

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED MESA TYPE

2SC5589

HORIZONTAL DEFLECTION OUTPUT FOR SUPER HIGH RESOLUTION DISPLAY, COLOR TV

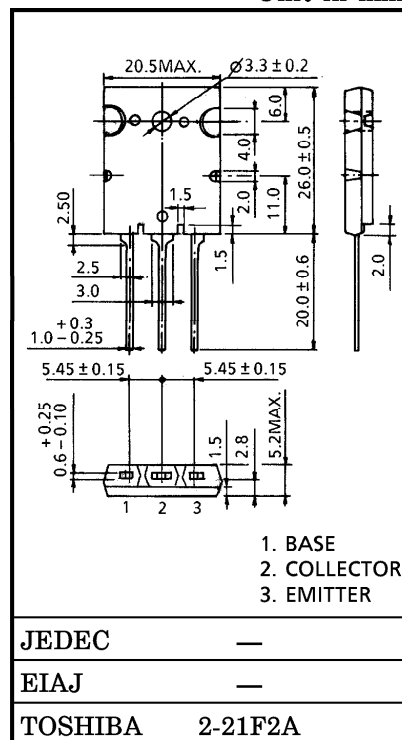
HIGH SPEED SWITCHING APPLICATIONS

- High Voltage : $V_{CBO} = 1500\text{ V}$
- Low Saturation Voltage : $V_{CE(sat)} = 3\text{ V (Max.)}$
- High Speed : $t_f(2) = 0.1\ \mu\text{s (Typ.)}$

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

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|--|-----------|----------|------------------|
| Collector-Base Voltage | V_{CBO} | 1500 | V |
| Collector-Emitter Voltage | V_{CEO} | 750 | 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 ($T_c = 25^\circ\text{C}$) | P_C | 200 | W |
| Junction Temperature | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | -55~150 | $^\circ\text{C}$ |

Unit in mm



Weight : 9.75 g (Typ.)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | 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} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 100 | μA | |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}, I_B = 0$ | 750 | — | — | V | |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE} = 5\text{ V}, I_C = 2\text{ A}$ | 22 | — | 48 | — | |
| | $h_{FE(2)}$ | $V_{CE} = 5\text{ V}, I_C = 7\text{ A}$ | 9 | — | 18 | | |
| | $h_{FE(3)}$ | $V_{CE} = 5\text{ V}, I_C = 14\text{ A}$ | 5 | — | 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 | $V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}$ | — | 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 | $t_{stg(1)}$ | $I_{CP} = 9\text{ A}, I_{B1}(\text{end}) = 1.3\text{ A}$ | — | 2.7 | 3 | μs |
| | Fall Time | $t_f(1)$ | $f_H = 64\text{ kHz}$ | — | 0.2 | 0.3 | |
| | Storage Time | $t_{stg(2)}$ | $I_{CP} = 7.5\text{ A}, I_{B1}(\text{end}) = 1.1\text{ A}$ | — | 1.8 | 2 | μs |
| | Fall Time | $t_f(2)$ | $f_H = 100\text{ kHz}$ | — | 0.1 | 0.15 | |

