

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (DARLINGTON)

2SB1617

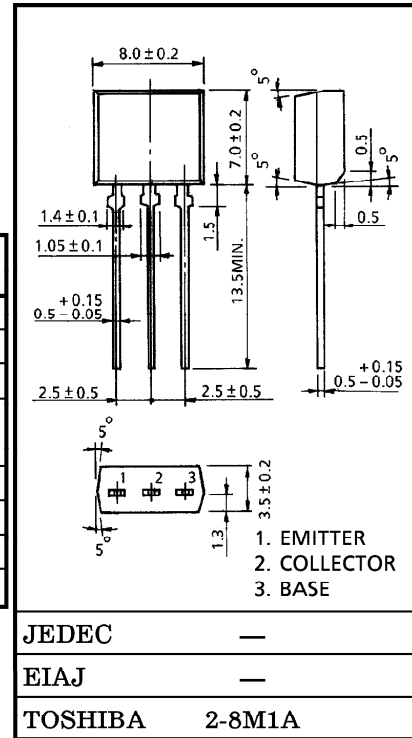
MICRO MOTOR DRIVE, HAMMER DRIVE APPLICATIONS
 POWER SWITCHING APPLICATIONS
 POWER AMPLIFIER APPLICATION

Unit in mm

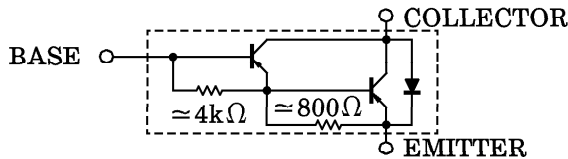
- High DC Current Gain : $h_{FE} = 2000$ (Min.)
- Low Saturation Voltage : $V_{CE(sat)} = -1.5V$ (Max.)

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	-100	V
Collector-Emitter Voltage		V_{CEO}	-100	V
Emitter-Base Voltage		V_{EBO}	-8	V
Collector Current	DC	I_C	-2	A
	Pulse	I_{CP}	-3	
Base Current		I_B	-0.5	A
Collector Power Dissipation		P_C	1.3	W
Junction Temperature		T_j	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55~150	$^\circ C$



EQUIVALENT CIRCUIT



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

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	$V_{CB} = -80V, I_E = 0$	—	—	-10	μA
Emitter Cut-off Current		I_{EBO}	$V_{EB} = -8V, I_C = 0$	—	—	-4	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$	-100	—	—	V
DC Current Gain		h_{FE}	$V_{CE} = -2V, I_C = -1A$	2000	—	—	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	$I_C = -1A, I_B = -1mA$	—	—	-1.5	V
	Base-Emitter	$V_{BE(sat)}$	$I_C = -1A, I_B = -1mA$	—	—	-2.0	
Transition Frequency		f_T	$V_{CE} = -2V, I_C = -0.5A$	—	50	—	MHz
Collector Output Capacitance		C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	27	—	pF
Switching Time	Turn-on Time	t_{on}		—	0.4	—	μs
	Storage Time	t_{stg}		—	2.0	—	
	Fall Time	t_f		$-I_{B1} = I_{B2} = 1mA,$ $DUTY CYCLE \leq 1%$	—	0.4	

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