

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

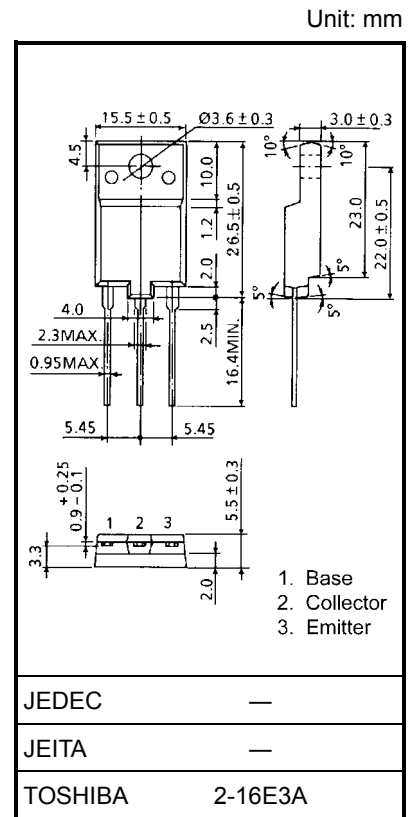
2SD2539

HORIZONTAL DEFLECTION OUTPUT FOR COLOR TV

- High Voltage : $V_{CBO} = 1500\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = 5\text{ V (Max.)}$
- High Speed : $t_f = 0.3\text{ }\mu\text{s (Typ.)}$
- Built-in Damper Type
- Collector Metal (Fin) is Fully Covered with Mold Resin.

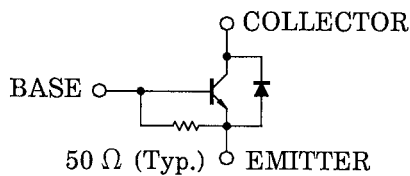
MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|-----------|----------|------------------|
| Collector-Base Voltage | V_{CBO} | 1500 | V |
| Collector-Emitter Voltage | V_{CEO} | 600 | V |
| Emitter-Base Voltage | V_{EBO} | 5 | V |
| Collector Current | DC | I_C | 7 |
| | Pulse | I_{CP} | 14 |
| Base Current | I_B | 3.5 | A |
| Collector Power Dissipation | P_C | 50 | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55~150 | $^\circ\text{C}$ |



Weight: 5.5 g (typ.)

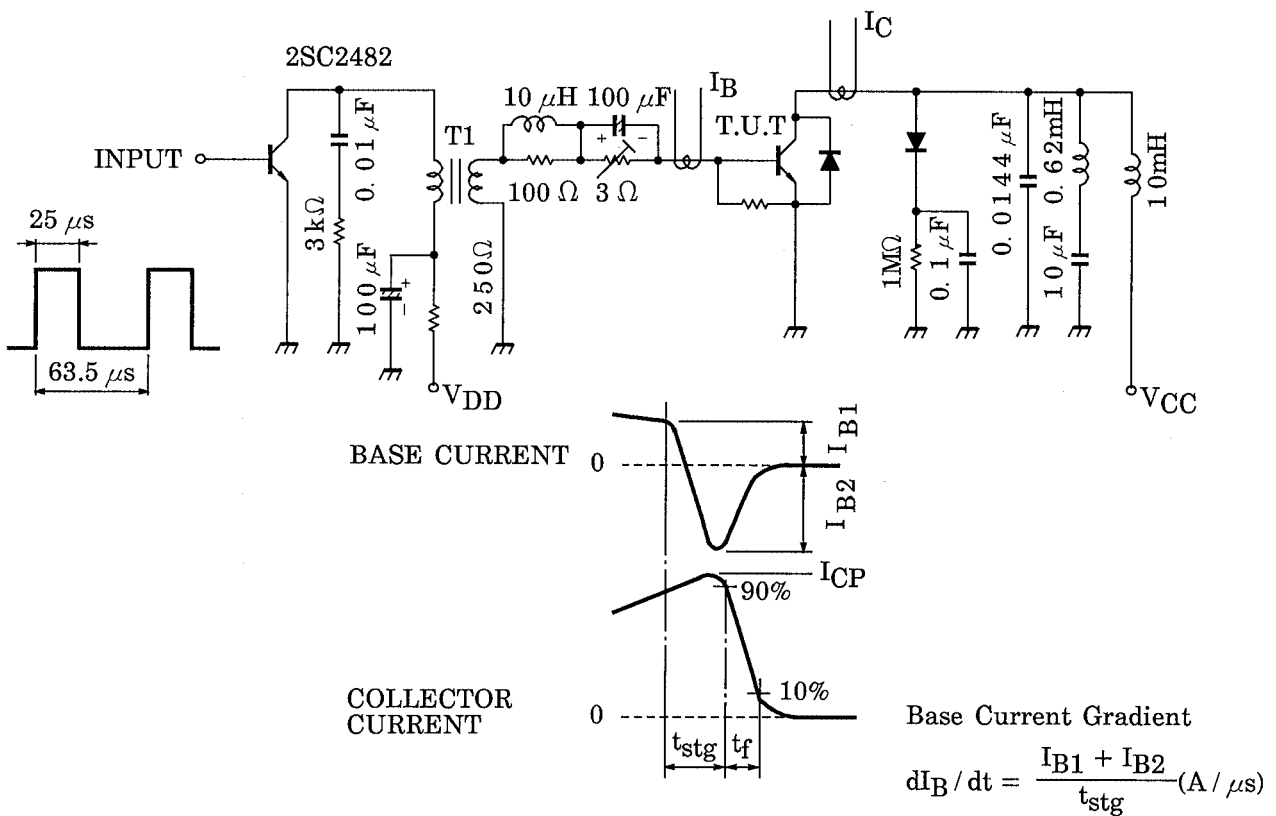
EQUIVALENT CIRCUIT

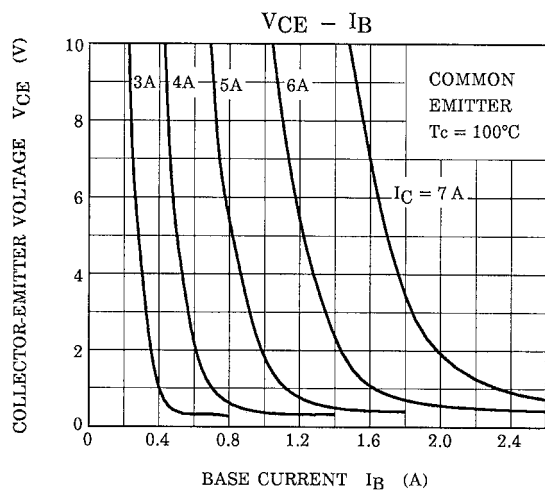
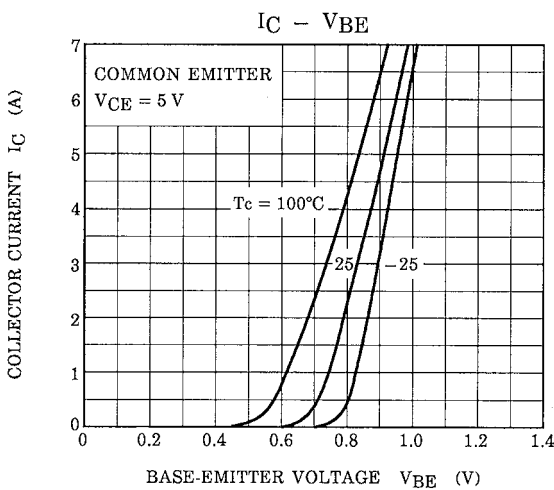
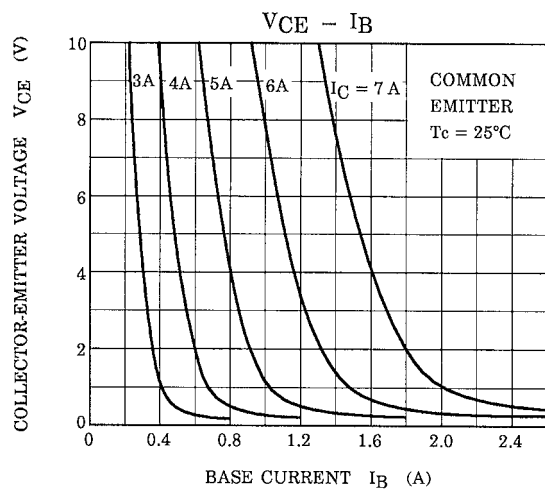
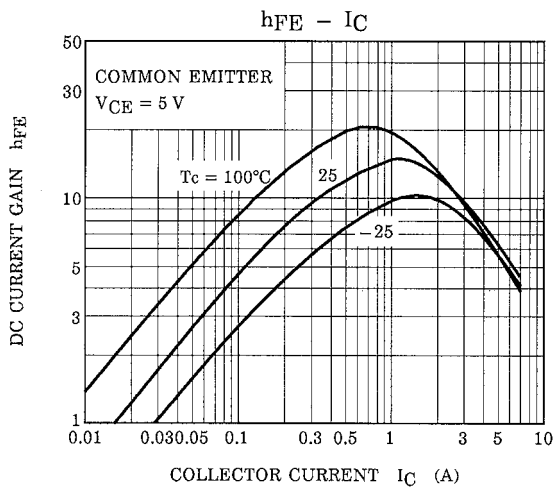
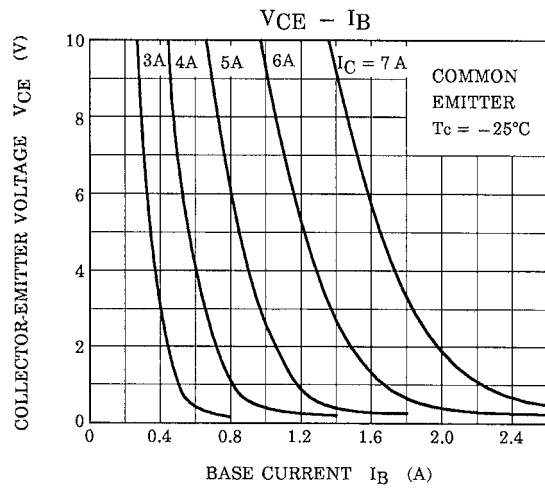
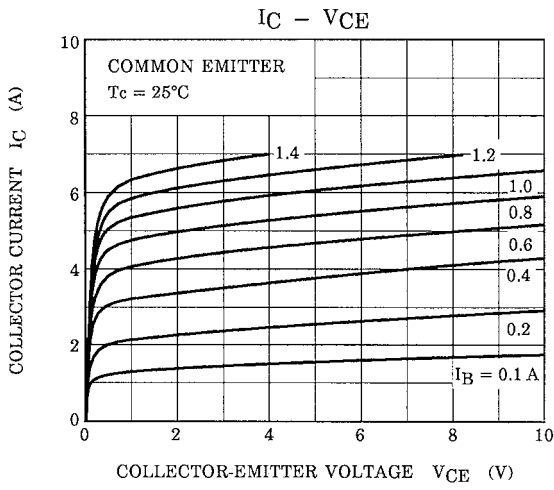


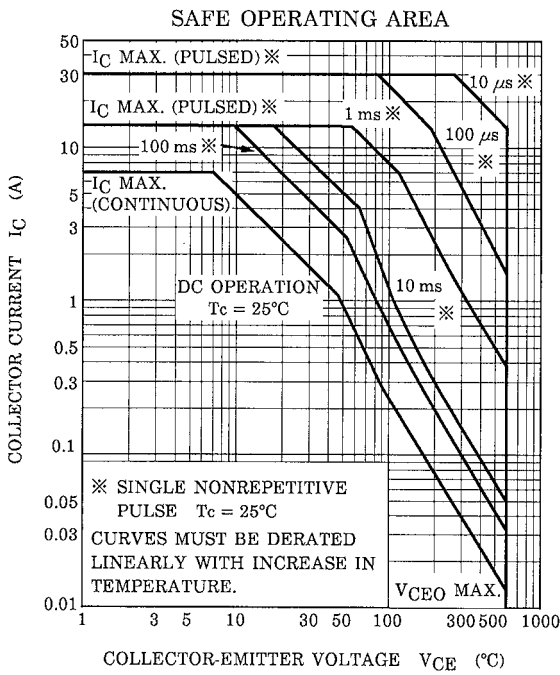
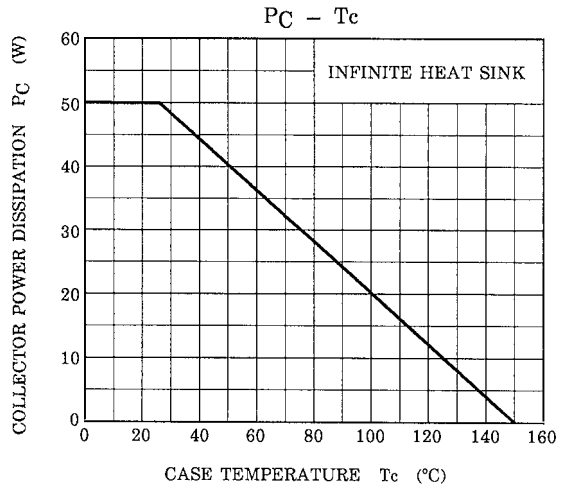
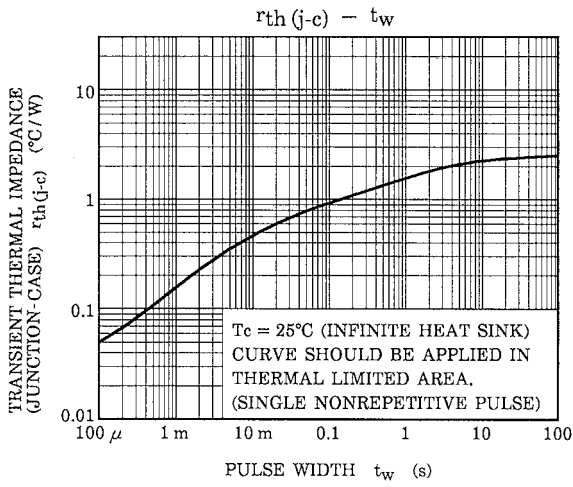
ELECTRICAL CHARACTERISTICS (T_c = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN | TYP. | MAX | UNIT |
|--------------------------------------|-----------------------|--|-----|------|-----|------|
| Collector Cut-off Current | I _{CBO} | V _{CB} = 1500 V, I _E = 0 | — | — | 1 | mA |
| Emitter Cut-off Current | I _{EBO} | V _{EB} = 5 V, I _C = 0 | 66 | — | 200 | mA |
| Emitter-Base Breakdown Voltage | V _{(BR) EBO} | I _C = 400 mA, I _B = 0 | 5 | — | — | V |
| DC Current Gain | h _{FE} (1) | V _{CE} = 5 V, I _C = 1 A | 8 | — | 28 | — |
| | h _{FE} (2) | V _{CE} = 5 V, I _C = 5 A | 5 | — | 9 | |
| Collector-Emitter Saturation Voltage | V _{CE (sat)} | I _C = 5 A, I _B = 1.0 A | — | — | 5 | V |
| Base-Emitter Saturation Voltage | V _{BE (sat)} | I _C = 5 A, I _B = 1.0 A | — | 1.0 | 1.3 | V |
| Forward Voltage (Damper Diode) | V _F | I _F = 5 A | — | 1.6 | 2.0 | V |
| Transition Frequency | f _T | V _{CE} = 10 V, I _C = 0.1 A | — | 2 | — | MHz |
| Collector Output Capacitance | C _{ob} | V _{CB} = 10 V, I _E = 0, f = 1 MHz | — | 115 | — | pF |
| Switching Time | Storage Time | I _{CP} = 5 A, I _{B1} (end) = 1.0 A f _H = 15.75 kHz | — | 6 | 9 | μs |
| | Fall Time | | — | 0.3 | 0.6 | |

Fig.1 SWITCHING TIME TEST CIRCUIT







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