

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

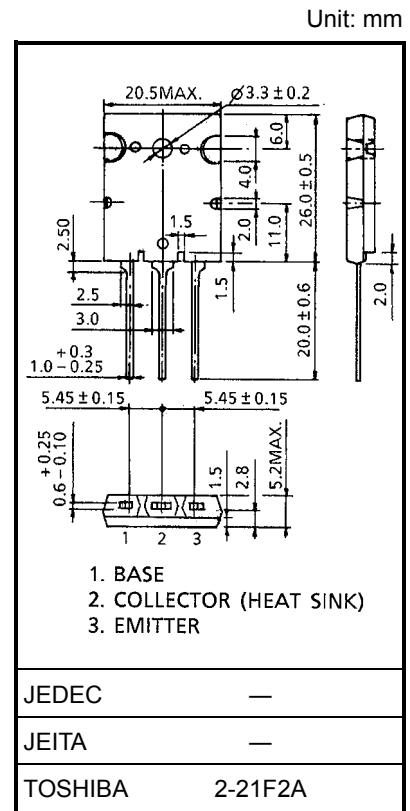
2SC5590

HORIZONTAL DEFLECTION OUTPUT FOR SUPER
HIGH RESOLUTION DISPLAY, COLOR TV FOR
MULTI-MEDIA & HDTV
HIGH SPEED SWITCHING APPLICATIONS

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

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

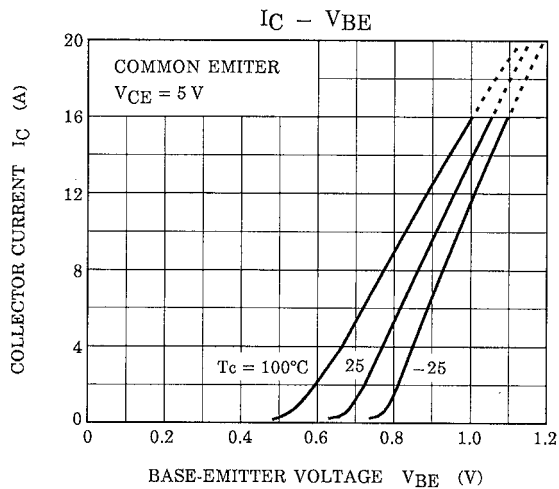
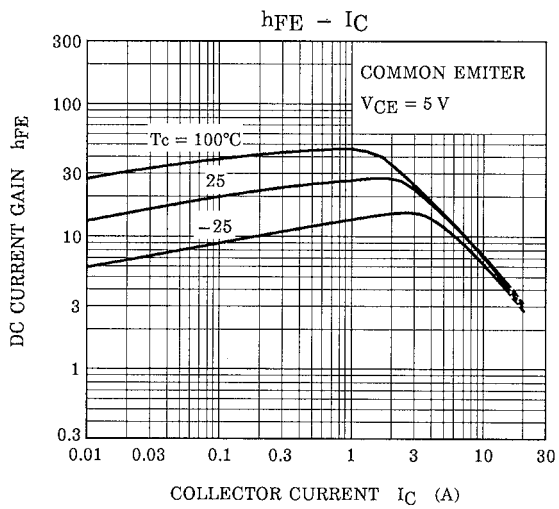
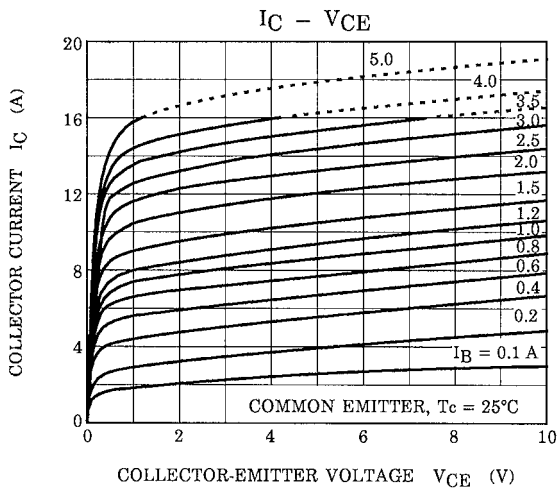
| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|-------|-----------|---------|------------------|
| Collector-Base Voltage | | V_{CBO} | 1700 | V |
| Collector-Emitter Voltage | | V_{CEO} | 800 | V |
| Emitter-Base Voltage | | V_{EBO} | 5 | V |
| Collector Current | DC | I_C | 16 | A |
| | Pulse | I_{CP} | 32 | |
| Base Current | | I_B | 8 | A |
| Collector Power Dissipation | | P_C | 200 | W |
| Junction Temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | -55~150 | $^\circ\text{C}$ |

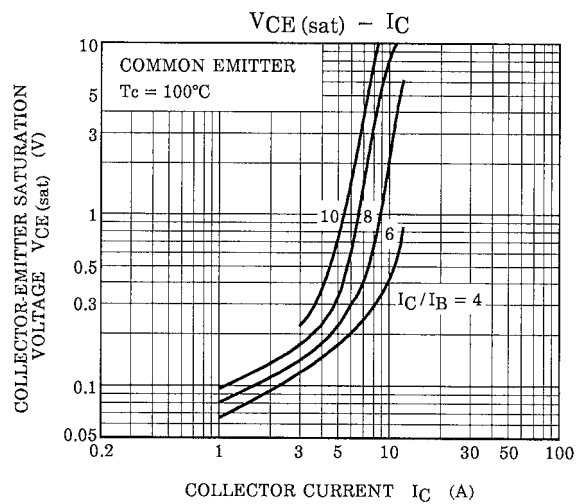
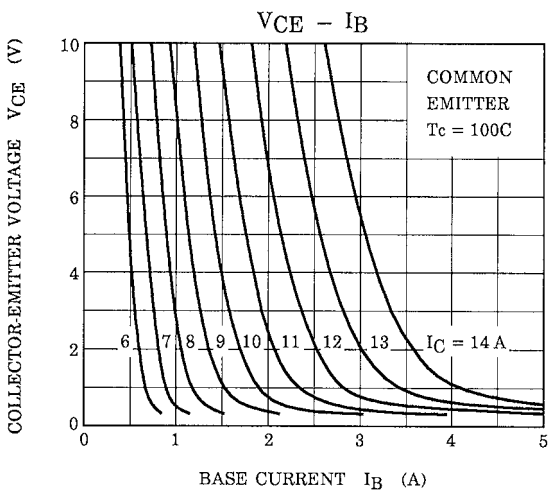
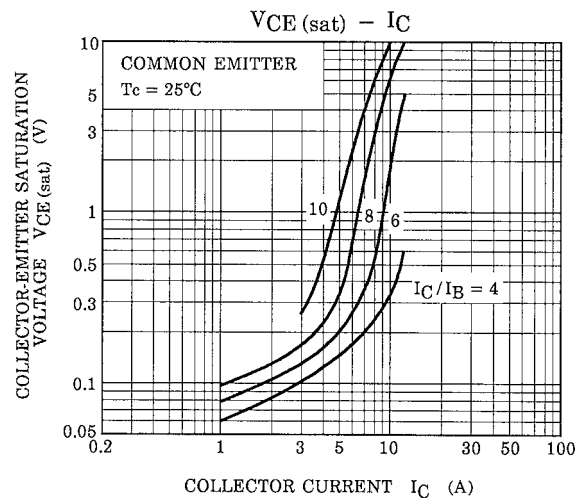
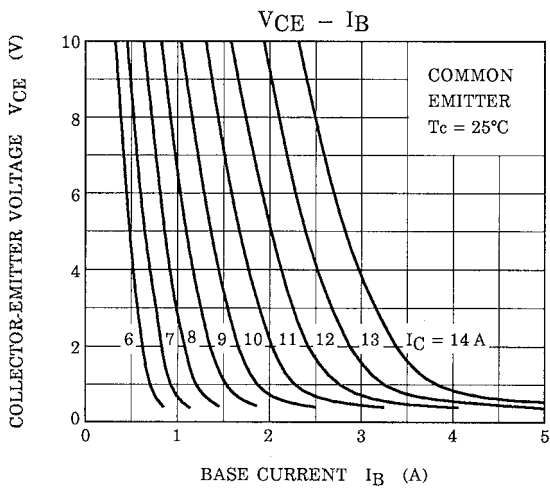
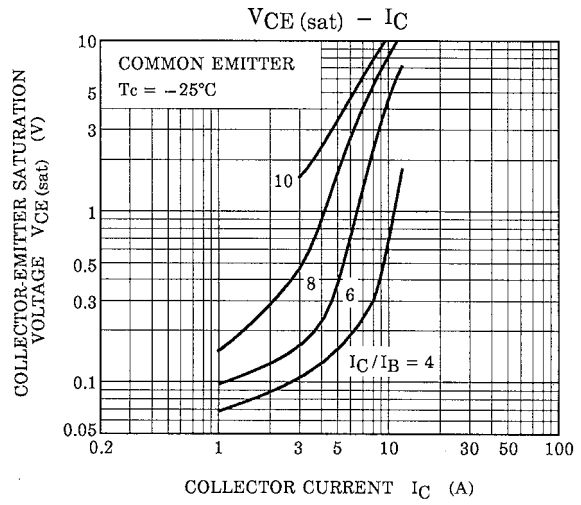
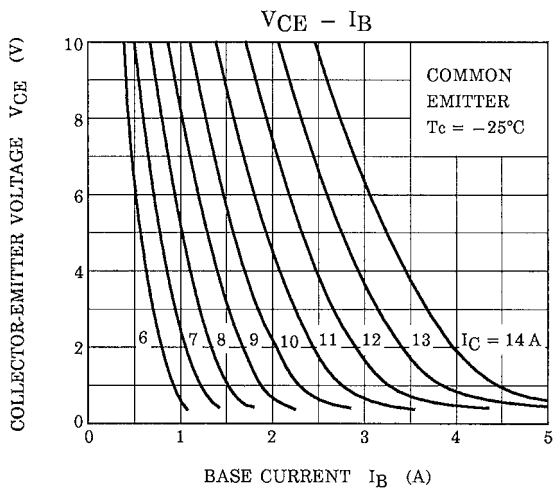


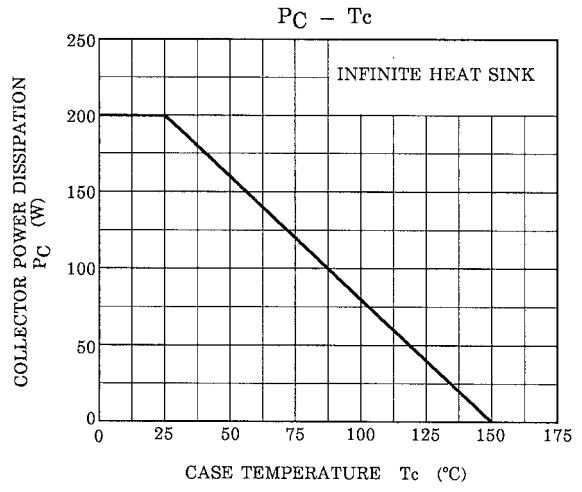
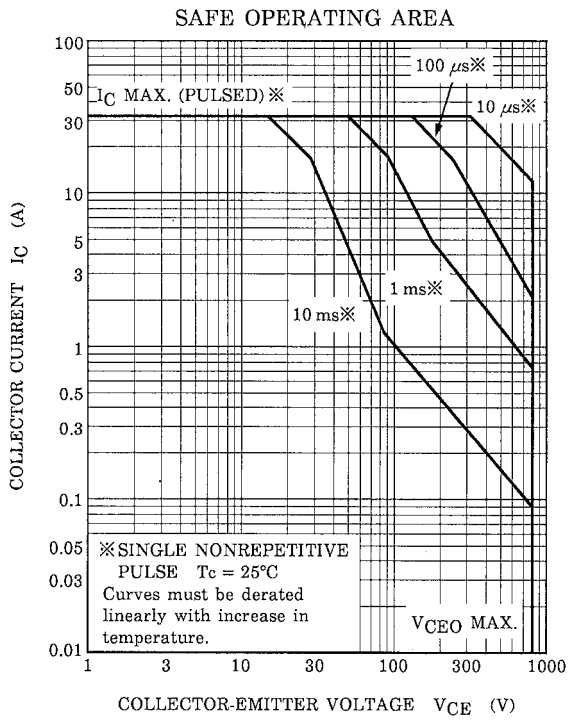
Weight: 9.75 g (typ.)

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} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 100 | μA |
| Collector-Emitter Breakdown Voltage | | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}, I_B = 0$ | 800 | — | — | V |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE} = 5\text{ V}, I_C = 2\text{ A}$ | 22 | — | 45 | — | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{ V}, I_C = 9\text{ A}$ | 6.5 | — | 12 | | |
| | $h_{FE(3)}$ | $V_{CE} = 5\text{ V}, I_C = 12\text{ A}$ | 4.8 | — | 8 | | |
| Collector-Emitter Saturation Voltage | | $V_{CE(sat)}$ | $I_C = 12\text{ A}, I_B = 3\text{ A}$ | — | — | 3 | V |
| Base-Emitter Saturation Voltage | | $V_{BE(sat)}$ | $I_C = 12\text{ A}, I_B = 3\text{ A}$ | — | 1.0 | 1.5 | V |
| Transition Frequency | | f_T | $V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$ | — | 2 | — | MHz |
| Collector Output Capacitance | | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 240 | — | pF |
| Switching Time | Storage Time | $t_{stg(1)}$ | $I_{CP} = 9\text{ A}, I_{B1}(\text{end}) = 1.1\text{ A}$ | — | 3.5 | 4 | μs |
| | Fall Time | $t_f(1)$ | $f_H = 32\text{ kHz}$ | — | 0.25 | 0.35 | |
| | Storage Time | $t_{stg(2)}$ | $I_{CP} = 6.5\text{ A}, I_{B1}(\text{end}) = 1\text{ A}$ | — | 1.8 | 2 | μs |
| | Fall Time | $t_f(2)$ | $f_H = 100\text{ kHz}$ | — | 0.1 | 0.15 | |







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