

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

# 2SC5446

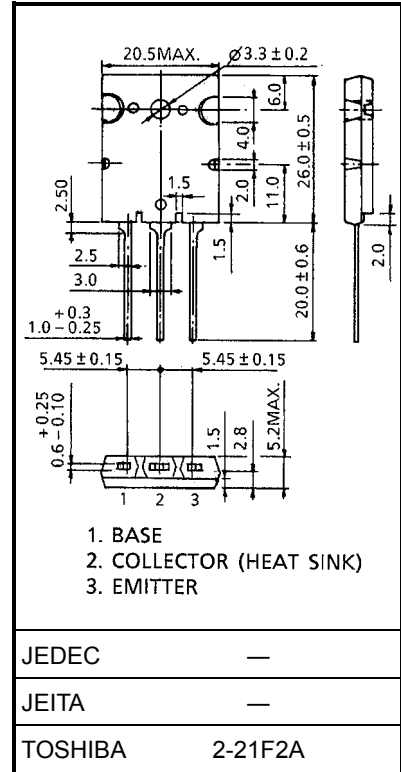
HORIZONTAL DEFLECTION OUTPUT FOR HIGH RESOLUTION

DISPLAY, COLOR TV

HIGH SPEED SWITCHING APPLICATIONS

- High Voltage :  $V_{CBO} = 1700\text{ V}$
- Low Saturation Voltage :  $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed :  $t_f(2) = 0.1\text{ }\mu\text{s (Typ.)}$

Unit: mm



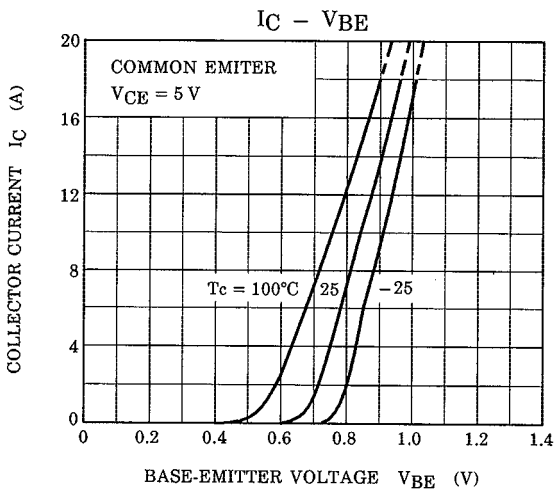
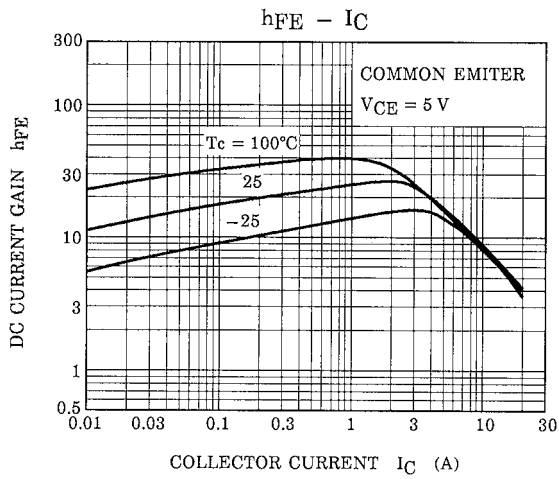
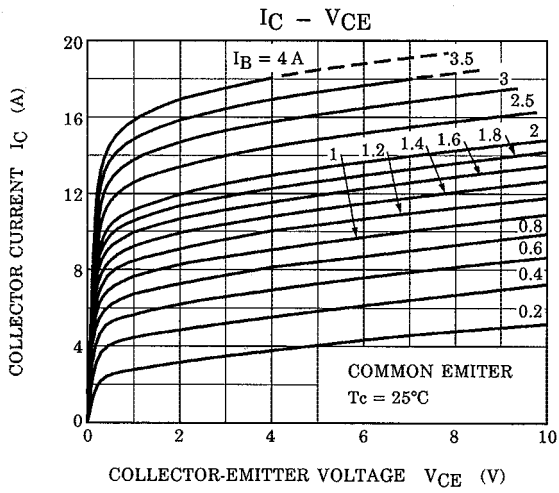
Weight: 9.75 g (typ.)

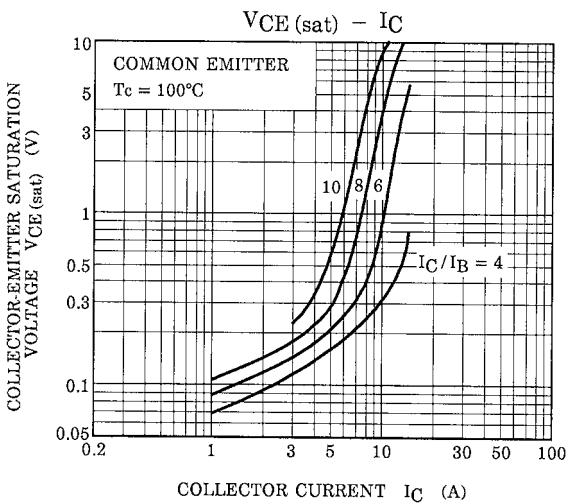
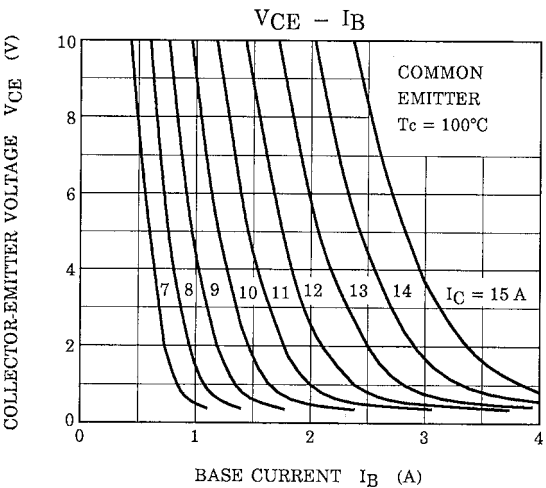
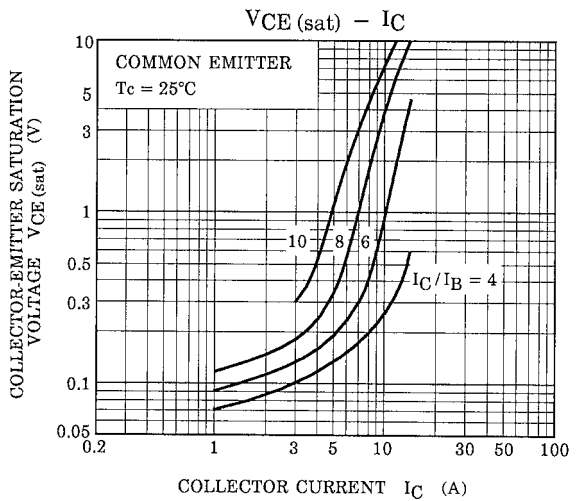
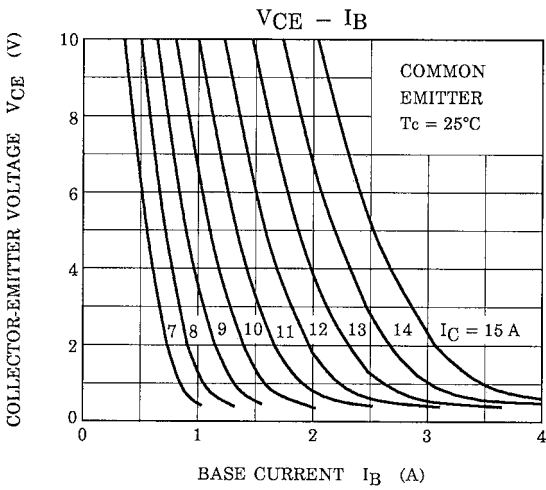
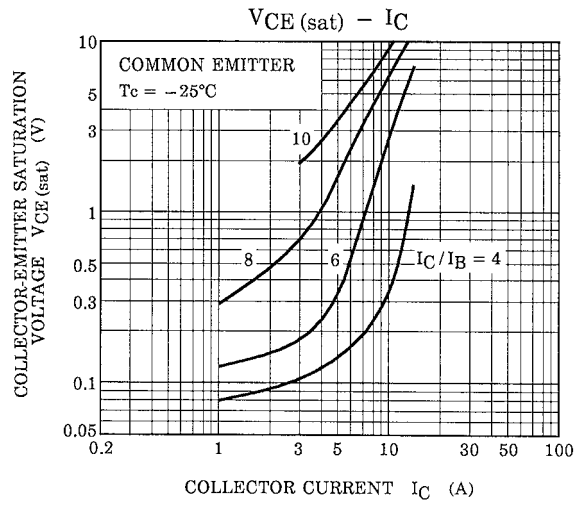
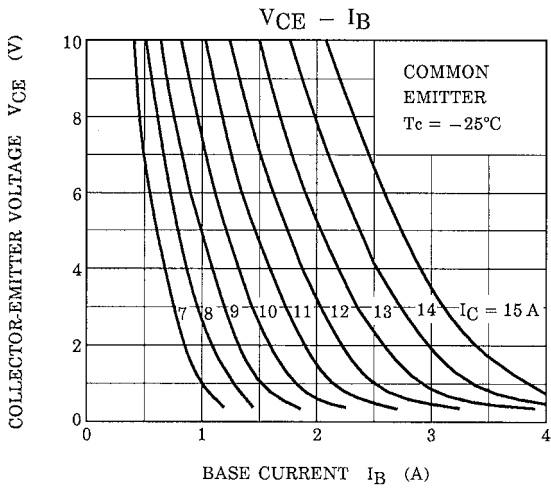
## MAXIMUM RATINGS ( $T_c = 25^\circ\text{C}$ )

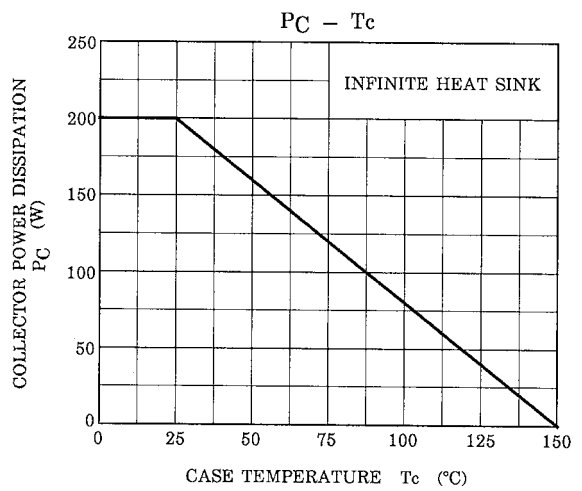
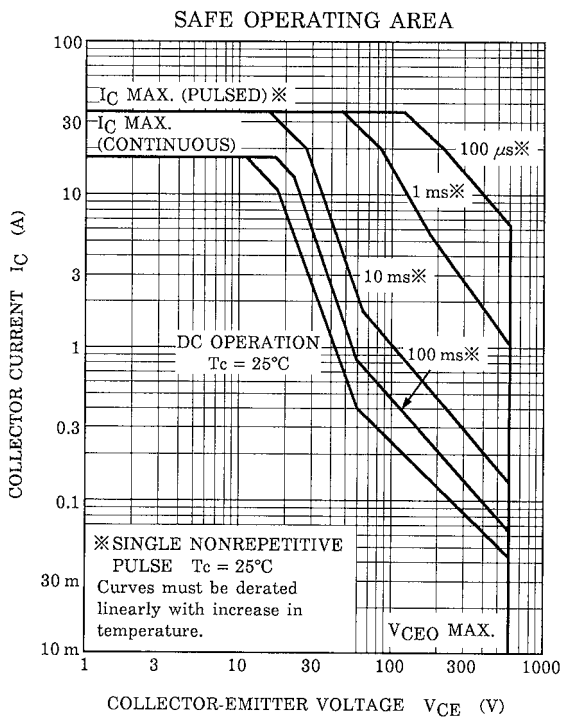
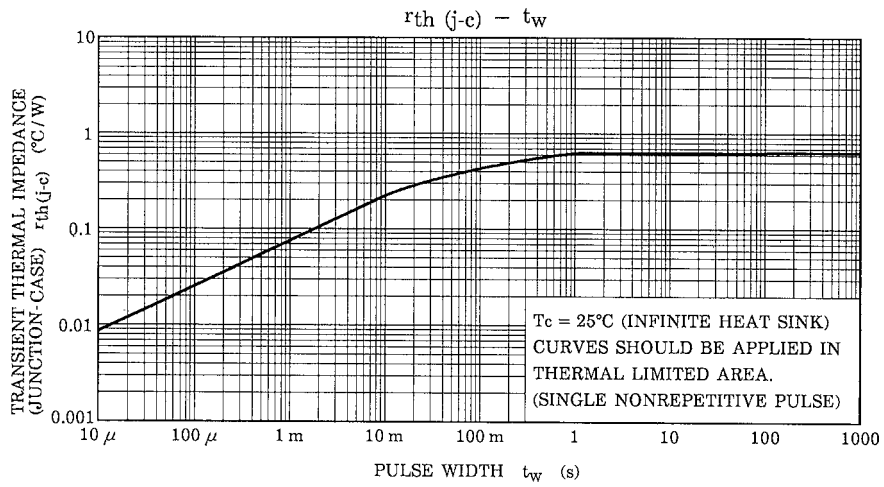
| CHARACTERISTIC              | SYMBOL    | RATING   | UNIT             |
|-----------------------------|-----------|----------|------------------|
| Collector-Base Voltage      | $V_{CBO}$ | 1700     | V                |
| Collector-Emitter Voltage   | $V_{CEO}$ | 600      | V                |
| Emitter-Base Voltage        | $V_{EBO}$ | 5        | V                |
| Collector Current           | DC        | $I_C$    | 18               |
|                             | Pulse     | $I_{CP}$ | 36               |
| Base Current                | $I_B$     | 9        | A                |
| Collector Power Dissipation | $P_C$     | 200      | W                |
| Junction Temperature        | $T_j$     | 150      | $^\circ\text{C}$ |
| Storage Temperature Range   | $T_{stg}$ | -55~150  | $^\circ\text{C}$ |

## ELECTRICAL CHARACTERISTICS ( $T_c = 25^\circ\text{C}$ )

| CHARACTERISTIC                       | SYMBOL        | TEST CONDITION                                    | MIN | TYP. | MAX | UNIT          |
|--------------------------------------|---------------|---|-----|------|-----|---------------|
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB} = 1700\text{ V}, I_E = 0$                 | —   | —    | 1   | mA            |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB} = 5\text{ V}, I_C = 0$                    | —   | —    | 10  | $\mu\text{A}$ |
| Emitter-Base Breakdown Voltage       | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}, I_B = 0$                     | 600 | —    | —   | V             |
| DC Current Gain                      | $h_{FE(1)}$   | $V_{CE} = 5\text{ V}, I_C = 2\text{ A}$           | 10  | —    | 40  | —             |
|                                      | $h_{FE(2)}$   | $V_{CE} = 5\text{ V}, I_C = 9\text{ A}$           | 6   | —    | 13  |               |
|                                      | $h_{FE(3)}$   | $V_{CE} = 5\text{ V}, I_C = 14\text{ A}$          | 4   | —    | 8   |               |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 14\text{ A}, I_B = 3.5\text{ A}$           | —   | —    | 3   | V             |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 14\text{ A}, I_B = 3.5\text{ A}$           | —   | 1.0  | 1.5 | V             |
| Transition Frequency                 | $f_T$         | $V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$        | —   | 1.7  | —   | MHz           |
| Collector Output Capacitance         | $C_{ob}$      | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —   | 290  | —   | pF            |
| Switching Time                       | Storage Time  | $t_{stg(1)}$                                      | —   | 2.5  | 3.5 | $\mu\text{s}$ |
|                                      | Fall Time     | $t_f(1)$  |     |      |     |               |
|                                      | Storage Time  | $t_{stg(2)}$                                      | —   | 2.1  | 2.3 | $\mu\text{s}$ |
|                                      | Fall Time     | $t_f(2)$  |     |      |     |               |







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