

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS) (DARLINGTON)

2SD1140

MICRO MOTOR DRIVE, HAMMER DRIVE APPLICATIONS.

SWITCHING APPLICATIONS.

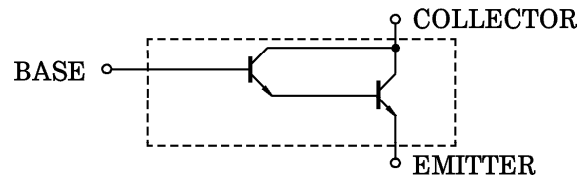
POWER AMPLIFIER APPLICATIONS.

- High DC Current Gain
: h_{FE} = 4000 (Min.)
- Low Saturation Voltage
: $V_{CE(sat)}$ = 1.5V (Max.)

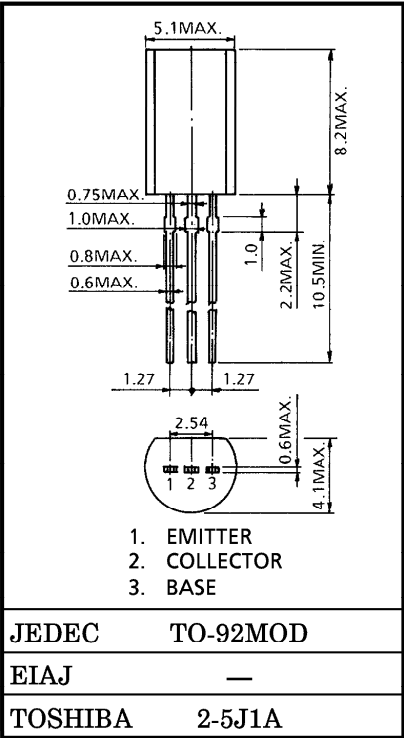
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	1.5	A
Base Current	I_B	50	mA
Collector Power Dissipation	P_C	900	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

EQUIVALENT CIRCUIT



Unit in mm

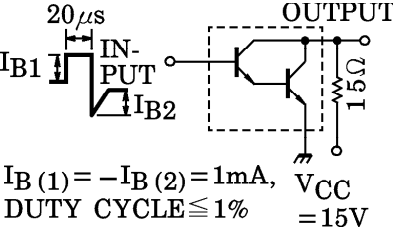


Weight : 0.36g (Typ.)

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = 30V, I _E = 0	—	—	10	μA
Emitter Cut-off Current		IEBO	V _{EB} = 10V, I _C = 0	—	—	10	μA
Collector-Emitter Breakdown Voltage		V _(BR) CEO	I _C = 10mA, I _B = 0	30	—	—	V
DC Current Gain		h _{FE}	V _{CE} = 2V, I _C = 150mA	4000	—	—	
Collector-Emitter Saturation Voltage		V _{CE} (sat)	I _C = 1A, I _B = 1mA	—	—	1.5	V
Base-Emitter Saturation Voltage		V _{BE} (sat)	I _C = 1A, I _B = 1mA	—	—	2.2	V
Switching Time	Turn-on Time	t _{on}	 $I_B(1) = -I_B(2) = 1\text{mA}$, DUTY CYCLE $\leq 1\%$, $V_{CC} = 15\text{V}$	—	0.2	—	μs
	Storage Time	t _{stg}		—	0.6	—	
	Fall Time	t _f		—	0.3	—	

