

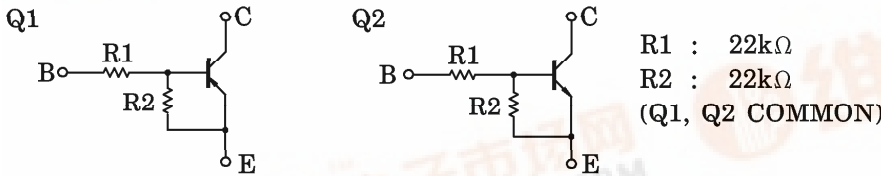
TOSHIBA TRANSISTOR
SILICON PNP EPITAXIAL TYPE (PCT PROCESS) SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN4603

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

- Including Two Devices in SM6 (Super Mini Type with 6 leads)
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



Q1 MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------|------------------|--------|------|
| Collector-Base Voltage | V _{CB0} | -50 | V |
| Collector-Emitter Voltage | V _{CEO} | -50 | V |
| Emitter-Base Voltage | V _{EBO} | -10 | V |
| Collector Current | I _C | -100 | mA |

Q2 MAXIMUM RATINGS (Ta = 25°C)

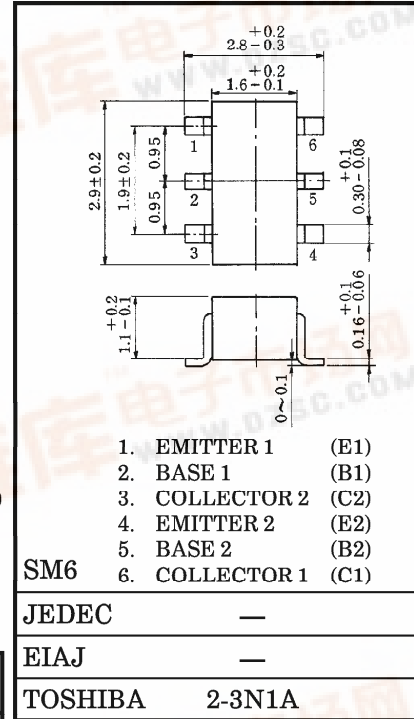
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------|------------------|--------|------|
| Collector-Base Voltage | V _{CB0} | 50 | V |
| Collector-Emitter Voltage | V _{CEO} | 50 | V |
| Emitter-Base Voltage | V _{EBO} | 10 | V |
| Collector Current | I _C | 100 | mA |

Q1, Q2 COMMON MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|-----------------------------|------------------|---------|------|
| Collector Power Dissipation | P _C * | 300 | mW |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature Range | T _{stg} | -55~150 | °C |

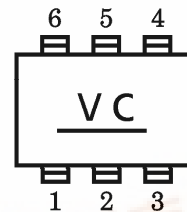
* : Total Rating

Unit in mm

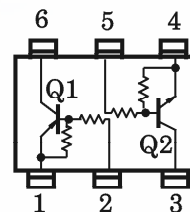


Weight : 0.015g

MARKING



EQUIVALENT CIRCUIT (TOP VIEW)



Q1 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------------|--|-------|------|-------|------|
| Collector Cut-off Current | ICBO | V _{CB} = -50V, I _E = 0 | — | — | -100 | nA |
| | ICEO | V _{CE} = -50V, I _B = 0 | — | — | -500 | |
| Emitter Cut-off Current | I _{EBO} | V _{EB} = -10V, I _C = 0 | -0.17 | — | -0.33 | mA |
| DC Current Gain | h _{FE} | V _{CE} = -5V, I _C = -10mA | 70 | — | — | |
| Collector-Emitter Saturation Voltage | V _{CE(sat)} | I _C = -5mA, I _B = -0.25mA | — | -0.1 | -0.3 | V |
| Input Voltage (ON) | V _{I(ON)} | V _{CE} = -0.2V, I _C = -5mA | -1.3 | — | -3.0 | V |
| Input Voltage (OFF) | V _{I(OFF)} | V _{CE} = -5V, I _C = -0.1mA | -1.0 | — | -1.5 | V |
| Transition Frequency | f _T | V _{CE} = -10V, I _C = -5mA | — | 200 | — | MHz |
| Collector Output Capacitance | C _{ob} | V _{CB} = -10V, I _E = 0, f = 1MHz | — | 3 | 6 | pF |

Q2 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|----------------------|---|------|------|------|------|
| Collector Cut-off Current | ICBO | V _{CB} = 50V, I _E = 0 | — | — | 100 | nA |
| | ICEO | V _{CE} = 50V, I _B = 0 | — | — | 500 | |
| Emitter Cut-off Current | I _{EBO} | V _{EB} = 10V, I _C = 0 | 0.17 | — | 0.33 | mA |
| DC Current Gain | h _{FE} | V _{CE} = 5V, I _C = 10mA | 70 | — | — | |
| Collector-Emitter Saturation Voltage | V _{CE(sat)} | I _C = 5mA, I _B = 0.25mA | — | 0.1 | 0.3 | V |
| Input Voltage (ON) | V _{I(ON)} | V _{CE} = 0.2V, I _C = 5mA | 1.3 | — | 3.0 | V |
| Input Voltage (OFF) | V _{I(OFF)} | V _{CE} = 5V, I _C = 0.1mA | 1.0 | — | 1.5 | V |
| Transition Frequency | f _T | V _{CE} = 10V, I _C = 5mA | — | 250 | — | MHz |
| Collector Output Capacitance | C _{ob} | V _{CB} = 10V, I _E = 0, f = 1MHz | — | 3 | 6 | pF |

Q1, Q2 COMMON ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------|--------|----------------|------|------|------|------|
| Input Resistor | R1 | — | 15.4 | 22 | 28.6 | kΩ |
| Resistor Ratio | R1/R2 | — | 0.9 | 1.0 | 1.1 | |

