

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

## RN6006

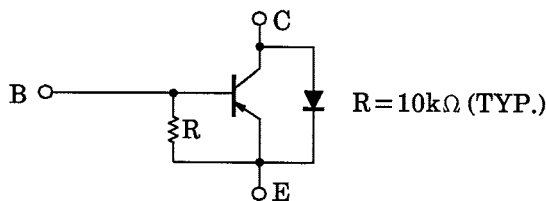
Motor Drive Circuit Applications

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
- $P_C = 1\sim 2W$  (mounted on ceramic substrate)
- Complementary to RN5006

### Equivalent Circuit



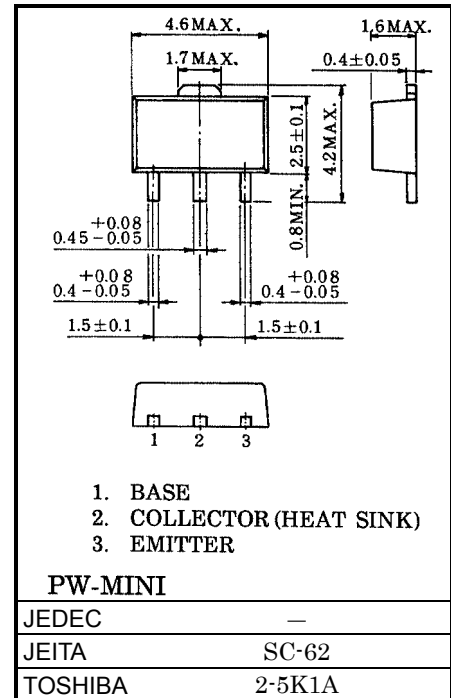
### Maximum Ratings ( $T_a = 25^\circ C$ )

Characteristic	Symbol	Rating	Unit
Collector-base voltage	$V_{CBO}$	-10	V
Collector-emitter voltage	$V_{CEO}$	-10	V
Emitter-base voltage	$V_{EBO}$	-6	V
Collector current	DC	$I_C$	-2
	Pulse (Note1)	$I_{CP}$	-4
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	$^\circ C$
Storage temperature range	$T_{stg}$	-55~150	$^\circ C$

Note: Pulse width  $\leq 10ms$ , duty cycle  $\leq 30\%$

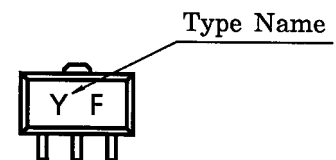
\* : Mounted on ceramic substrate ( $250mm^2 \times 0.8t$ )

Unit: mm



Weight: 0.05g (typ.)

### Marking



## Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	$I_{CBO}$	—	$V_{CB} = -10V, I_E = 0$	—	—	-0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	—	$V_{EB} = -6V, I_C = 0$	-0.462	-0.60	-0.857	mA
Collector-emitter breakdown voltage	$V_{(BR)CES}$	—	$I_C = -1mA$	-10	—	—	V
DC current gain	$h_{FE} (1)$	—	$V_{CE} = -1V, I_C = -0.5A$	160	—	600	—
	$h_{FE} (2)$		$V_{CE} = -1V, I_C = -4.0A$	60	—	—	
Collector-emitter saturation voltage	$V_{CE} (sat)$	—	$I_C = -2A, I_B = -0.05A$	—	—	-0.5	V
Transition frequency	$f_T$	—	$V_{CE} = -1V, I_C = -0.5A$	—	140	—	MHz
Collector output capacitance	$C_{ob}$	—	$V_{CB} = -10V, I_E = 0, f = 1 MHz$	—	55	—	pF
Resistor	R	—	—	7	10	13	k $\Omega$

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