

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

2SD1784

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

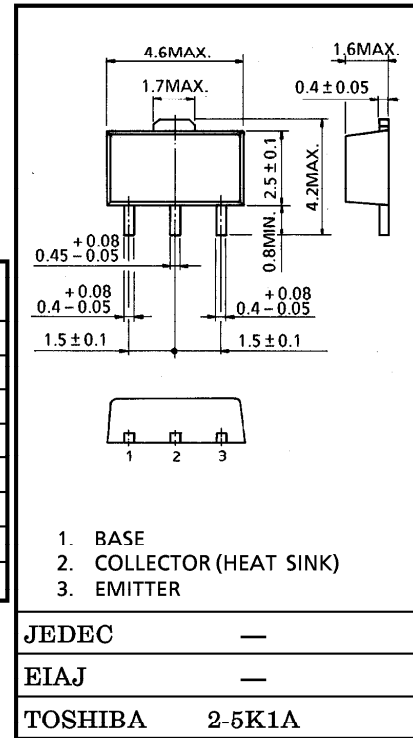
Unit in mm

- High DC Current Gain : $h_{FE} = 4000$ (Min.)
($V_{CE} = 2V, I_C = 150mA$)
- Low Saturation Voltage : $V_{CE(sat)} = 1.5V$ (Max.)
($I_C = 1A, I_B = 1mA$)

MAXIMUM RATINGS

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^*	1000	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

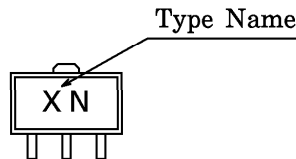
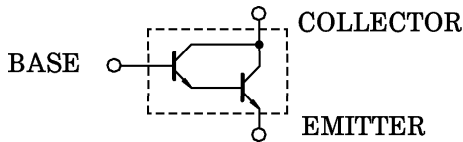
P_C^* : 2SD1784 mounted on ceramic substrate
(250mm² × 0.8t)



Weight : 0.05g

EQUIVALENT CIRCUIT

Marking

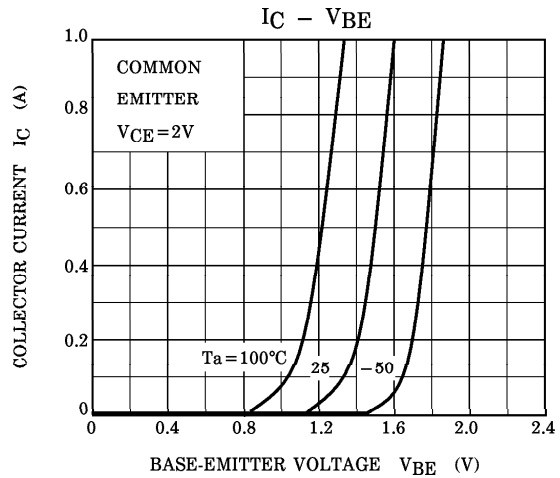
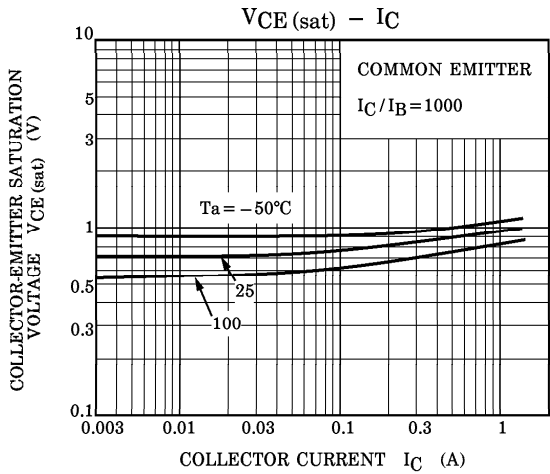
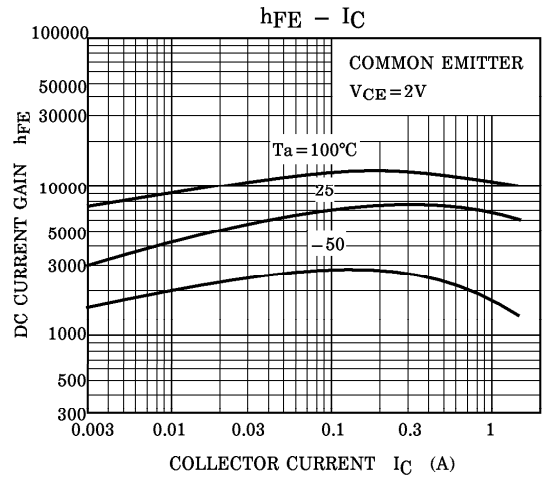
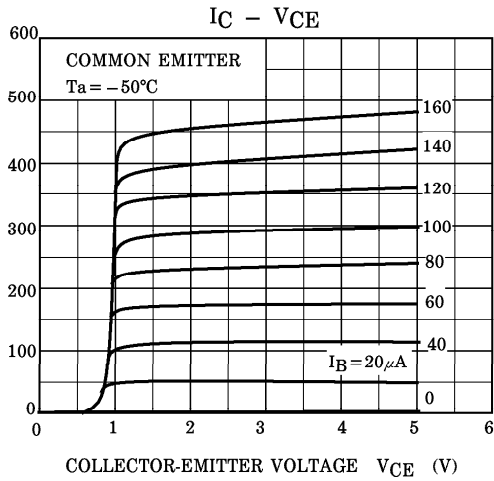
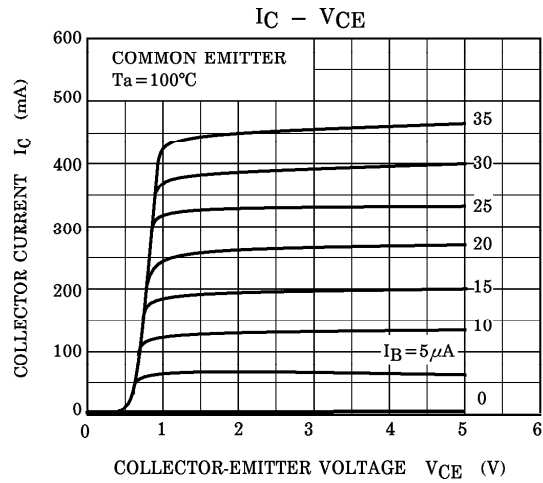
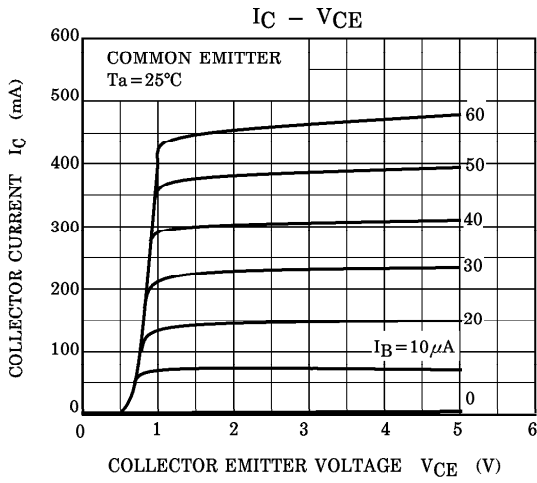


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30V, I_E = 0$	—	—	10	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 10V, I_C = 0$	—	—	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	<p>$I_B(1) = -I_B(2) = 1mA$ $V_{CC} = 15V$ $I_C = 1A, P_W = 20\mu S, Du \leq 1\%$</p>	—	0.20	—	μS
	Storage Time		—	0.6	—	
	Fall Time		—	0.3	—	

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