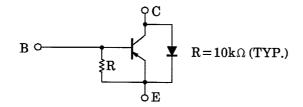
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

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

#### **Equivalent Circuit**



### **Maximum Ratings (Ta = 25°C)**

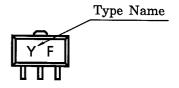
Characteristic		Symbol	Rating	Unit	
Collector-base voltage		$V_{CBO}$	-10	٧	
Collector-emitter voltage		$V_{CEO}$	-10	٧	
Emitter-base voltage		V <sub>EBO</sub>	-6	٧	
Collector current	DC	IC	-2	А	
	Pulse (Note1)	I <sub>CP</sub>	-4		
Base current		ΙΒ	-0.4	Α	
Collector power dissipation		$P_{C}$	500	mW	
Collector power dissipation		P <sub>C</sub> *	1000	mW	
Junction temperature		Tj	150	°C	
Storage temperature range		T <sub>stg</sub>	-55~150	°C	

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

		Unit: mm					
$0.45 - 0.0$ $0.45 - 0.0$ $0.4 - 0.05$ $1.5 \pm 0.1$	3	1,6MAX. 0.4±0.05 10+20 10+2					
<ol> <li>BASE</li> <li>COLLECTOR (HEAT SINK)</li> <li>EMITTER</li> </ol>							
PW-M	INI						
JEDEC							
JEITA		SC-62					
TOSHIBA	2 05g (tup.)	2-5K1A					

Weight: 0.05g (typ.)

#### Marking



<sup>\* :</sup> Mounterd on ceramic substrate (250mm<sup>2</sup> × 0.8t)

## Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-offcurrent	I <sub>CBO</sub>	_	$V_{CB} = -10V, I_E = 0$	_	_	-0.1	μΑ
Emitter cut-off current	I <sub>EBO</sub>	_	V <sub>EB</sub> = -6V, I <sub>C</sub> = 0	-0.462	-0.60	-0.857	mA
Collector-emitter breakdown voltage	V <sub>(BR)CES</sub>	_	I <sub>C</sub> = −1mA	-10	-	_	V
DC current gain	h <sub>FE (1)</sub>		$V_{CE} = -1V$ , $I_{C} = -0.5A$	160	_	600	
	h <sub>FE (2)</sub>	V <sub>CE</sub> = −1V, IC = −4.0A	60	_	_	_	
Collector-emitter saturation voltage	V <sub>CE (sat)</sub>	_	$I_C = -2A$ , $I_B = -0.05A$	_	_	-0.5	V
Transition frequency	f <sub>T</sub>	_	$V_{CE} = -1V$ , $I_{C} = -0.5A$	_	140	_	MHz
Collector output capacitance	C <sub>ob</sub>	_	V <sub>CB</sub> = −10V, I <sub>E</sub> = 0, f = 1 MHz	_	55	_	pF
Resistor	R	_	_	7	10	13	kΩ

2 2001-10-29

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