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

2SD1222

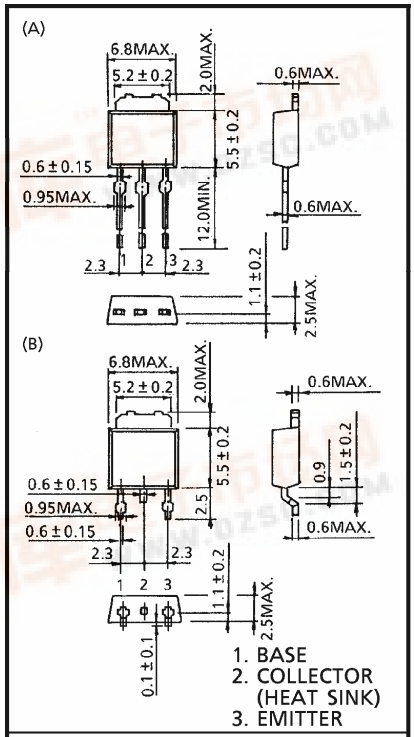
SWITCHING APPLICATIONS

HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS

POWER AMPLIFIER APPLICATIONS

- High DC Current Gain
  : $h_{FE\,(1)}$ = 2000 (Min.)
- Low Saturation Voltage : $V_{CE\,(sat)}$ = 1.5 V (Max.)
- Complementary to 2SB907.

Unit in mm



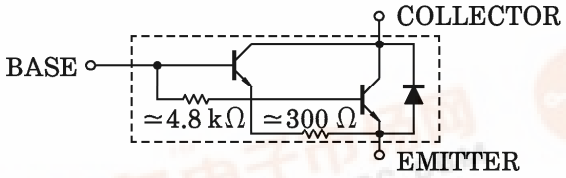
JEDEC	—
EIAJ	—
TOSHIBA	(A) 2-7B1A (B) 2-7B2A

Weight : 0.36 g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	60	V
Collector-Emitter Voltage		V_{CEO}	40	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	3	A
Base Current		I_B	0.3	A
Collector Power Dissipation	Ta = 25°C	P_C	1.0	W
	Tc = 25°C		15	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

EQUIVALENT CIRCUIT



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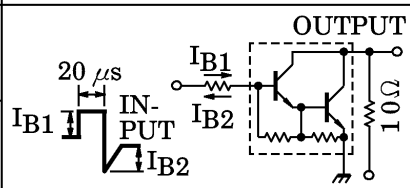
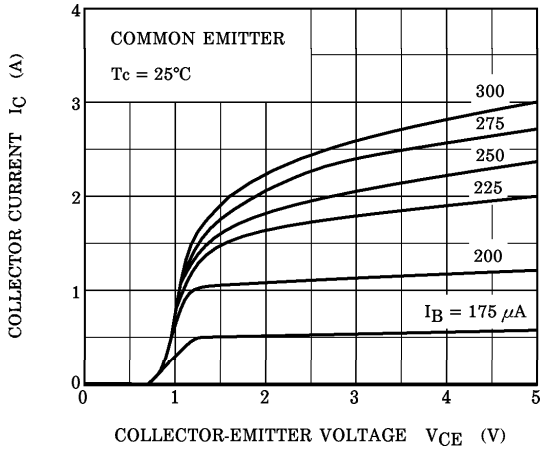
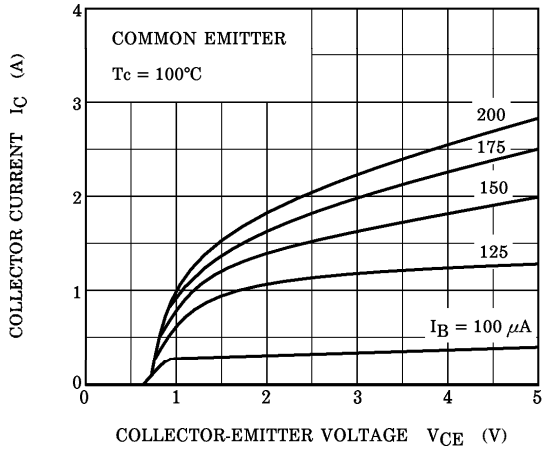
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB} = 60 V, I_E = 0	—	—	20	μA
Emitter Cut-off Current		I_{EBO}	V_{EB} = 5 V, I_C = 0	—	—	2.5	mA
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C = 25 mA, I_B = 0	40	—	—	V
DC Current Gain		$h_{FE(1)}$	V_{CE} = 2 V, I_C = 1 A	2000	—	—	
		$h_{FE(2)}$	V_{CE} = 2 V, I_C = 3 A	1000	—	—	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C = 2 A, I_B = 4 mA	—	—	1.5	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C = 2 A, I_B = 4 mA	—	—	2.0	V
Switching Time	Turn-on Time	t_{on}	 $I_{B1} = -I_{B2}$ = 6 mA, DUTY CYCLE ≦ 1%	—	0.1	—	μs
	Storage Time	t_{stg}		—	1.0	—	
	Fall Time	t_f		—	0.2	—	

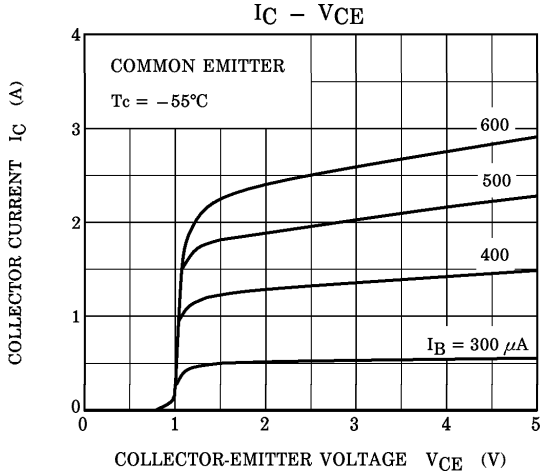
$I_C - V_{CE}$



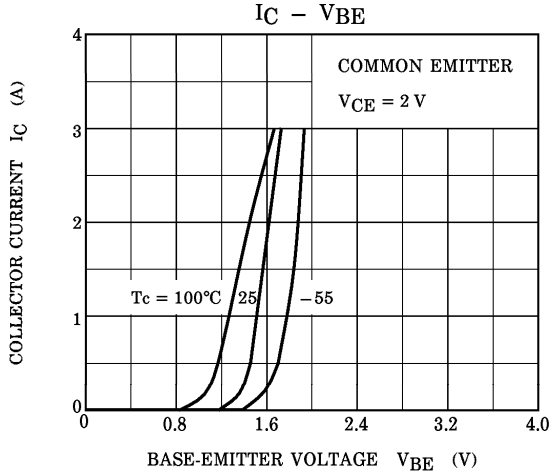
$I_C - V_{CE}$



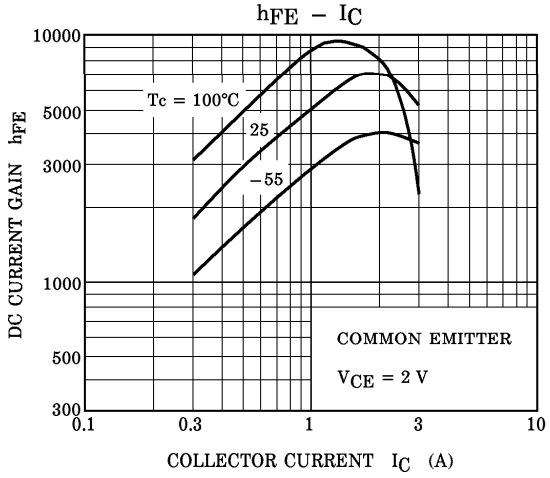
$I_C - V_{CE}$



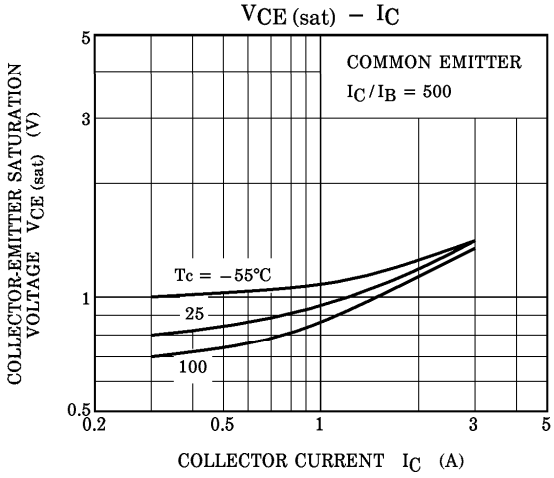
$I_C - V_{BE}$



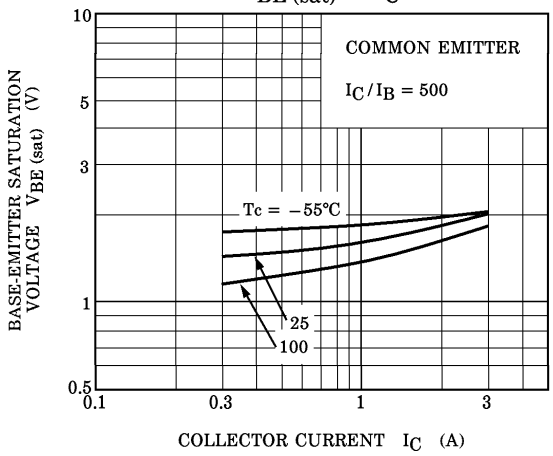
$h_{FE} - I_C$



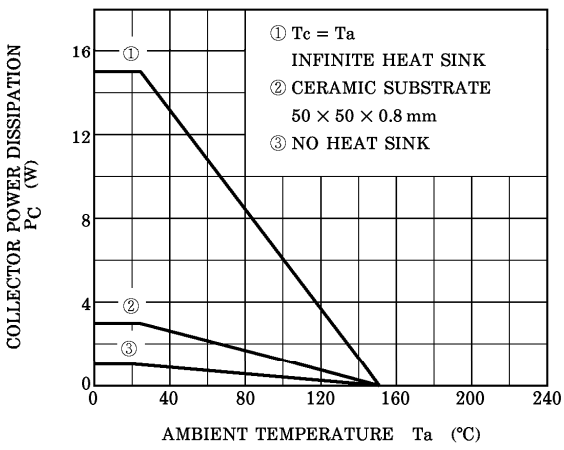
$V_{CE\,(sat)} - I_C$



$V_{BE\,(sat)}$ – I_C



P_C – Ta



SAFE OPERATING AREA