

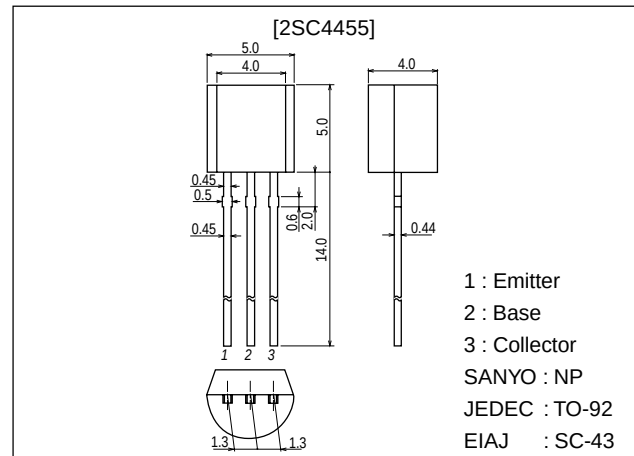
**2SC4455****High-Speed Switching Applications****Features**

- Fast switching speed.
- Low collector saturation voltage.
- High gain-bandwidth product.
- Small collector capacity.

**Package Dimensions**

unit:mm

2061A

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

| Parameter                    | Symbol    | Conditions | Ratings     | Unit |
|------------------------------|-----------|------------|-------------|------|
| Collector-to-Base Voltage    | $V_{CBO}$ |            | 40          | V    |
| Collector-to-Emitter Voltage | $V_{CES}$ |            | 40          | V    |
|                              | $V_{CEO}$ |            | 15          | V    |
| Emitter-to-Base Voltage      | $V_{EBO}$ |            | 5           | V    |
| Collector Current            | $I_C$     |            | 200         | mA   |
| Collector Current (Pulse)    | $I_{CP}$  |            | 500         | mA   |
| Base Current                 | $I_B$     |            | 40          | mA   |
| Collector Dissipation        | $P_C$     |            | 600         | mW   |
| 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 | $I_{CBO}$ | $V_{CB}=20V, I_E=0$    |         |     | 0.1  | $\mu A$ |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB}=3V, I_C=0$     |         |     | 0.1  | $\mu A$ |
| DC Current Gain          | $h_{FE}$  | $V_{CE}=1V, I_C=10mA$  | 50*     | 90  | 200* |         |
| Gain-Bandwidth Product   | $f_T$     | $V_{CE}=10V, I_C=10mA$ | 450     | 750 |      | MHz     |
| Output Capacitance       | $C_{ob}$  | $V_{CB}=5V, f=1MHz$    |         | 1.8 | 4.0  | pF      |

\* : The 2SC4455 is classified by 10mA  $h_{FE}$  as follows :

|    |   |     |    |   |     |     |   |     |
|----|---|-----|----|---|-----|-----|---|-----|
| 50 | P | 100 | 70 | Q | 140 | 100 | R | 200 |
|----|---|-----|----|---|-----|-----|---|-----|

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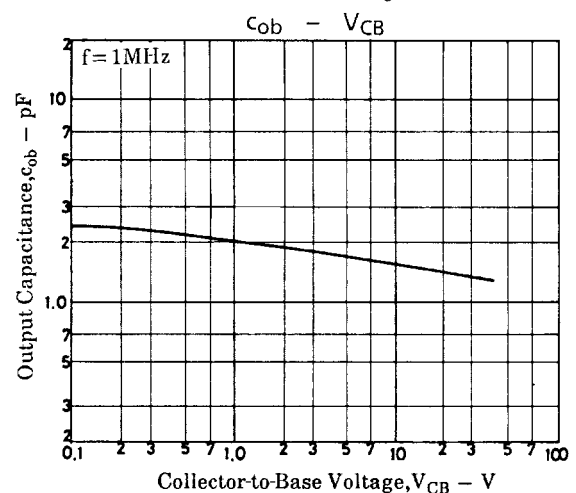
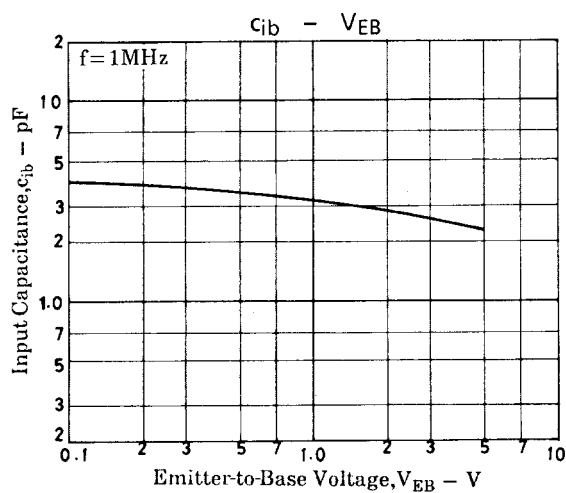
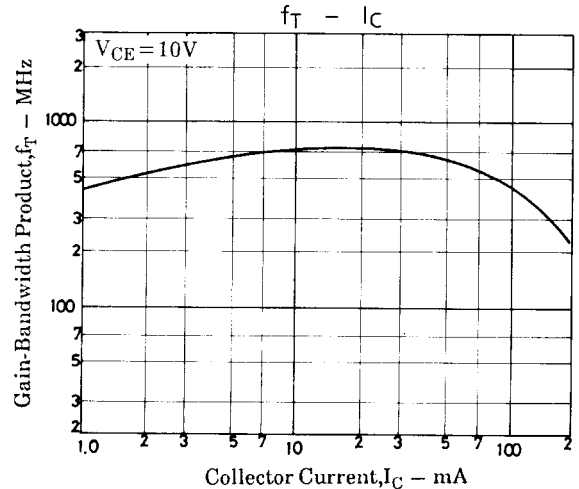
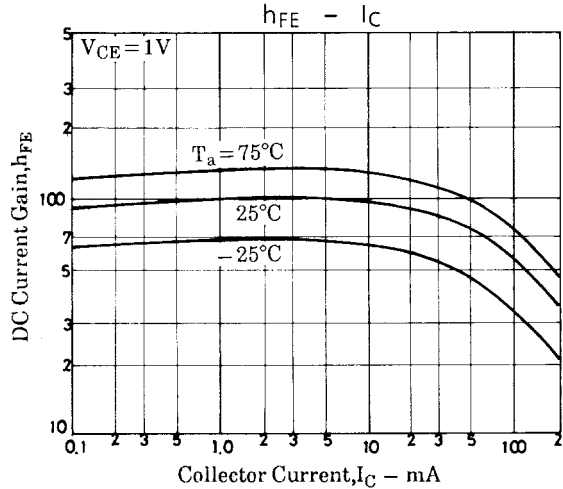
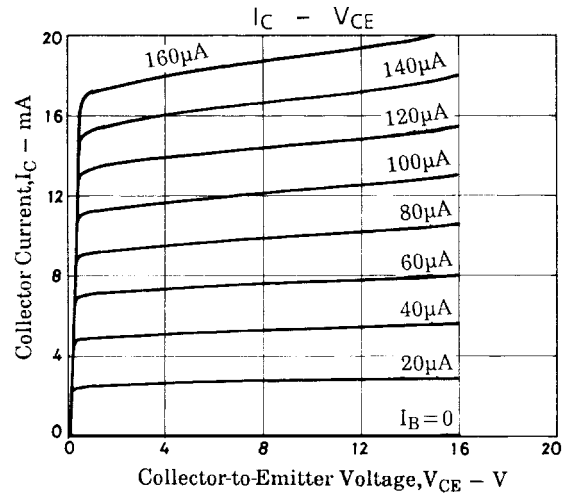
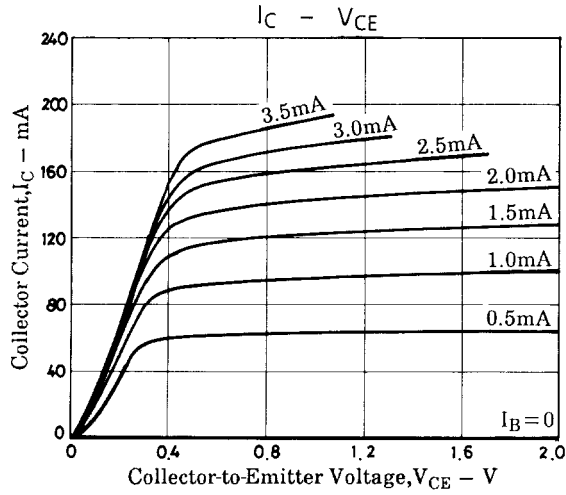
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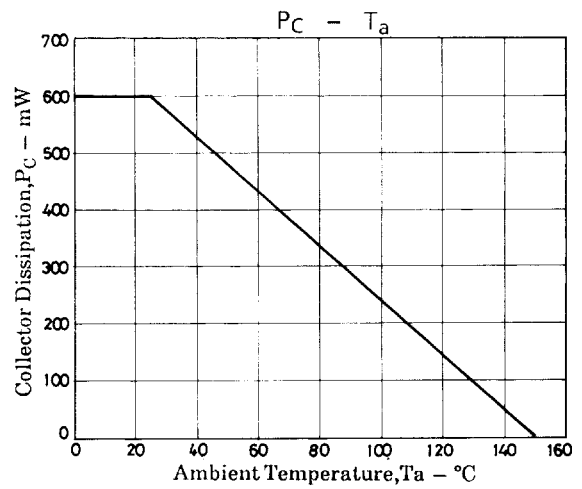
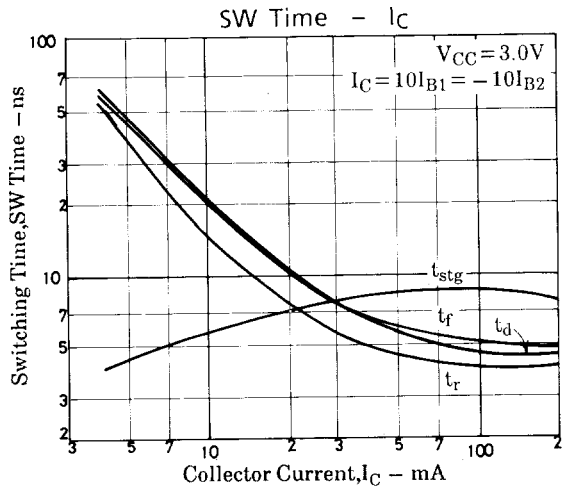
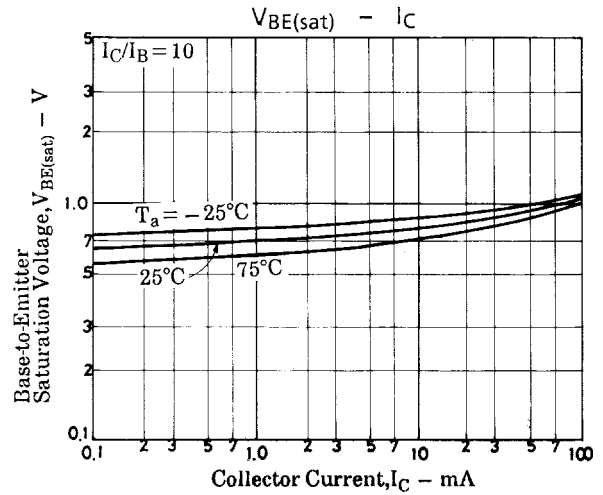
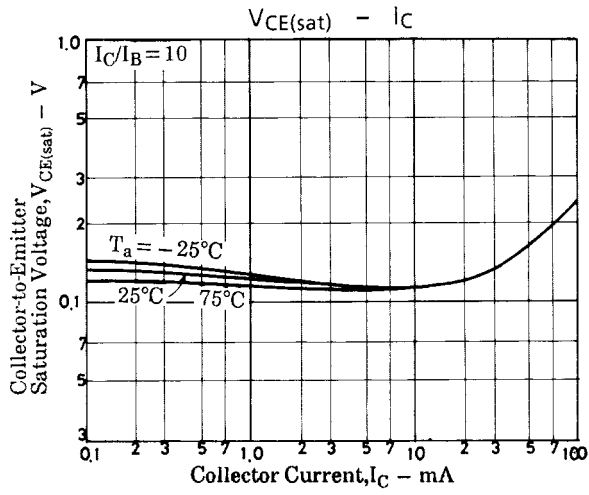
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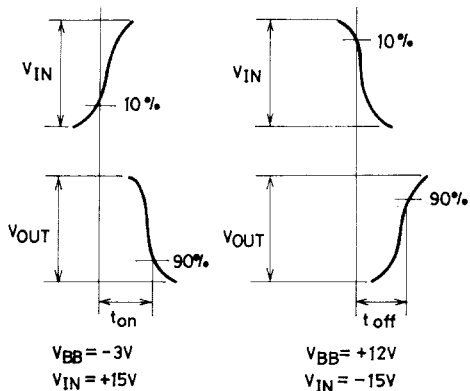
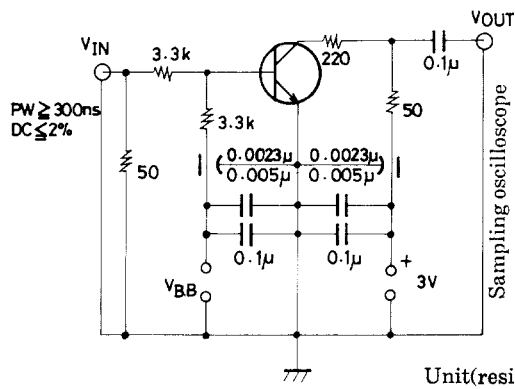
# 2SC4454

| Parameter                               | Symbol        | Conditions                  | Ratings |      |      | Unit |
|-----------------------------------------|---------------|-----------------------------|---------|------|------|------|
|                                         |               |                             | min     | typ  | max  |      |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=10mA, I_B=1mA$         |         | 0.13 | 0.25 | V    |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=10mA, I_B=1mA$         |         | 0.80 | 0.85 | V    |
| Collector-to-Base Breakdown Voltage     | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0$        | 40      |      |      | V    |
| Collector-to-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C=1mA, R_{BE}=\infty$    | 15      |      |      | V    |
| Emitter-to-Base Breakdown Voltage       | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0$        | 5       |      |      | V    |
| Turn-ON Time                            | $t_{on}$      | See specified test circuit. |         | 8.0  | 12   | ns   |
| Storage Time                            | $t_{stg}$     | See specified test circuit. |         | 6.0  | 13   | ns   |
| Fall Time                               | $t_f$         | See specified test circuit. |         | 12   | 18   | ns   |

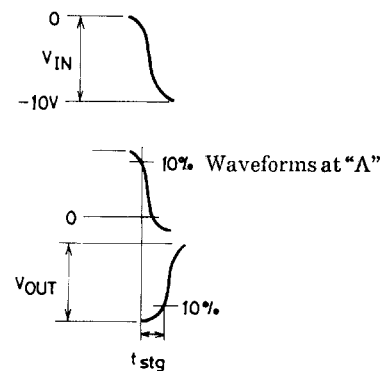
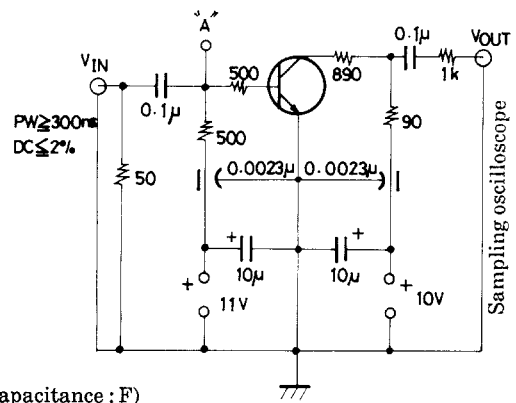




$t_{on}$ ,  $t_{off}$  Test Circuit



$t_{stg}$  Test Circuit



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