查询RN5002供应商 捷多邦，专业PCB打样工厂，24小时加急出货

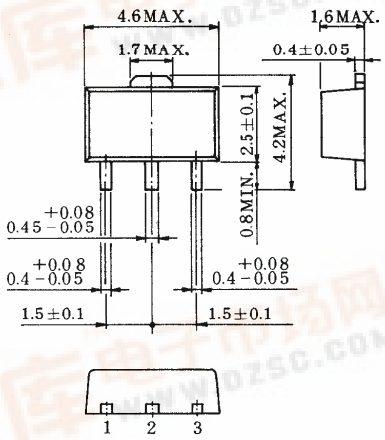
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN5002

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=1~2W (Mounted on Ceramic substrate)
- Complementary to RN6002

Unit in mm

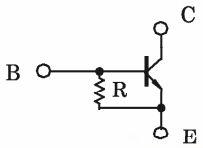


1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

PW-MINI	
JEDEC	—
EIAJ	SC-62
TOSHIBA	2-5K1A

Weight : 0.05g

EQUIVALENT CIRCUIT



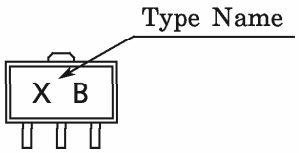
R=5.6kΩ (TYP.)

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

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

MARKING



ELECTRICAL CHARACTERISTICS (Ta = 25°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	0.68	0.89	1.28	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	—	360	
	$h_{FE(2)}$	V_{CE}=2V, I_C=2.0A	50	—	—	
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	—	3.9	5.6	7.3	kΩ

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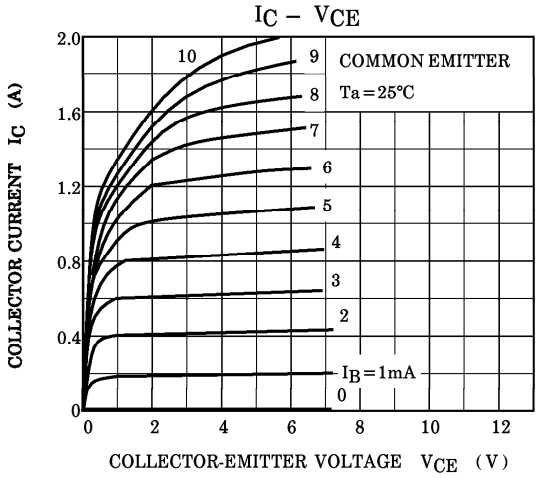
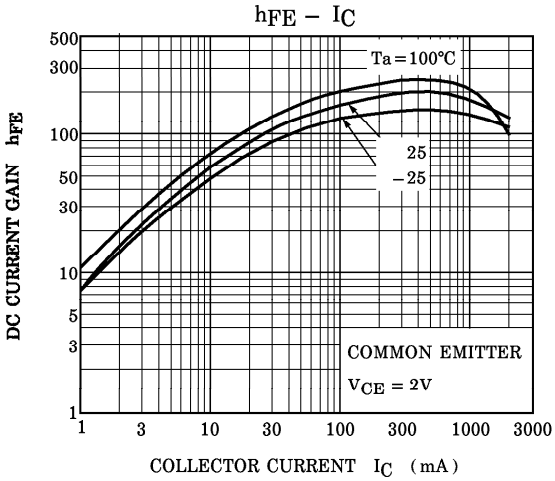
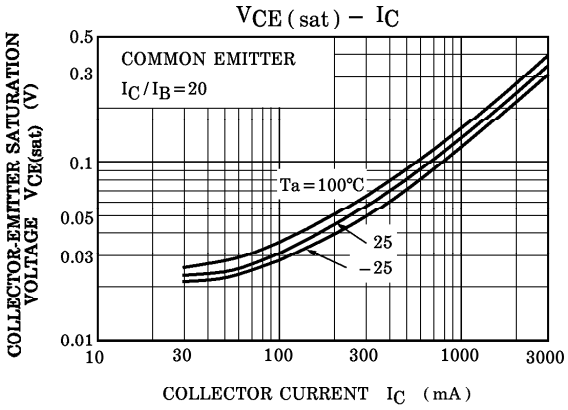
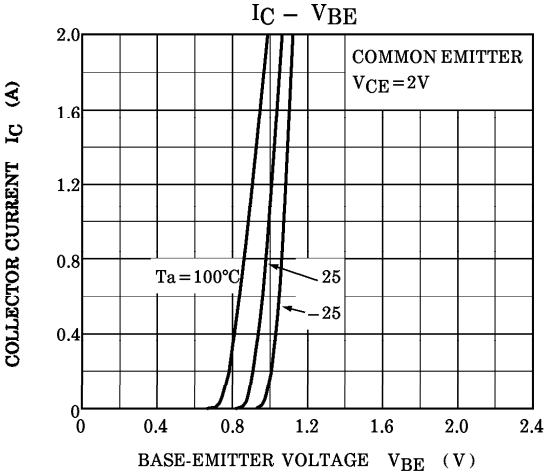
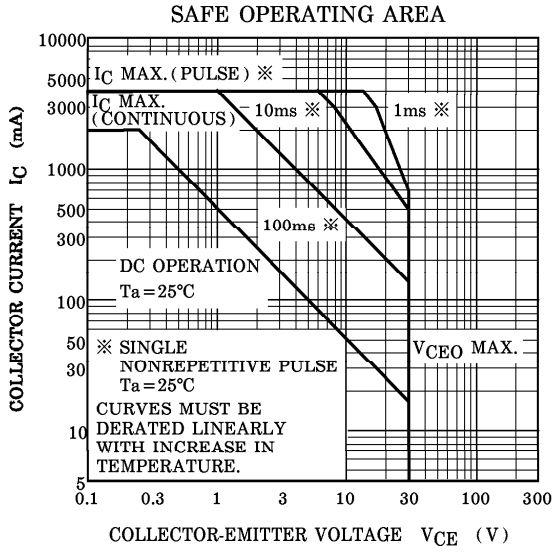
● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

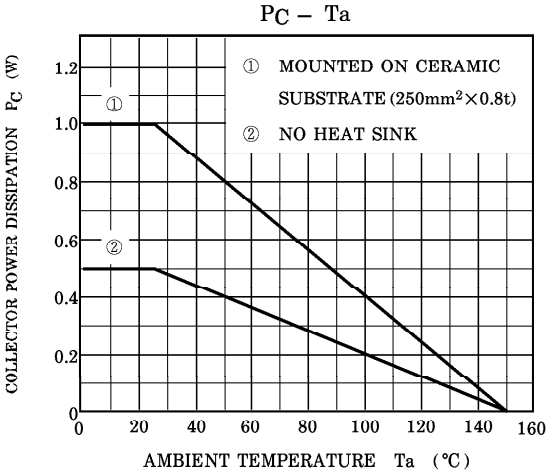

IC – VCE
COMMON EMITTER
Ta = 25°C
IB = 1mA
COLLECTOR CURRENT IC (A)
COLLECTOR-EMITTER VOLTAGE VCE (V)


hFE – IC
Ta = 100°C
25
−25
COMMON EMITTER
VCE = 2V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)


VCE (sat) – IC
COMMON EMITTER
IC / IB = 20
Ta = 100°C
25
−25
COLLECTOR-EMITTER SATURATION VOLTAGE VCE(sat) (V)
COLLECTOR CURRENT IC (mA)


IC – VBE
COMMON EMITTER
VCE = 2V
Ta = 100°C
25
−25
COLLECTOR CURRENT IC (A)
BASE-EMITTER VOLTAGE VBE (V)


SAFE OPERATING AREA
IC MAX. (PULSE) ※
IC MAX. (CONTINUOUS)
10ms ※
1ms ※
100ms ※
DC OPERATION
Ta = 25°C
※ SINGLE NONREPETITIVE PULSE Ta = 25°C
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE.
VCEO MAX.
COLLECTOR CURRENT IC (mA)
COLLECTOR-EMITTER VOLTAGE VCE (V)


PC – Ta
① MOUNTED ON CERAMIC SUBSTRATE (250mm² × 0.8t)
② NO HEAT SINK
COLLECTOR POWER DISSIPATION PC (W)
AMBIENT TEMPERATURE Ta (°C)