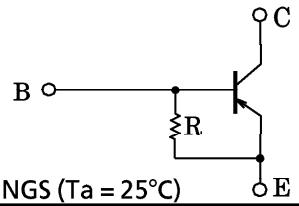
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# RN6002

MOTOR DRIVE CIRCUIT APPLICATIONS.
POWER AMPLIFIER APPLICATIONS.
POWER SWITCHING APPLICATIONS.

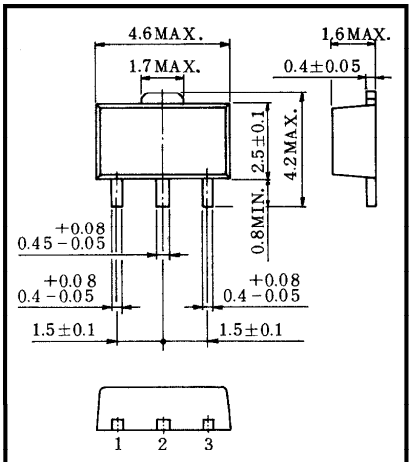
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Small Flat Package
- $P_C$ = 1~2W (Mounted on Ceramic substrate)
- Complementary to RN5002

EQUIVALENT CIRCUIT




R = 5.6kΩ (TYP.)

Unit in mm

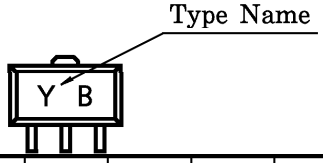



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

| | |
|---|---|
| PW-MINI | |
| JEDEC | — |
| EIAJ | SC-62 |
| TOSHIBA | 2-5K1A |

Weight : 0.05g

MARKING




MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | −30 | V |
| Collector-Emitter Voltage | $V_{CES}$ | −30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | −5 | V |
| Collector Current | $I_C$ | −2 | A |
| Base Current | $I_B$ | −0.4 | A |
| Collector Power Dissipation | $P_C$ | 500 | mW |
| Collector Power Dissipation | $P_C$* | 1000 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~150 | °C |

* : Mounted on ceramic substrate (250mm² × 0.8t)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$ = −30V, $I_E$ = 0 | — | — | −0.1 | μA |
| Emitter Cut-off Current | $I_{EBO}$ | $V_{EB}$ = −5V, $I_C$ = 0 | −0.68 | −0.89 | −1.28 | mA |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C$ = −10mA | −30 | — | — | V |
| DC Current Gain | $h_{FE(1)}$ | $V_{CE}$ = −2V, $I_C$ = −0.5A | 100 | — | 360 | |
| | $h_{FE(2)}$ | $V_{CE}$ = −2V, $I_C$ = −2.0A | 50 | — | — | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$ = −1A, $I_B$ = −0.05A | — | — | −0.5 | V |
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C$ = −1A, $I_B$ = −0.05A | — | — | −1.2 | V |
| Transition Frequency | $f_T$ | $V_{CE}$ = −2V, $I_C$ = −0.5A | — | 120 | — | MHz |
| Collector Output Capacitance | $C_{ob}$ | $V_{CB}$ = −10V, $I_E$ = 0, f = 1MHz | — | 40 | — | pF |
| Resistor | R | | 3.9 | 5.6 | 7.3 | kΩ |

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