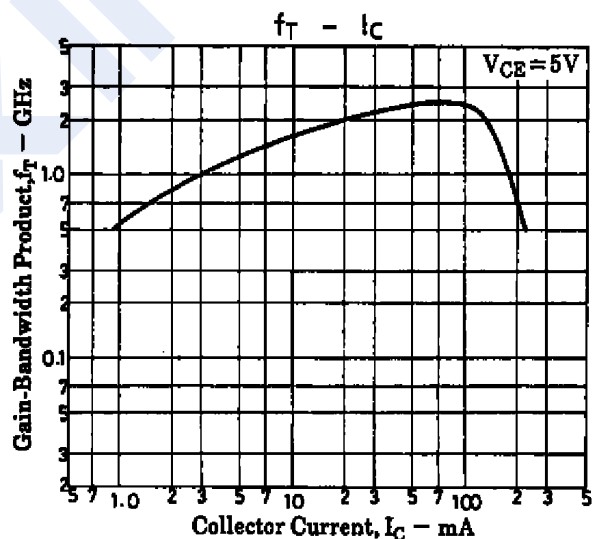
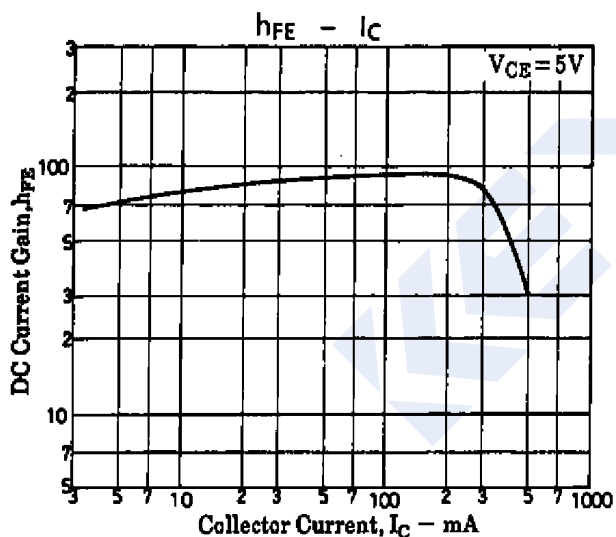
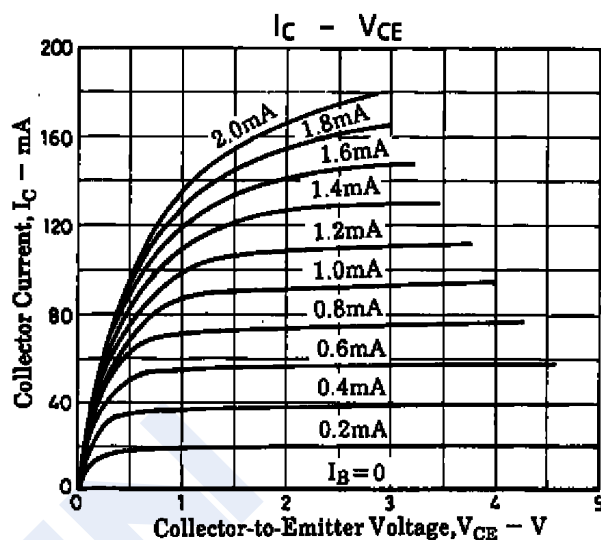
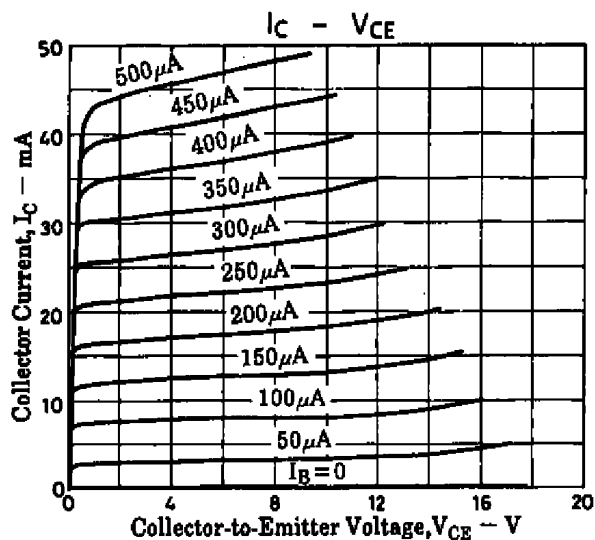
## ■ Classification of $\text{hfe}(1)$

|         |           |           |           |
|---------|-----------|-----------|-----------|
| Type    | 2SC4504-C | 2SC4504-D | 2SC4504-E |
| Range   | 40-80     | 60-120    | 100-200   |
| Marking | CM C      | CM D      | CM E      |

## NPN Transistors

## 2SC4504

■ Typical Characteristics



## NPN Transistors

## 2SC4504

## ■ Typical Characteristics

