

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2 S C 4 7 8 1

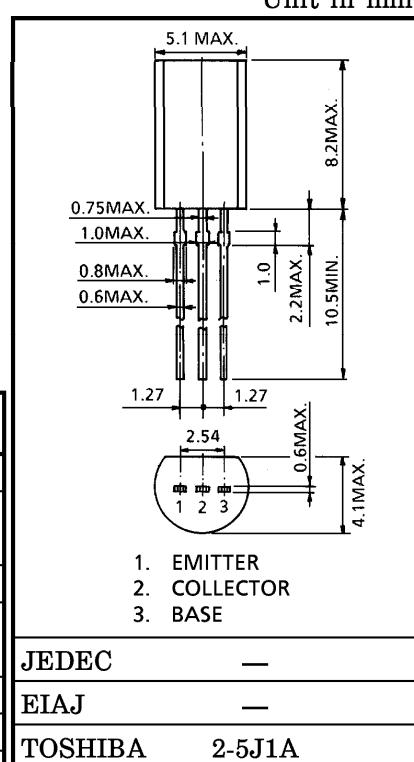
STOROBO FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

- High DC Current Gain and Excellent h_{FE} Linearity
 - : h_{FE} (1) = 200~600 (V_{CE} = 2V, I_C = 1A)
 - : h_{FE} (2) = 300 (Typ.) (V_{CE} = 2V, I_C = 4A)
- Low Saturation Voltage
 - : V_{CE} (sat) = 0.5V (Max.) (I_C = 4A, I_B = 80mA)

MAXIMUM RATINGS (T_a = 25°C)

| CHARACTERISTIC | | SYMBOL | RATING | UNIT |
|-----------------------------|--------|-----------|---------|------|
| Collector-Base Voltage | | V_{CBO} | 30 | V |
| Collector-Emitter Voltage | | V_{CES} | 30 | V |
| | | V_{CEO} | 10 | |
| Emitter-Base Voltage | | V_{EBO} | 6 | V |
| Collector Current | DC | I_C | 4 | A |
| | Pulsed | I_{CP} | 8 | |
| Base Current | | I_B | 0.8 | A |
| Collector Power Dissipation | | P_C | 900 | mW |
| Junction Temperature | | T_j | 150 | °C |
| Storage Temperature Range | | T_{stg} | -55~150 | °C |

ELECTRICAL CHARACTERISTICS (T_a = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------|---|------|------|------|------|
| Collector Cut-off Current | I_{CBO} | $V_{CB} = 30V$, $I_E = 0$ | — | — | 100 | nA |
| Emitter Cut-off Current | I_{EBO} | $V_{EB} = 6V$, $I_C = 0$ | — | — | 100 | nA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 10mA$, $I_B = 0$ | 10 | — | — | V |
| DC Current Gain | h_{FE} (1) | $V_{CE} = 2V$, $I_C = 1A$ | 200 | — | 600 | |
| | h_{FE} (2) | $V_{CE} = 2V$, $I_C = 4A$ | 140 | 300 | — | |
| Collector-Emitter Saturation Voltage | V_{CE} (sat) | $I_C = 4A$, $I_B = 80mA$ | — | 0.28 | 0.5 | V |
| Base-Emitter Voltage | V_{BE} | $V_{CE} = 2V$, $I_C = 4A$ | — | 1.0 | 1.5 | V |
| Transition Frequency | f_T | $V_{CE} = 2V$, $I_C = 0.5A$ | — | 170 | — | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$ | — | 50 | — | pF |

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