

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3074

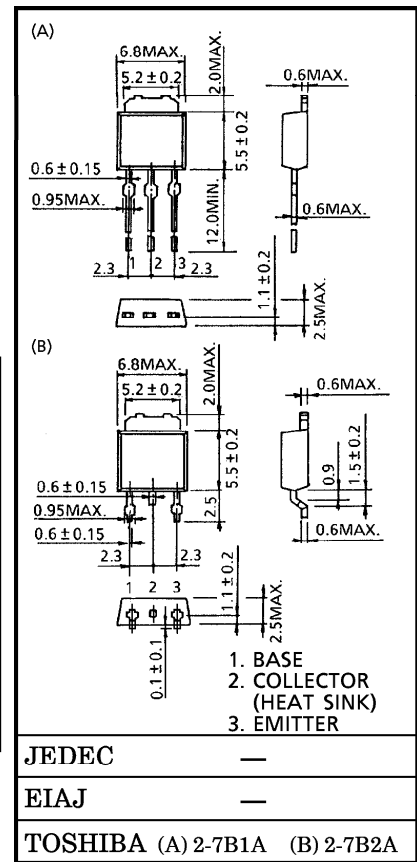
HIGH CURRENT SWITCHING APPLICATIONS

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 2SA1244

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

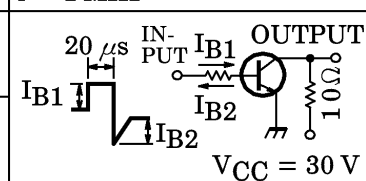
| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|--------------------------|-----------|---------|------------------|
| Collector-Base Voltage | | V_{CBO} | 60 | V |
| Collector-Emitter Voltage | | V_{CEO} | 50 | V |
| Emitter-Base Voltage | | V_{EBO} | 5 | V |
| Collector 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 | | ICBO | V _{CB} = 50 V, I _E = 0 | — | — | 1 | μA |
| Emitter Cut-off Current | | IEBO | V _{EB} = 5 V, I _C = 0 | — | — | 1 | μA |
| Collector-Emitter Breakdown Voltage | | V (BR) CEO | I _C = 10 mA, I _B = 0 | 50 | — | — | V |
| DC Current Gain | | h _{FE} (1) (Note) | V _{CE} = 1 V, I _C = 1 A | 70 | — | 240 | |
| | | h _{FE} (2) | V _{CE} = 1 V, I _C = 3 A | 30 | — | — | |
| Saturation Voltage | Collector-Emitter | V _{CE} (sat) | I _C = 3 A, I _B = 0.15 A | — | 0.2 | 0.4 | V |
| | Base-Emitter | V _{BE} (sat) | I _C = 3 A, I _B = 0.15 A | — | 0.9 | 1.2 | |
| Transition Frequency | | f _T | V _{CE} = 4 V, I _C = 1 A | — | 120 | — | MHz |
| Collector Output Capacitance | | C _{ob} | V _{CB} = 10 V, I _E = 0, f = 1 MHz | — | 80 | — | pF |
| Switching Time | Turn-on Time | t _{on} |  <p style="text-align: center;">V_{CC} = 30 V</p> | — | 0.1 | — | μs |
| | Storage Time | t _{stg} | | — | 1.0 | — | |
| | Fall Time | t _f | | I _{B1} = -I _{B2} = 0.15 A, DUTY CYCLE ≤ 1% | — | 0.1 | |

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

