

**2SC4504**

## High-Definition CRT Display Video Output Driver Applications

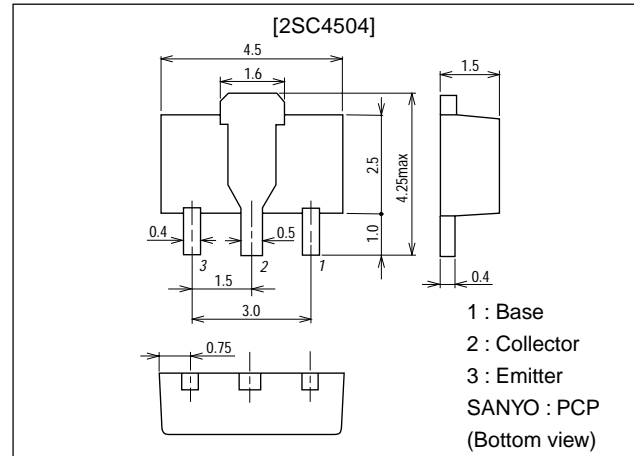
### Features

- High  $f_T$  ( $f_T=2.2\text{GHz}$  typ)
- Large current ( $I_C=300\text{mA}$ )
- Adoption of FBET process.

### Package Dimensions

unit:mm

2038A



### Specifications

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

| Parameter                    | Symbol    | Conditions   | Ratings     | Unit             |
|------------------------------|-----------|--|-------------|------------------|
| Collector-to-Base Voltage    | $V_{CBO}$ |  | 30          | V                |
| Collector-to-Emitter Voltage | $V_{CEO}$ |  | 20          | V                |
| Emitter-to-Base Voltage      | $V_{EBO}$ |  | 3           | V                |
| Collector Current            | $I_C$     |  | 300         | mA               |
| Collector Current (Pulse)    | $I_{CP}$  |  | 600         | mA               |
| Collector Dissipation        | $P_C$     |  | 0.5         | W                |
|                              |           | Mounted on ceramic board (250mm <sup>2</sup> ×0.8mm) | 1.3         | W                |
| Junction Temperature         | $T_J$     |  | 150         | $^\circ\text{C}$ |
| Storage Temperature          | $T_{stg}$ |  | -55 to +150 | $^\circ\text{C}$ |

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

| Parameter                | Symbol    | Conditions                           | Ratings |     |      | Unit          |
|--------------------------|-----------|--------------------------------------|---------|-----|------|---------------|
|                          |           |                                      | min     | typ | max  |               |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}=20\text{V}, I_E=0$           |         |     | 0.1  | $\mu\text{A}$ |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB}=2\text{V}, I_C=0$            |         |     | 5.0  | $\mu\text{A}$ |
| DC Current Gain          | $h_{FE1}$ | $V_{CE}=5\text{V}, I_C=50\text{mA}$  | 40*     |     | 200* |               |
|                          | $h_{FE2}$ | $V_{CE}=5\text{V}, I_C=300\text{mA}$ | 20      |     |      |               |
| Gain-Bandwidth Product   | $f_T$     | $V_{CE}=5\text{V}, I_C=50\text{mA}$  |         | 2.2 |      | GHz           |

\* : The 2SC4504 is classified by 50mA  $h_{FE}$  as follows :

|    |   |    |    |   |     |     |   |     |
|----|---|----|----|---|-----|-----|---|-----|
| 40 | C | 80 | 60 | D | 120 | 100 | E | 200 |
|----|---|----|----|---|-----|-----|---|-----|

Marking : CM

$h_{FE}$  rank : C, D, E

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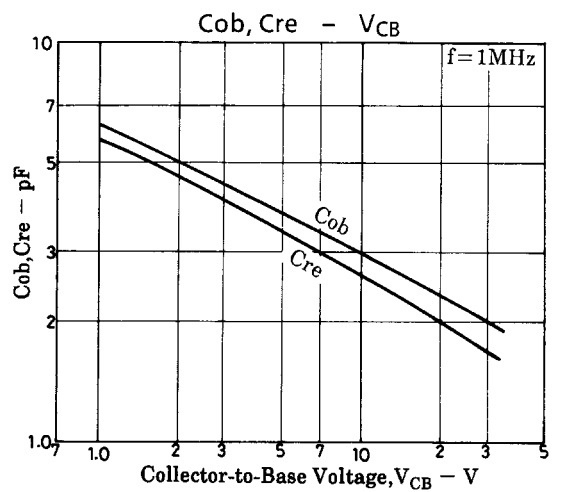
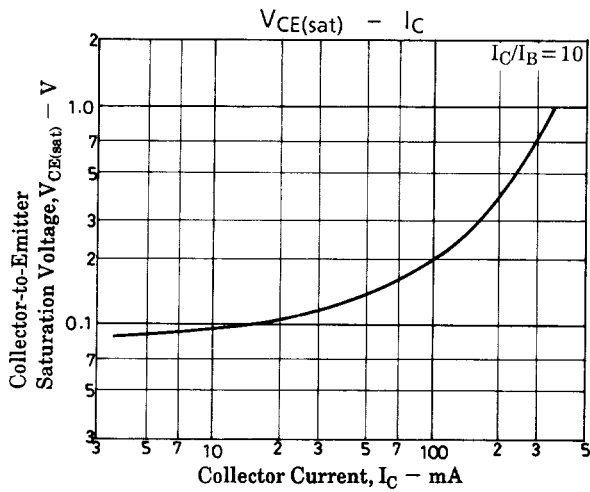
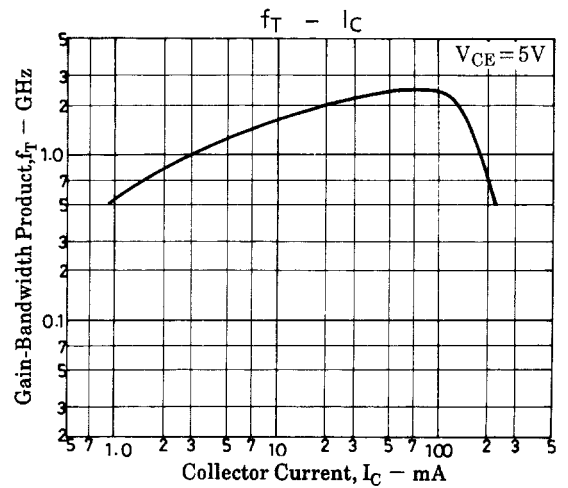
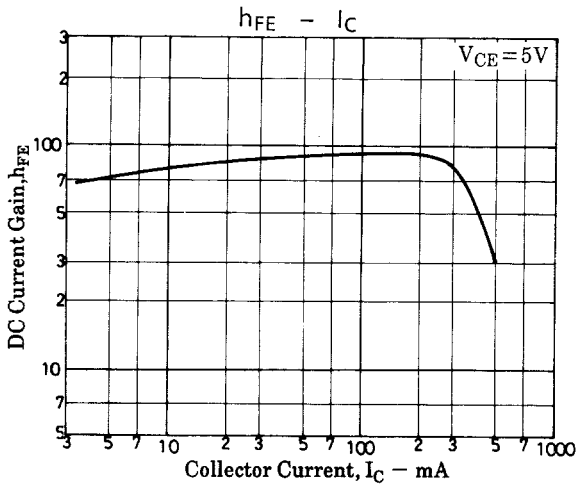
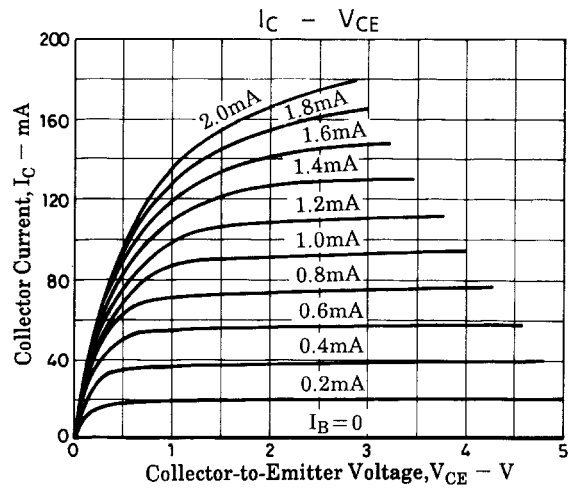
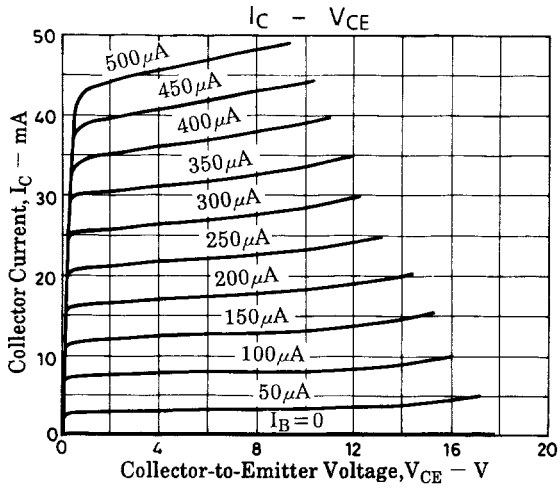
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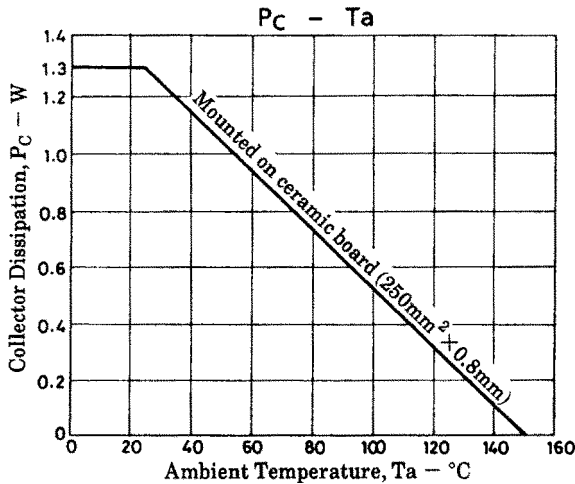
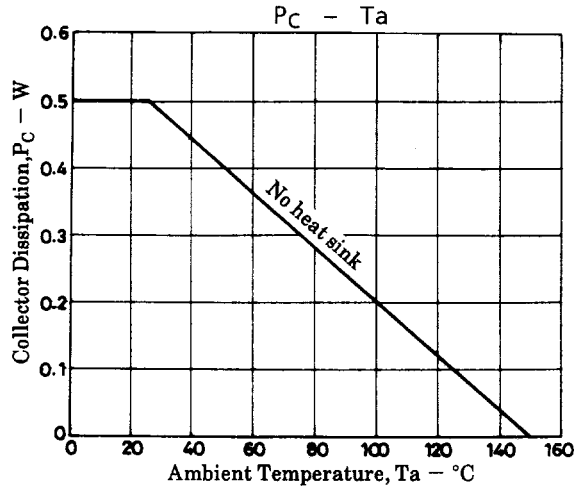
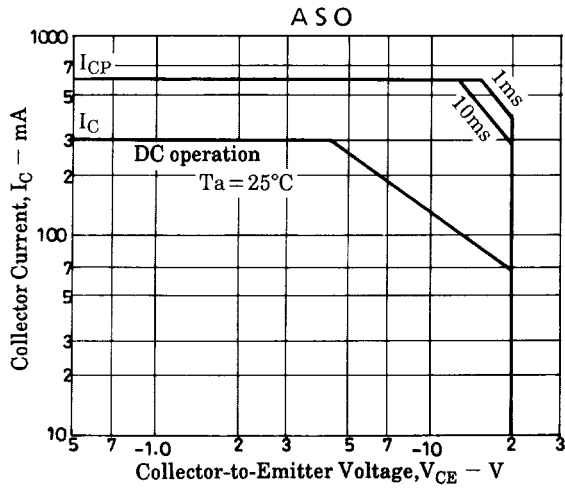
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

# 2SC4504

| Parameter                               | Symbol        | Conditions            | Ratings |     |     | Unit |
|---|---------------|-----------------------|---------|-----|-----|------|
|   |               |                       | min     | typ | max |      |
| Output Capacitance                      | $C_{ob}$      | $V_{CB}=10V, f=1MHz$  |         | 2.9 |     | pF   |
| Reverse Transfer Capacitance            | $C_{re}$      | $V_{CB}=10V, f=1MHz$  |         | 2.6 |     | pF   |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=100mA, I_B=10mA$ | 0.15    | 0.5 |     | V    |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=100mA, I_B=10mA$ | 0.9     | 1.2 |     | V    |



## 2SC4504



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