

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN6003

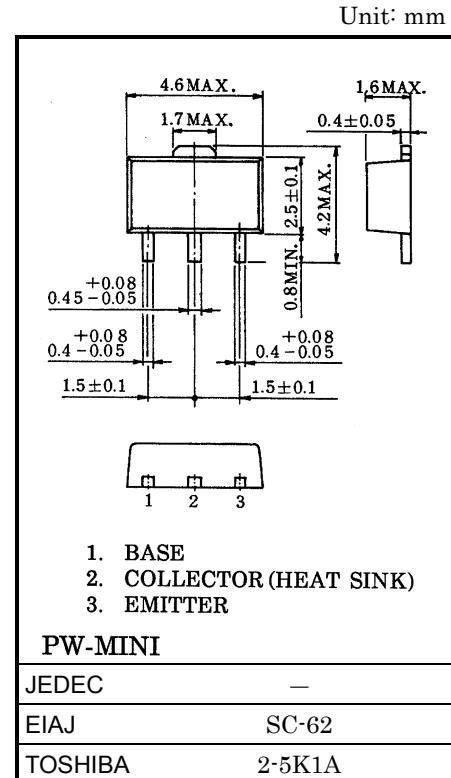
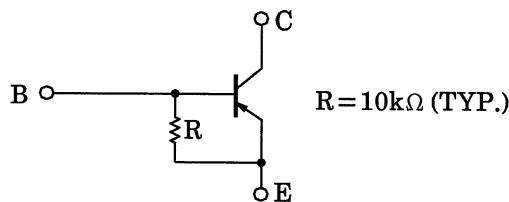
Motor Drive Circuit Applications

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
- PC = 1~2W (mounted on ceramic substrate)
- Complementary to RN5003

Equivalent Circuit



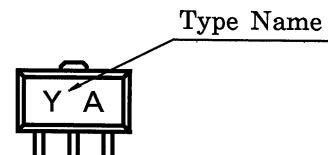
Weight: 0.05g

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

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

Marking



Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	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	-0.385	-0.50	-0.714	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	—	400	—
	h _{FE} (2)		V _{CE} = -2V, I _C = -2.0A	30	—	—	
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 = 1 MHz	—	40	—	pF
Resistor	R	—	—	7	10	13	kΩ

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