

TOSHIBA Transistor Silicon NPN Triple Diffused Mesa Type

## 2SD2559

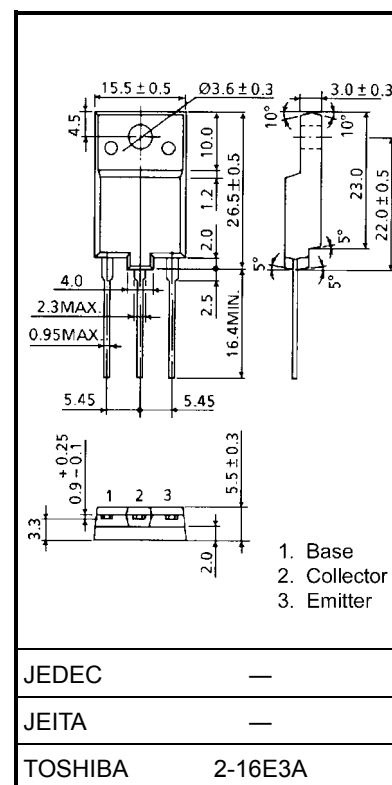
## Horizontal Deflection Output for Color TV

Unit: mm

- High voltage:  $V_{CBO} = 1500\text{ V}$
- Low saturation voltage:  $V_{CE(sat)} = 5\text{ V (max)}$
- Built-in damper type
- Collector metal (fin) is fully covered with mold resin.

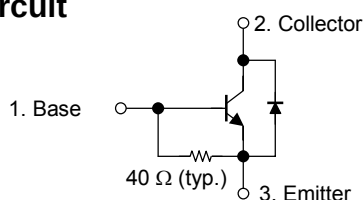
Maximum Ratings ( $T_c = 25^\circ\text{C}$ )

| Characteristics             |       | 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    | $I_C$     | 8       | A                |
|                             | Pulse | $I_{CP}$  | 16      |                  |
| Base current                |       | $I_B$     | 4       | A                |
| Collector power dissipation |       | $P_C$     | 50      | W                |
| Junction temperature        |       | $T_j$     | 150     | $^\circ\text{C}$ |
| Storage temperature range   |       | $T_{stg}$ | -55~150 | $^\circ\text{C}$ |

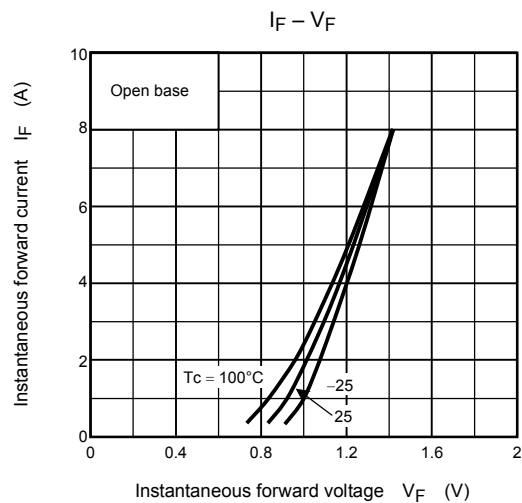
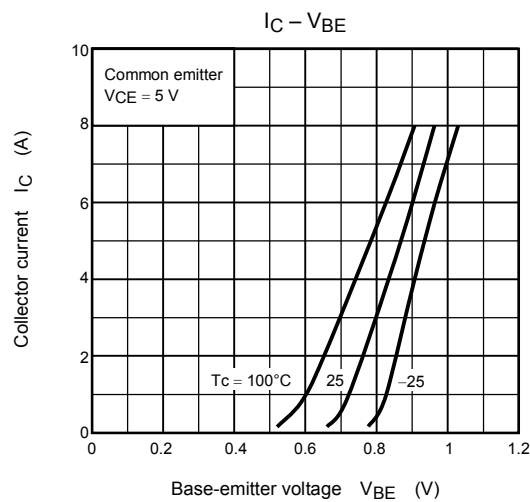
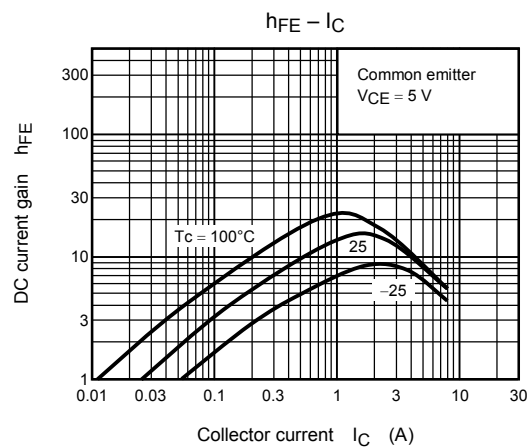
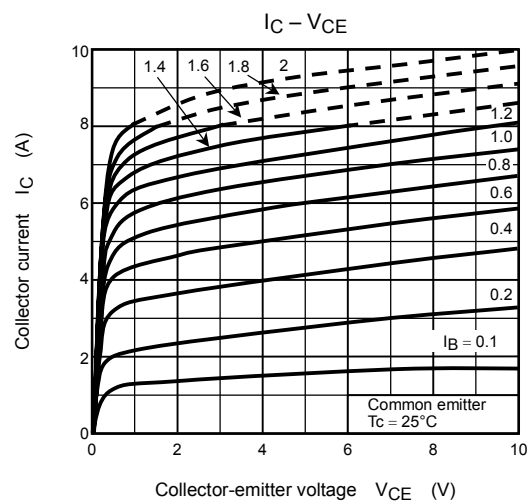


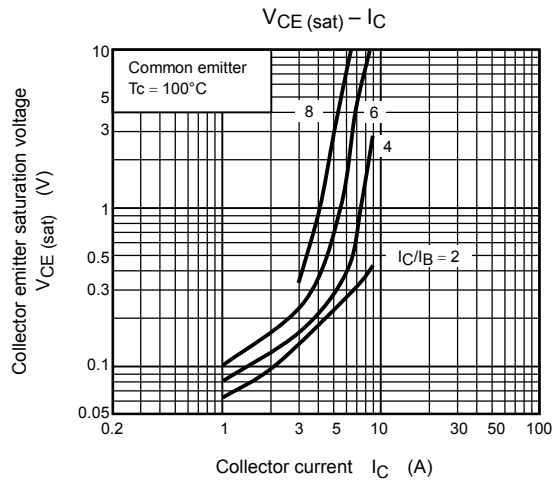
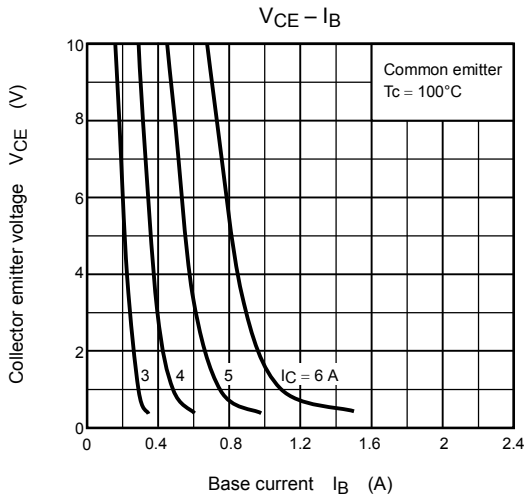
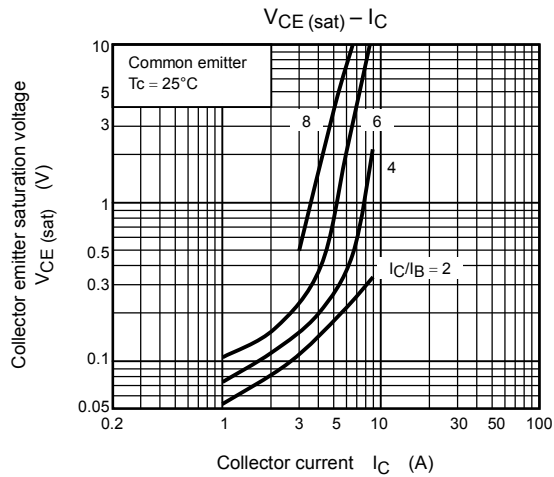
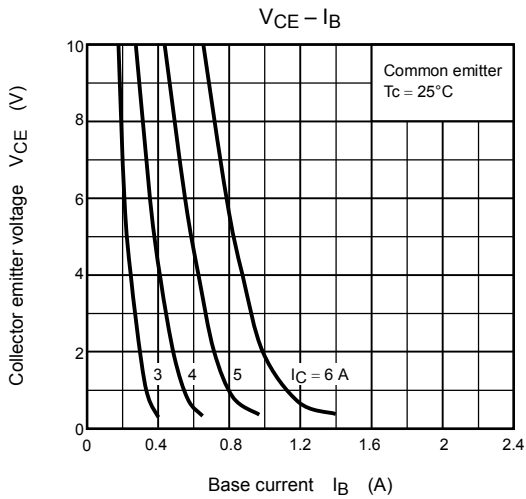
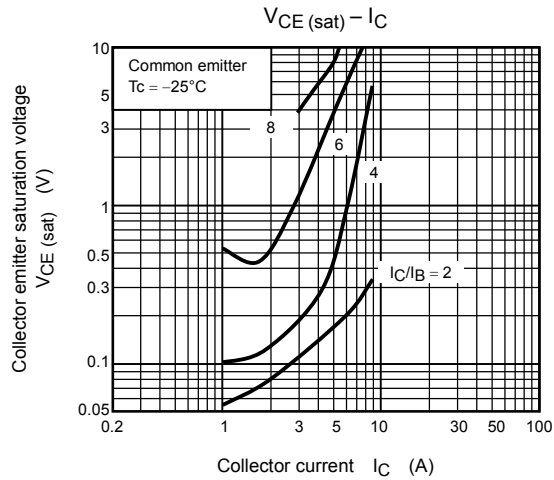
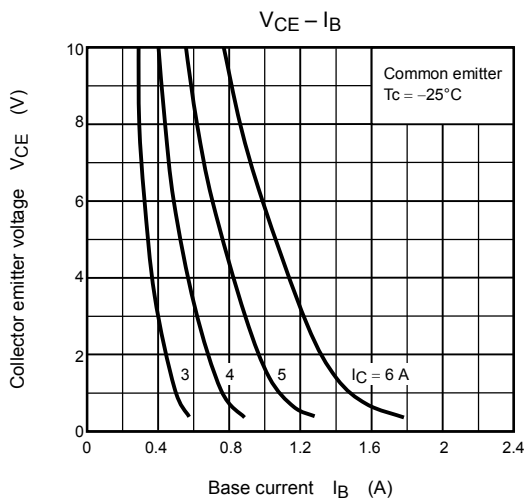
Weight: 5.5 g (typ.)

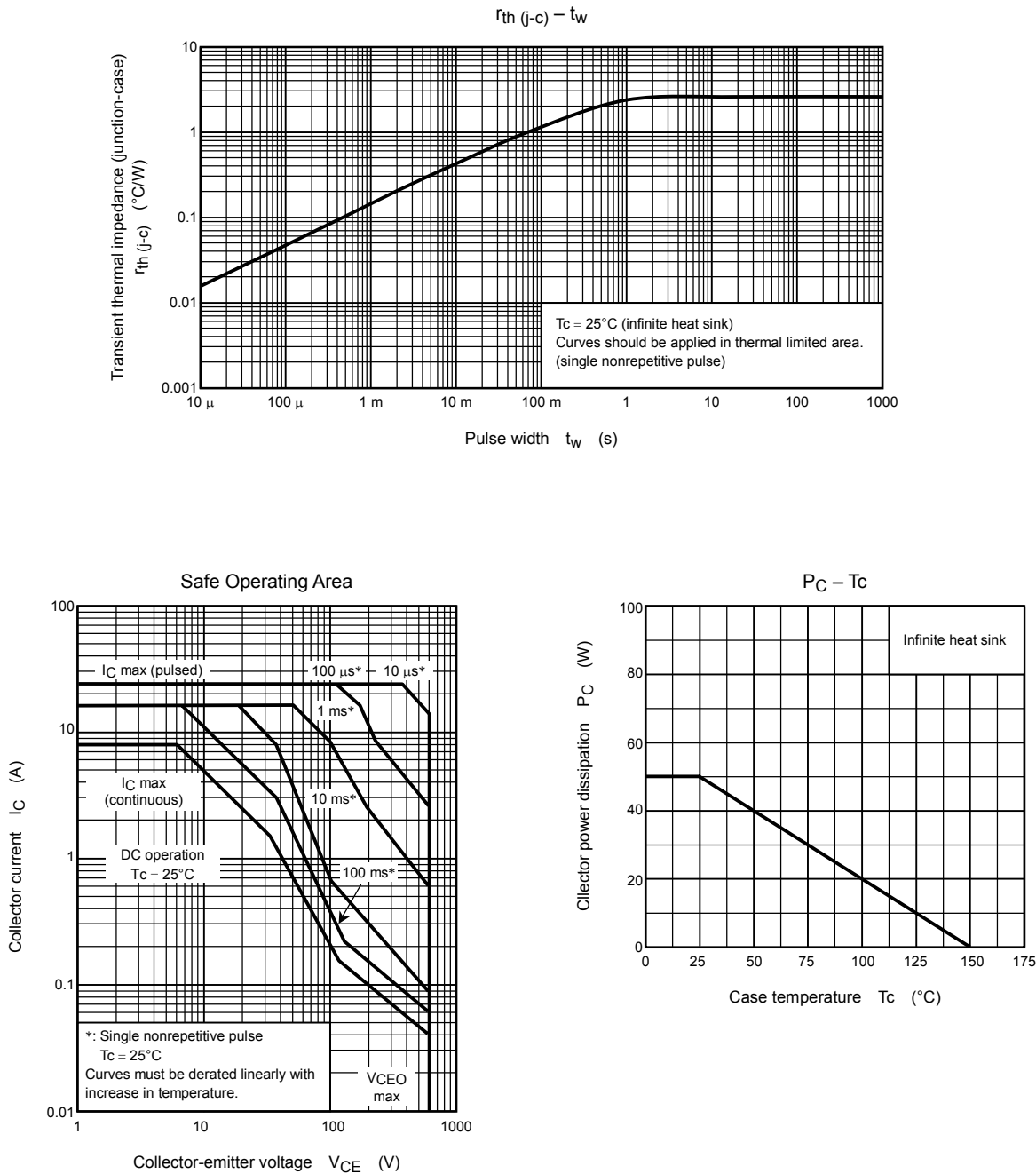
## Equivalent Circuit

Electrical Characteristics ( $T_c = 25^\circ\text{C}$ )

| Characteristics                      | Symbol         | Test Condition                                                                   | Min | Typ. | Max | Unit          |
|--------------------------------------|----------------|----------------------------------------------------------------------------------|-----|------|-----|---------------|
| Collector cut-off current            | $I_{CBO}$      | $V_{CB} = 1500\text{ V}, I_E = 0$                                                | —   | —    | 1   | mA            |
| Emitter cut-off current              | $I_{EBO}$      | $V_{EB} = 5\text{ V}, I_C = 0$                                                   | 83  | —    | 250 | mA            |
| Emitter-base breakdown voltage       | $V_{(BR) EBO}$ | $I_E = 300\text{ mA}, I_B = 0$                                                   | 5   | —    | —   | V             |
| DC current gain                      | $h_{FE(1)}$    | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$                                          | 10  | —    | 30  | —             |
|                                      | $h_{FE(2)}$    | $V_{CE} = 5\text{ V}, I_C = 6\text{ A}$                                          | 5   | —    | 9   |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$  | $I_C = 6\text{ A}, I_B = 1.2\text{ A}$                                           | —   | —    | 5   | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$  | $I_C = 6\text{ A}, I_B = 1.2\text{ A}$                                           | —   | —    | 1.5 | V             |
| Forward voltage (damper diode)       | $V_F$          | $I_F = 6\text{ A}$                                                               | —   | —    | 1.8 | V             |
| Transition frequency                 | $f_T$          | $V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$                                       | —   | 2    | —   | MHz           |
| Collector output capacitance         | $C_{ob}$       | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$                                | —   | 125  | —   | pF            |
| Switching time                       | Storage time   | $I_{CP} = 6\text{ A}, I_{B1}(\text{end}) = 1.2\text{ A}, f_H = 15.75\text{ kHz}$ | —   | 6    | 8.5 | $\mu\text{s}$ |
|                                      | Fall time      |                                                                                  | —   | 0.4  | 0.7 |               |







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