

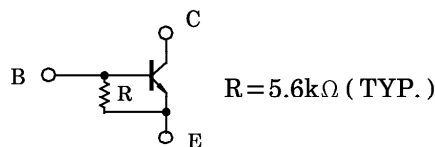
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

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
- $P_C=1\sim 2W$ (Mounted on Ceramic substrate)
- Complementary to RN6002

EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature Range	T_{stg}	-55~150	°C

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

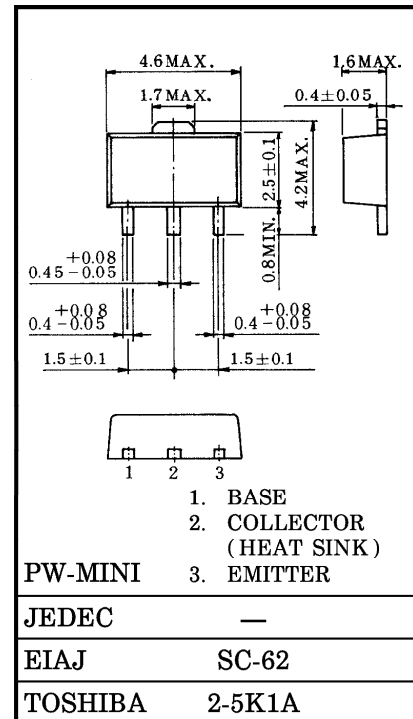
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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.

Unit in mm



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

Weight : 0.05g

MARKING

