

|              |  |                |
|--------------|--|----------------|
| <b>SANYO</b> | No.2811  | <b>2SC4452</b> |
|              | NPN Epitaxial Planar Silicon Transistor<br>High-Speed Switching Applications |                |

**Features**

- Fast switching speed
- Low collector saturation voltage
- High gain-bandwidth product
- Small collector capacity
- Very small-sized package permitting the 2SC4452-applied sets to be made small and slim

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

|                              |                  |             | unit |
|------------------------------|------------------|-------------|------|
| Collector to Base Voltage    | V <sub>CB0</sub> | 40          | V    |
| Collector to Emitter Voltage | V <sub>CES</sub> | 40          | V    |
| Collector to Emitter Voltage | V <sub>CEO</sub> | 15          | V    |
| Emitter to Base Voltage      | V <sub>EBO</sub> | 5           | V    |
| Collector Current            | I <sub>C</sub>   | 200         | mA   |
| Collector Current(Pulse)     | I <sub>CP</sub>  | 500         | mA   |
| Base Current                 | I <sub>B</sub>   | 40          | mA   |
| Collector Dissipation        | P <sub>C</sub>   | 150         | mW   |
| Junction Temperature         | T <sub>J</sub>   | 150         | °C   |
| Storage Temperature          | T <sub>stg</sub> | -55 to +150 | °C   |

**Electrical Characteristics at Ta = 25°C**

|                          |                      |  | min | typ  | max  | unit |
|--------------------------|----------------------|--|-----|------|------|------|
| Collector Cutoff Current | I <sub>CB0</sub>     | V <sub>CB</sub> = 20V, I <sub>E</sub> = 0    |     |      | 0.1  | μA   |
| Emitter Cutoff Current   | I <sub>EBO</sub>     | V <sub>EB</sub> = 3V, I <sub>C</sub> = 0     |     |      | 0.1  | μA   |
| DC Current Gain          | h <sub>FE</sub>      | V <sub>CE</sub> = 1V, I <sub>C</sub> = 10mA  | *50 | 90   | *200 |      |
| Gain-Bandwidth Product   | f <sub>T</sub>       | V <sub>CE</sub> = 10V, I <sub>C</sub> = 10mA | 450 | 750  |      | MHz  |
| Collector Capacitance    | c <sub>ob</sub>      | V <sub>CB</sub> = 5V, f = 1MHz               |     | 1.4  | 4.0  | pF   |
| C-E Saturation Voltage   | V <sub>CE(sat)</sub> | I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA  |     | 0.13 | 0.25 | V    |
| B-E Saturation Voltage   | V <sub>BE(sat)</sub> | I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA  |     | 0.80 | 0.85 | V    |
| C-B Breakdown Voltage    | V <sub>(BR)CBO</sub> | I <sub>C</sub> = 10μA, I <sub>E</sub> = 0    | 40  |      |      | V    |
| C-E Breakdown Voltage    | V <sub>(BR)CEO</sub> | I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞    | 15  |      |      | V    |
| E-B Breakdown Voltage    | V <sub>(BR)EBO</sub> | I <sub>E</sub> = 10μA, I <sub>C</sub> = 0    | 5   |      |      | V    |
| Turn-ON Time             | t <sub>on</sub>      | See specified Test Circuit.                  |     | 8.0  |      | ns   |
| Storage Time             | t <sub>stg</sub>     |  | 6.0 | ns   |      |      |
| Turn-OFF Time            | t <sub>off</sub>     |  | 12  | ns   |      |      |

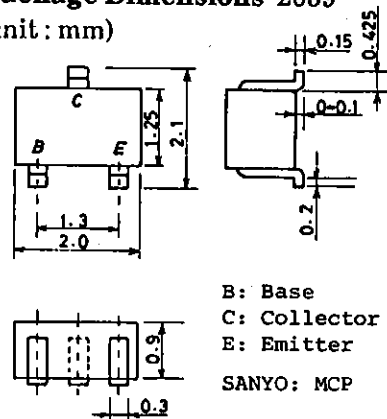
\*: The 2SC4452 is classified by 10mA h<sub>FE</sub> as follows:

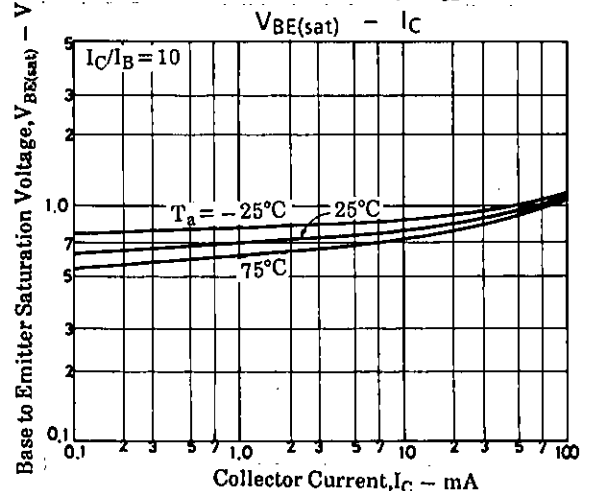
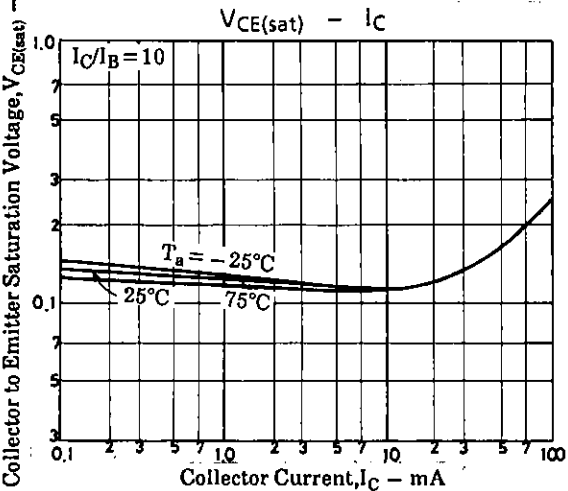
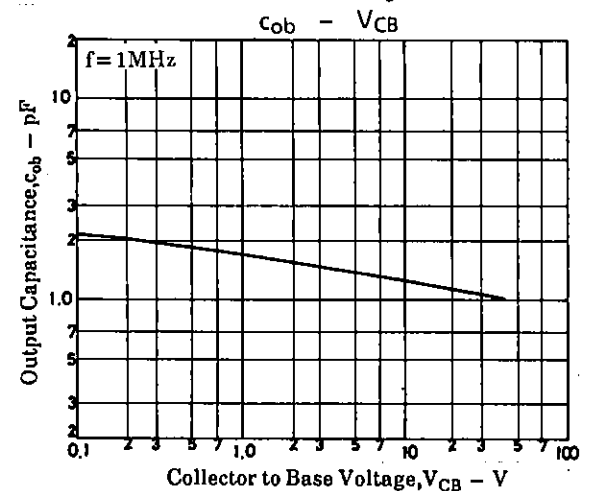
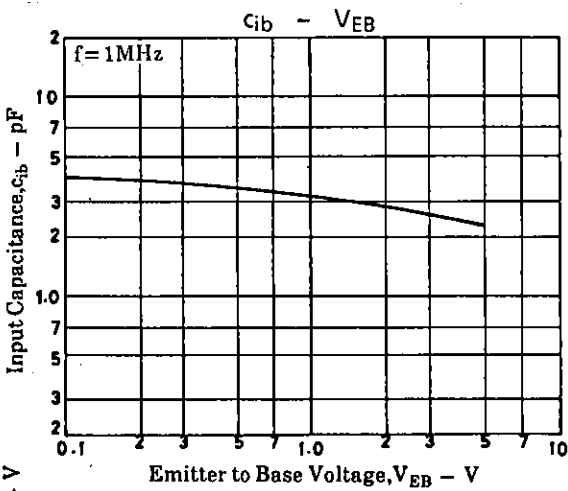
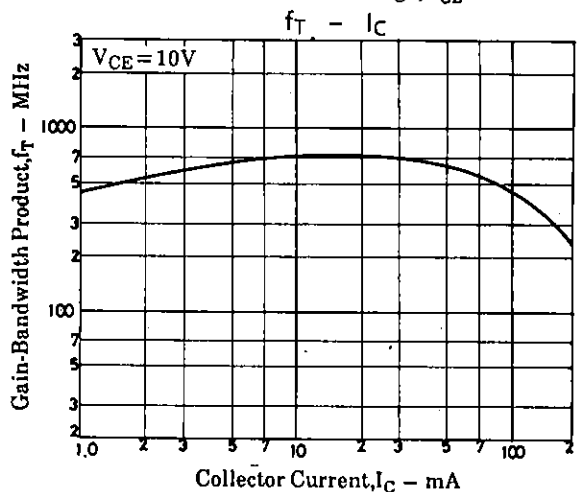
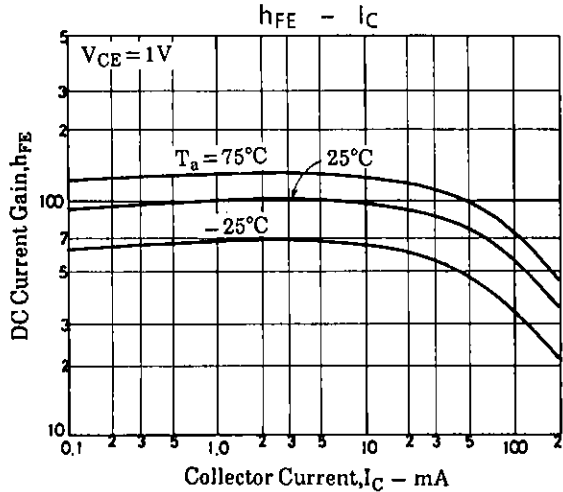
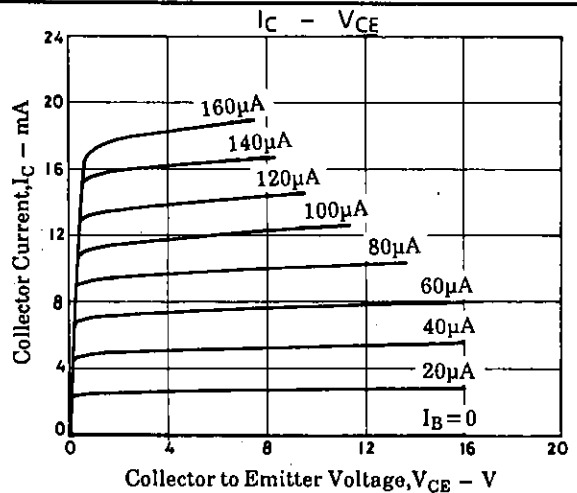
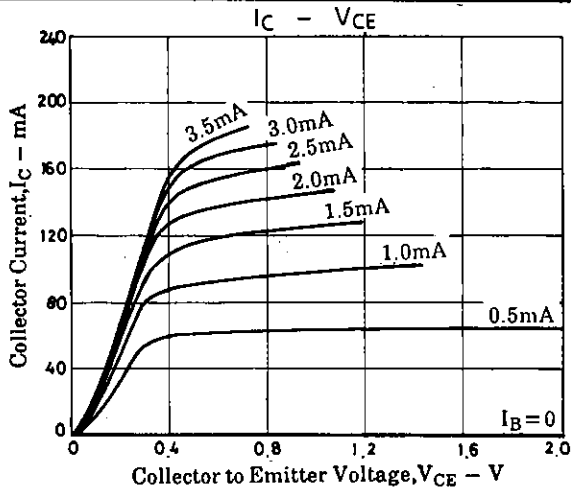
|    |   |     |    |   |     |     |   |     |
|----|---|-----|----|---|-----|-----|---|-----|
| 50 | 2 | 100 | 70 | 3 | 140 | 100 | 4 | 200 |
|----|---|-----|----|---|-----|-----|---|-----|

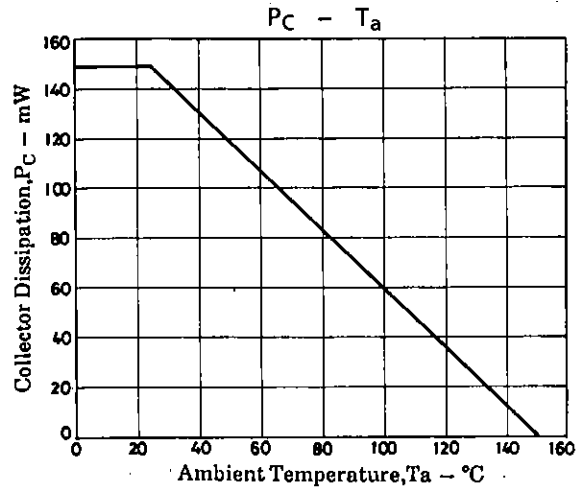
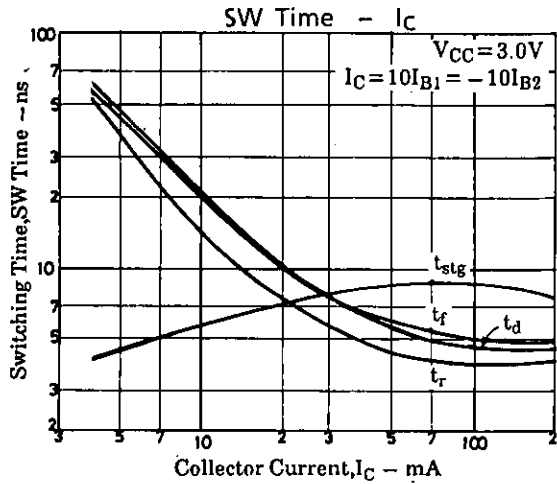
Marking: ST

h<sub>FE</sub> rank: 2,3,4

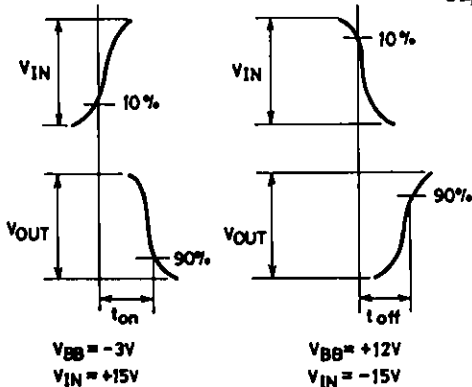
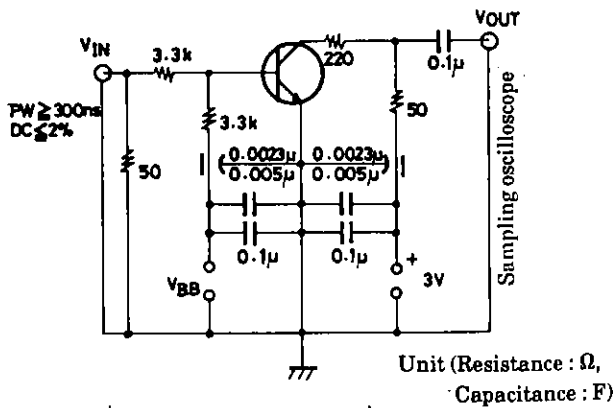
**Package Dimensions 2059**  
(unit: mm)



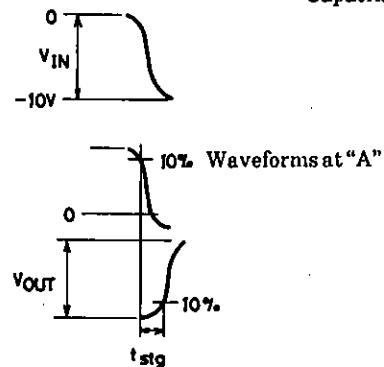
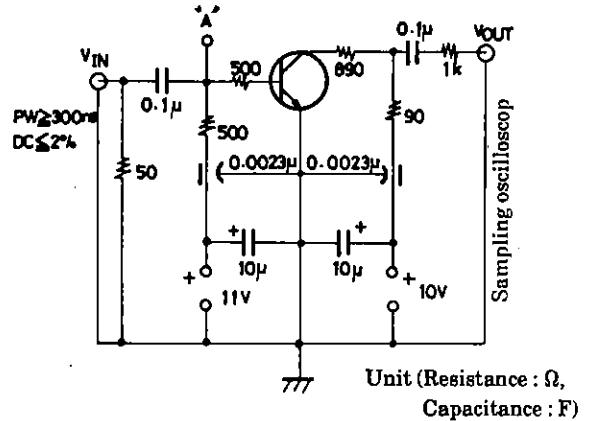




$t_{on}, t_{off}$  Test Circuit



$t_{stg}$  Test Circuit



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