



2SA1704/2SC4484

High-Current Driver Applications

Applications

- Voltage regulators, relay drivers, lamp drivers.

Features

- Adoption of FBET, MBIT processes.
- Low collector-to-emitter voltage.
- Large current capacity and wide ASO.
- Fast switching speed.

() : 2SA1704

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------|
| Collector-to-Base Voltage | V_{CB0} | | (-)30 | V |
| Collector-to-Emitter Voltage | V_{CE0} | | (-)25 | V |
| Emitter-to-Base Voltage | V_{EB0} | | (-)6 | V |
| Collector Current | I_C | | (-)2.5 | A |
| Collector Current (Pulse) | I_{CP} | | (-)5 | A |
| Collector Dissipation | P_C | | 1 | W |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|----------------------------------|---------|-----|--------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CB0} | $V_{CB} = (-)50V, I_E = 0$ | | | (-)100 | nA |
| Emitter Cutoff Current | I_{EB0} | $V_{EB} = (-)4V, I_C = 0$ | | | (-)100 | nA |
| DC Current Gain | h_{FE1} | $V_{CE} = (-)2V, I_C = (-)100mA$ | 100* | | 400* | |
| | h_{FE2} | $V_{CE} = (-)2V, I_C = (-)1A$ | 65 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)10V, I_C = (-)50mA$ | | 150 | | MHz |

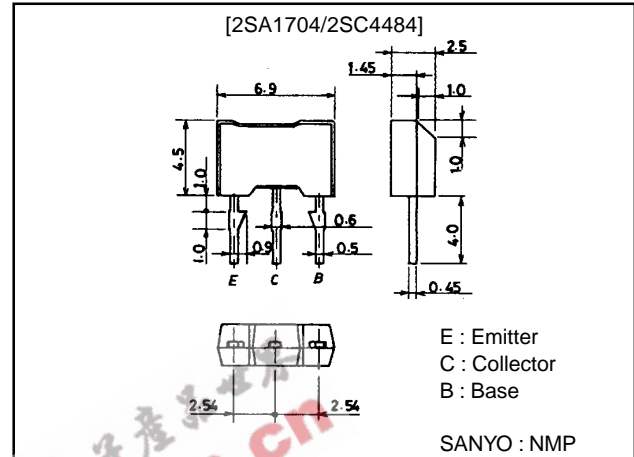
* : The 2SA1704/2SC4484 are classified by 100mA h_{FE} as follows :

| | | |
|-----------|-----------|-----------|
| 100 R 200 | 140 S 280 | 200 T 400 |
|-----------|-----------|-----------|

Package Dimensions

unit:mm

2064



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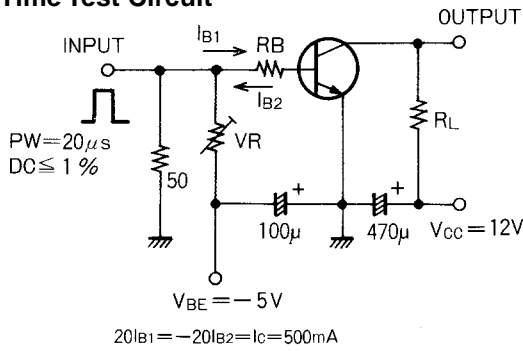
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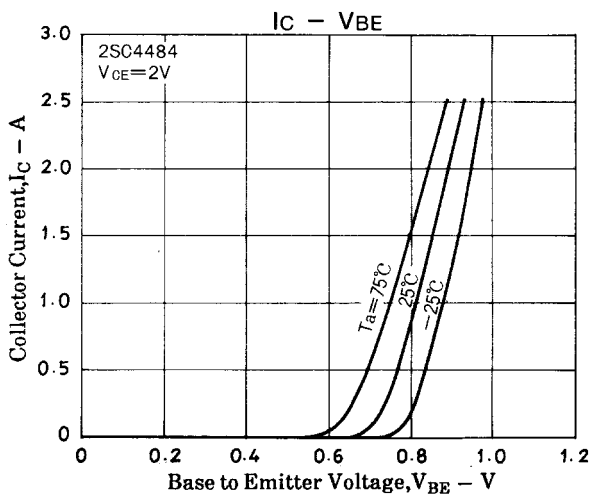
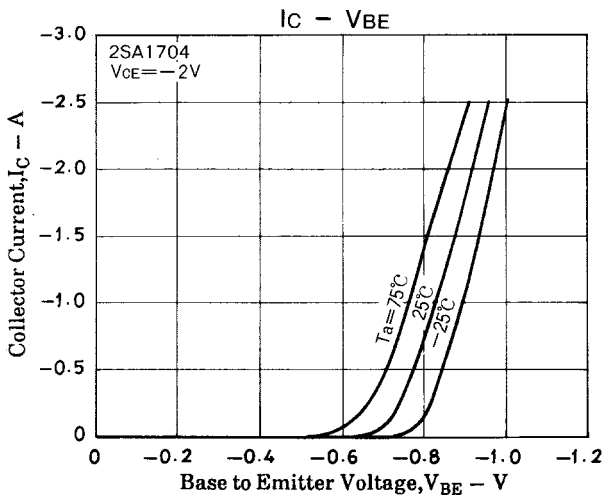
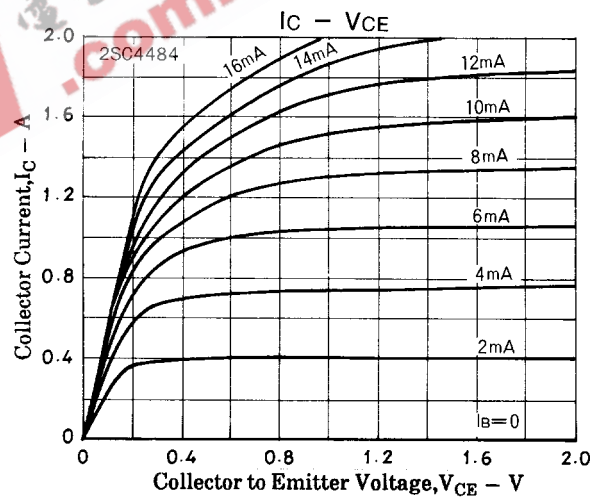
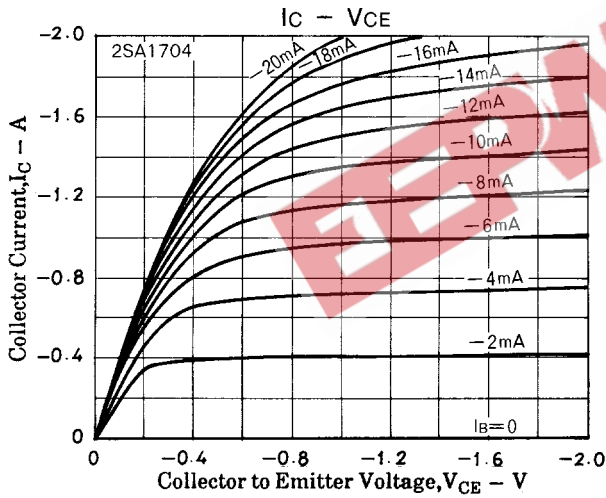
2SA1704/2SC4484

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|-----------------------------|---------|---------|--------|------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)1.5A, I_B=(-)75mA$ | | (-0.35) | (-0.6) | V |
| | | | | 0.18 | 0.4 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)1.5A, I_B=(-)75mA$ | | (-0.95) | (-1.2) | V |
| Output Capacitance | C_{ob} | $V_{CB}=(-)10V, f=1MHz$ | | (32)19 | | pF |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu A, I_E=0$ | (-30) | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$ | (-25) | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=(-)10\mu A, I_C=0$ | (-6) | | | V |
| Turn-ON Time | t_{on} | See specified Test Circuit | | 60 | | ns |
| Storage Time | t_{stg} | See specified Test Circuit | | (350) | | ns |
| | | | | 500 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 25 | | ns |

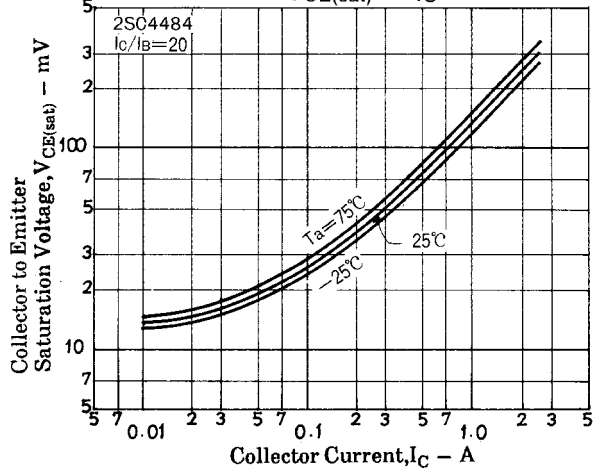
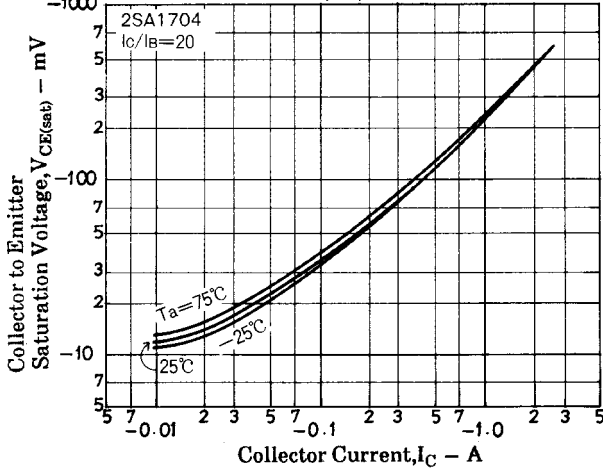
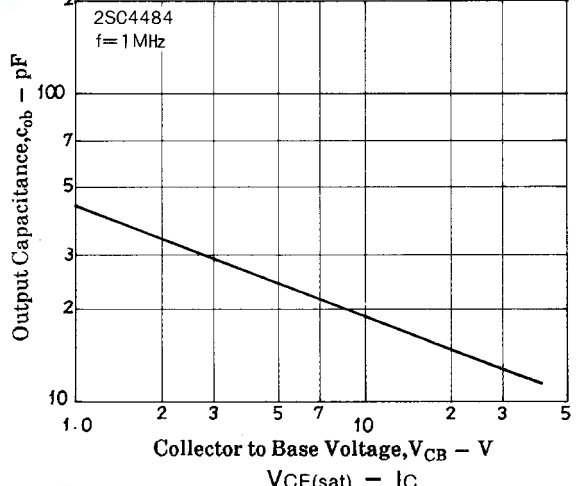
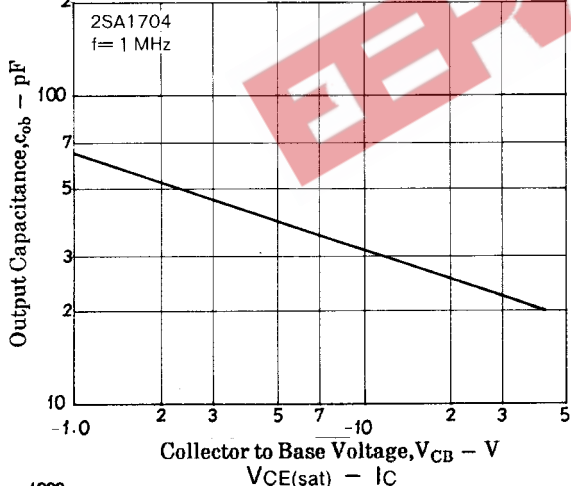
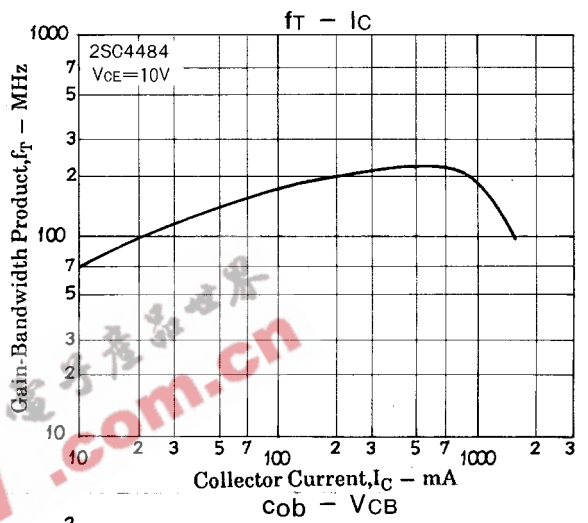
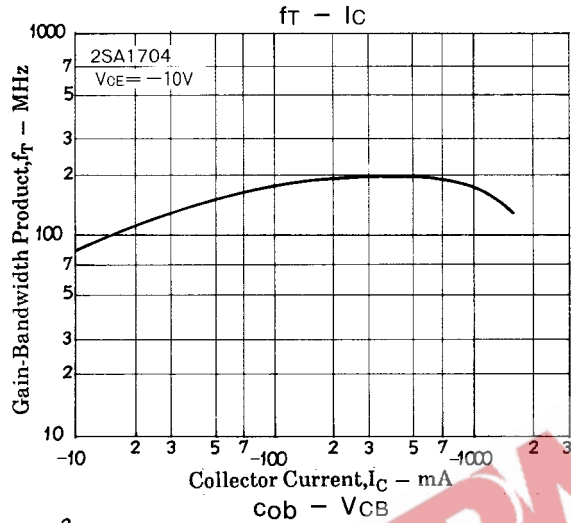
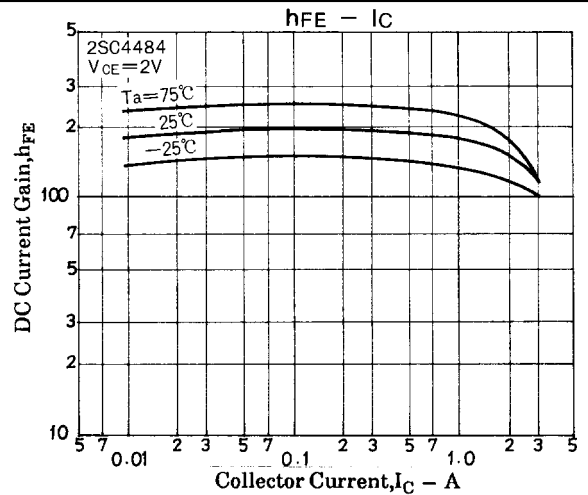
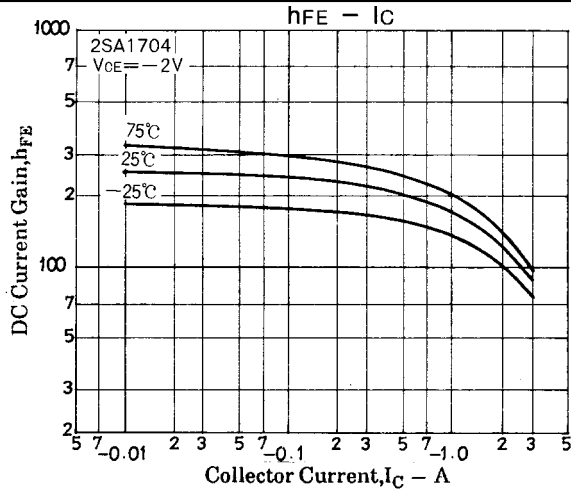
Switching Time Test Circuit



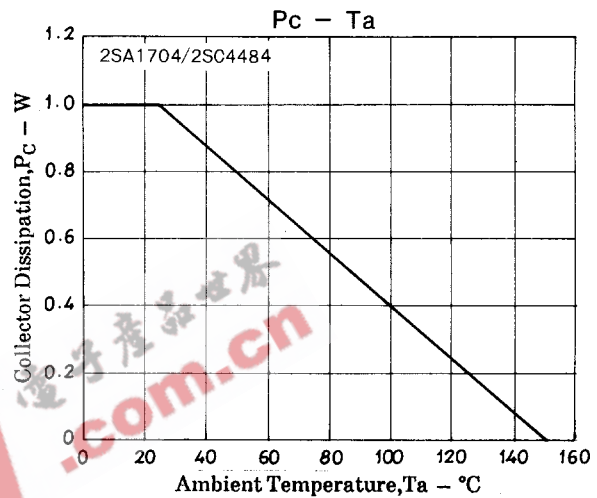
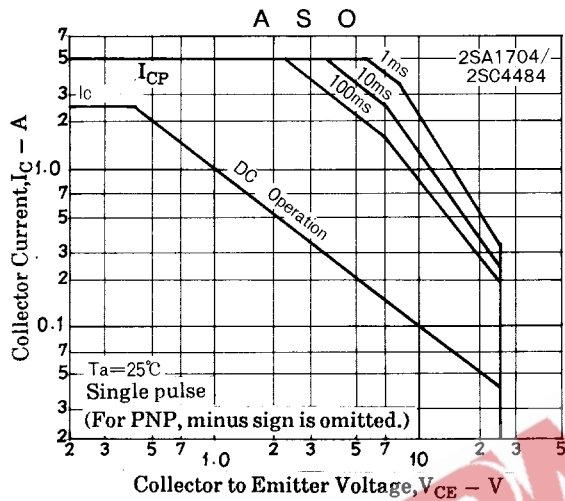
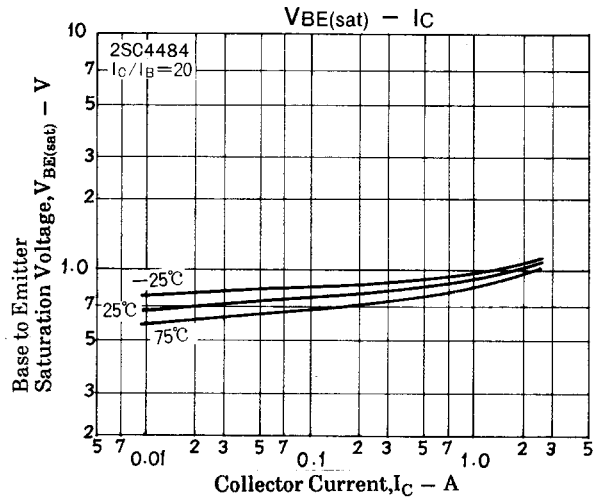
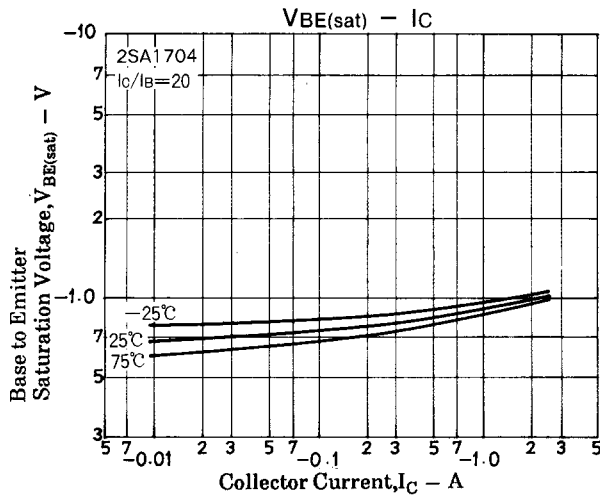
(For PNP, the polarity is reversed.)
 Unit (resistance : Ω , capacitance : F)



2SA1704/2SC4484



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