

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (DARLINGTON)

# 2SB1457

MICRO MOTOR DRIVE, HAMMER DRIVE APPLICATIONS

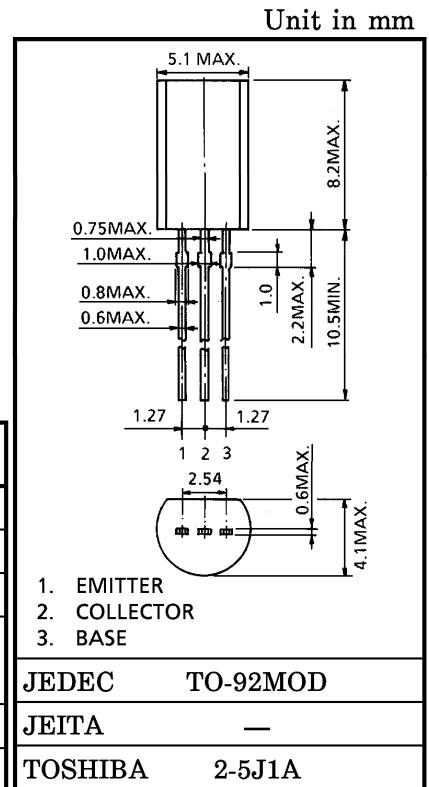
POWER SWITCHING APPLICATIONS

POWER AMPLIFIER APPLICATION

- High DC Current Gain :  $h_{FE} = 200$  (Min.) ( $V_{CE} = -2V, I_C = -1A$ )
- Low Saturation Voltage  
:  $V_{CE(sat)} = -1.5V$  (Max.) ( $I_C = -1A, I_B = -1mA$ )

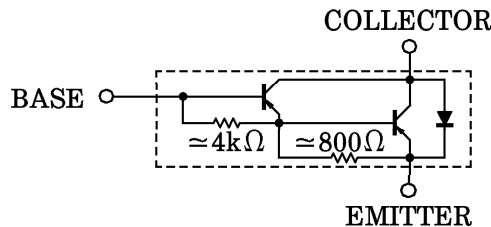
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

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
	Peak	$I_{CP}$	-3	
Base Current		$I_B$	-0.5	A
Collector Power Dissipation		$P_C$	900	mW
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55~150	$^\circ C$



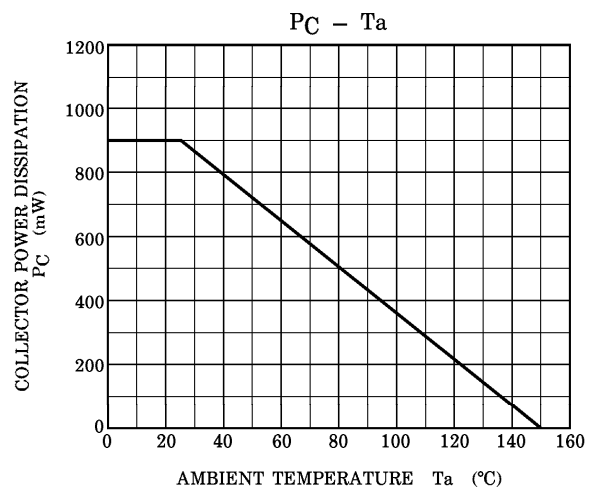
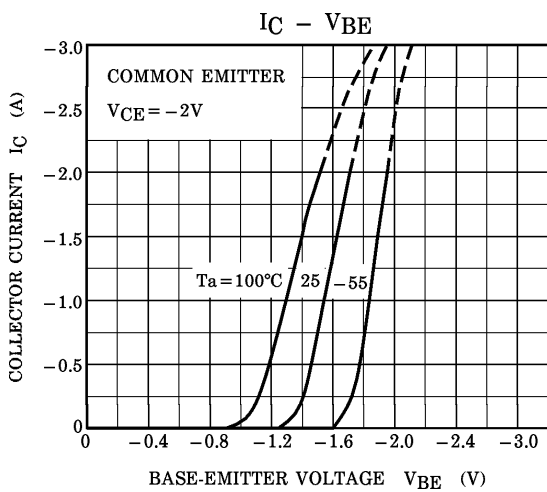
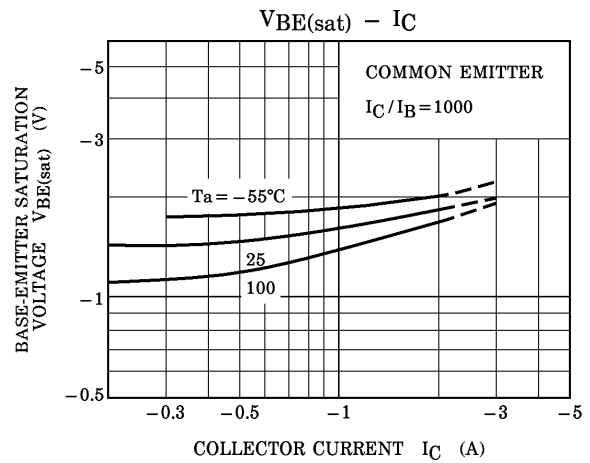
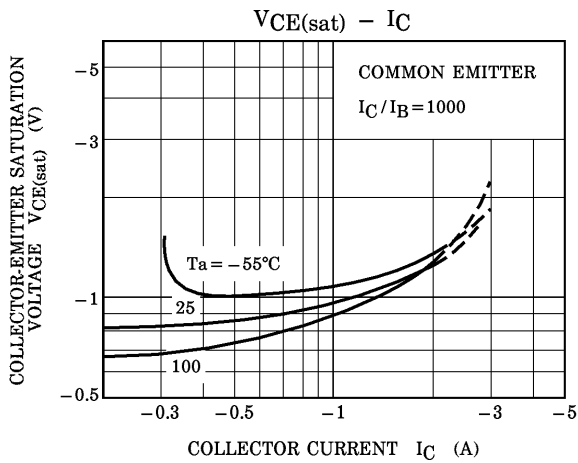
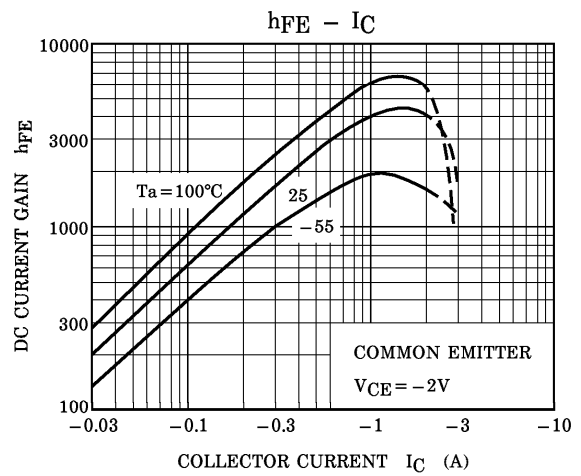
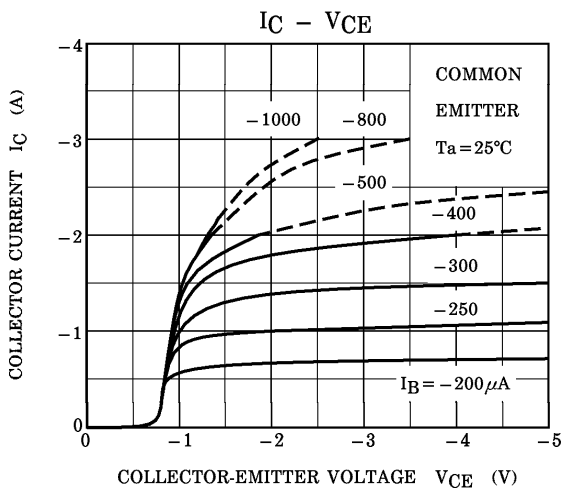
Weight : 0.36g (Typ.)

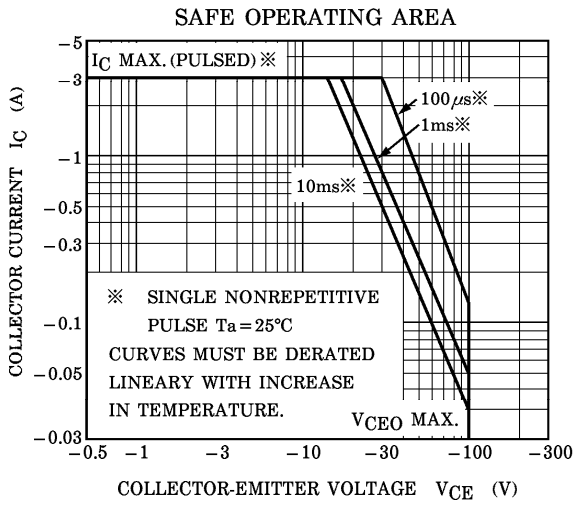
EQUIVALENT CIRCUIT



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V <sub>CB</sub> = -80V, I <sub>E</sub> = 0	—	—	-10	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = -8V, I <sub>C</sub> = 0	—	—	-4	mA
Collector-Emitter Breakdown Voltage		V <sub>(BR)CEO</sub>	I <sub>C</sub> = -10mA, I <sub>B</sub> = 0	-100	—	—	V
DC Current Gain		h <sub>FE</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -1A (Pulse)	2000	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> = -1A, I <sub>B</sub> = -1mA (Pulse)	—	—	-1.5	V
Base-Emitter Saturation Voltage		V <sub>BE(sat)</sub>	I <sub>C</sub> = -1A, I <sub>B</sub> = -1mA (Pulse)	—	—	-2.0	V
Transition Frequency		f <sub>T</sub>	V <sub>CE</sub> = -2V, I <sub>C</sub> = -0.5A	—	50	—	MH
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz	—	27	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>	<p> <math>20\mu s</math> INPUT <math>I_{B2}</math> <math>I_{B1}</math> OUTPUT  <math>30\Omega</math>  <math>V_{CC} = -30V</math>  <math>-I_{B1} = I_{B2} = 1mA</math>  DUTY CYCLE <math>\leq 1\%</math> </p>	—	0.4	—	μs
	Storage Time	t <sub>stg</sub>		—	2.0	—	
	Fall Time	t <sub>f</sub>		—	0.4	—	





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