

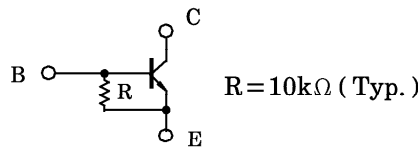
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN5003

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 RN6003

EQUIVALENT CIRCUIT



MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	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	$^\circ C$
Storage Temperature Range	T_{stg}	-55~150	$^\circ C$

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

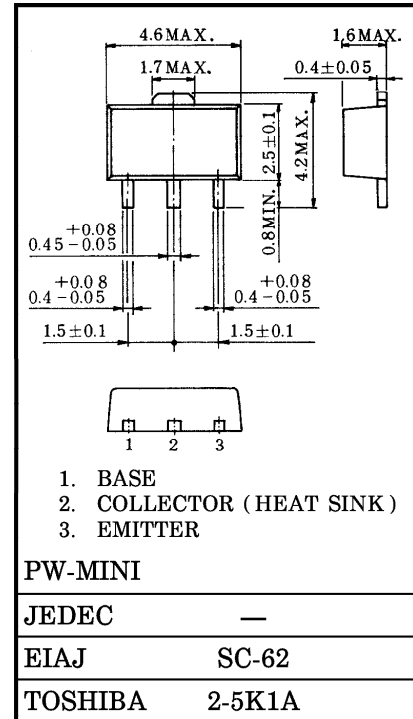
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

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}	$V_{EB}=5V, I_C=0$	0.385	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}	$V_{CB}=10V, I_E=0, f=1MHz$	—	40	—	pF
Resistor	R	—	7	10	13	k Ω

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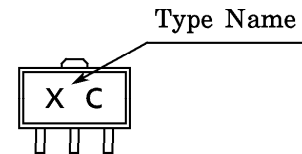
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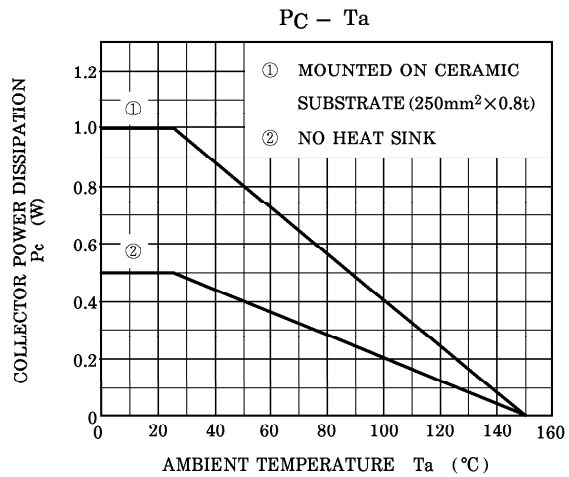
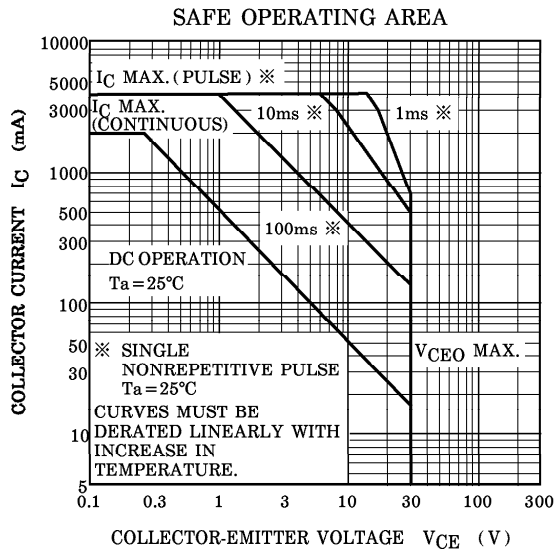
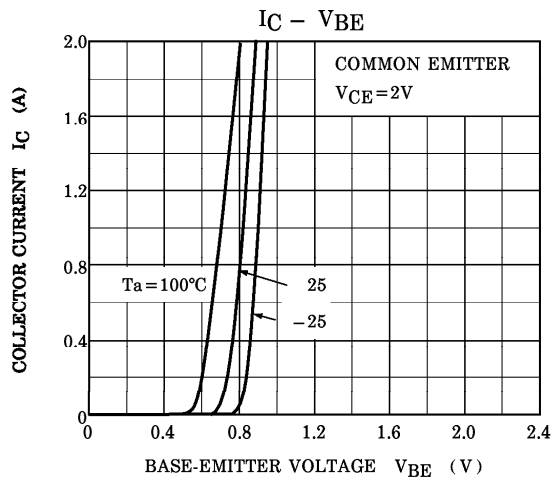
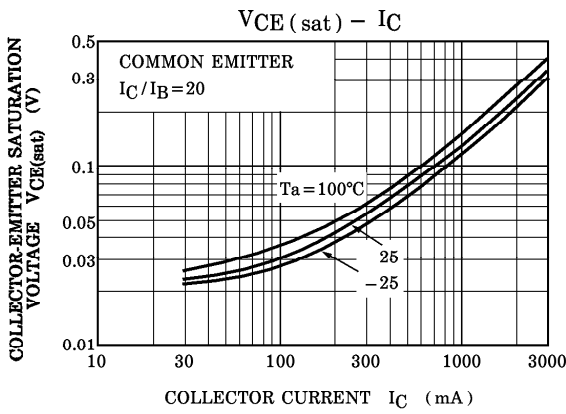
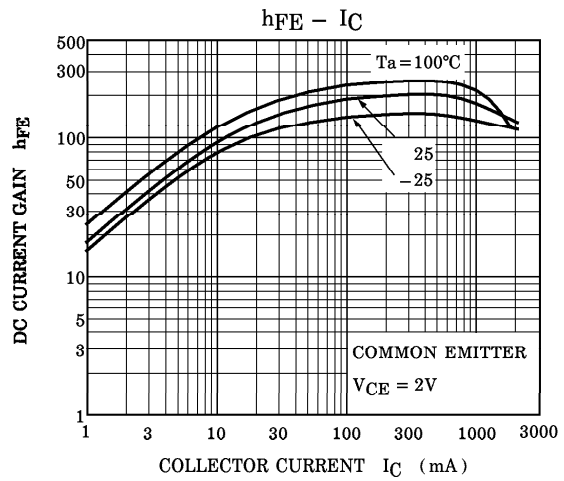
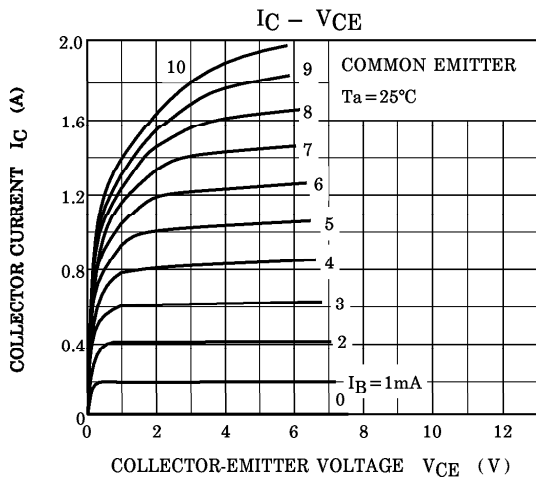
Unit in mm



Weight : 0.05g

MARKING





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