

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1244

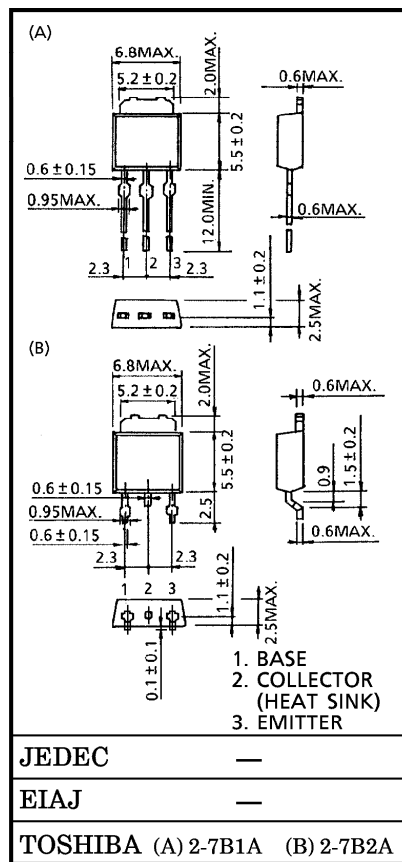
HIGH CURRENT SWITCHING APPLICATIONS

Unit in mm

- Low Collector Saturation Voltage
: $V_{CE(sat)} = -0.4\text{ V (Max.) at } I_C = -3\text{ A}$
- High Speed Switching Time : $t_{stg} = 1.0\ \mu\text{s (Typ.)}$
- Complementary to 2SC3074

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

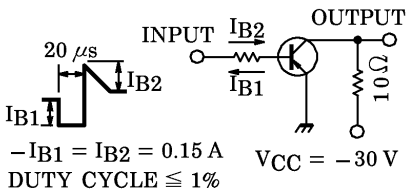
| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|--------------------------|-----------|---------|------------------|
| Collector-Base Voltage | | V_{CBO} | -60 | V |
| Collector-Emitter Voltage | | V_{CEO} | -50 | V |
| Emitter-Base Voltage | | V_{EBO} | -5 | V |
| Collector Current | | I_C | -5 | A |
| Base Current | | I_B | -1 | A |
| Collector Power Dissipation | $T_a = 25^\circ\text{C}$ | P_C | 1.0 | W |
| | $T_c = 25^\circ\text{C}$ | | 20 | |
| Junction Temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | -55~150 | $^\circ\text{C}$ |



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|-------------------|-----------------------|--|------|------|------|---------------|
| Collector Cut-off Current | | I_{CBO} | $V_{CB} = -50\text{ V}, I_E = 0$ | — | — | -1 | μA |
| Emitter Cut-off Current | | I_{EBO} | $V_{EB} = -5\text{ V}, I_C = 0$ | — | — | -1 | μA |
| Collector-Emitter Breakdown Voltage | | $V_{(BR)CEO}$ | $I_C = -10\text{ mA}, I_B = 0$ | -50 | — | — | V |
| DC Current Gain | | $h_{FE(1)}$ (Note) | $V_{CE} = -1\text{ V}, I_C = -1\text{ A}$ | 70 | — | 240 | |
| | | $h_{FE(2)}$ | $V_{CE} = -1\text{ V}, I_C = -3\text{ A}$ | 30 | — | — | |
| Saturation Voltage | Collector-Emitter | $V_{CE(sat)}$ | $I_C = -3\text{ A}, I_B = -0.15\text{ A}$ | — | -0.2 | -0.4 | V |
| | Base-Emitter | $V_{BE(sat)}$ | $I_C = -3\text{ A}, I_B = -0.15\text{ A}$ | — | -0.9 | -1.2 | |
| Transition Frequency | | f_T | $V_{CE} = -4\text{ V}, I_C = -1\text{ A}$ | — | 60 | — | MHz |
| Collector Output Capacitance | | C_{ob} | $V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$ | — | 170 | — | pF |
| Switching Time | Turn-on Time | t_{on} |  <p> $-I_{B1} = I_{B2} = 0.15\text{ A}$ DUTY CYCLE $\leq 1\%$ $V_{CC} = -30\text{ V}$ </p> | — | 0.1 | — | μs |
| | Storage Time | t_{stg} | | — | 1.0 | — | |
| | Fall Time | t_f | | — | 0.1 | — | |

Note : $h_{FE(1)}$ Classification O : 70~140 Y : 120~240

