

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC4540

POWER AMPLIFIER APPLICATIONS

POWER SWITCHING APPLICATIONS

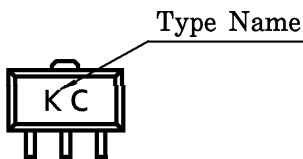
- Low Saturation Voltage :  $V_{CE(sat)} = 0.5V$  (Max.)  
( $I_C = 500mA$ )
- High Speed Switching Time :  $t_{stg} = 0.4\mu s$  (Typ.)
- Small Flat Package
- $P_C = 1\sim 2W$  (Mounted on Ceramic Substrate)
- Complementary to 2SA1735

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

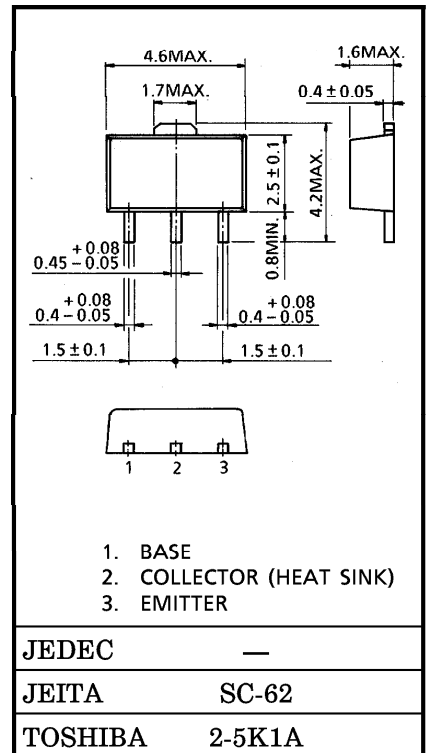
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	80	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	1	A
Base Current	$I_B$	0.2	A
Collector Power Dissipation	$P_C$	500	mW
Collector Power Dissipation	$P_C$ (Note)	1000	mW
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

(Note) : Mounted on ceramic substrate ( $250mm^2 \times 0.8t$ )

MARKING



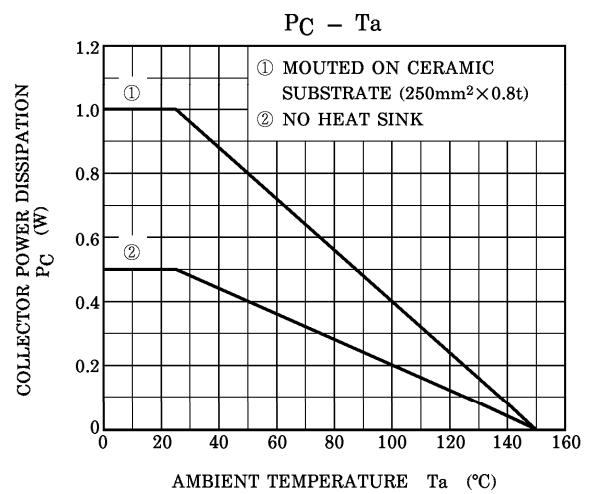
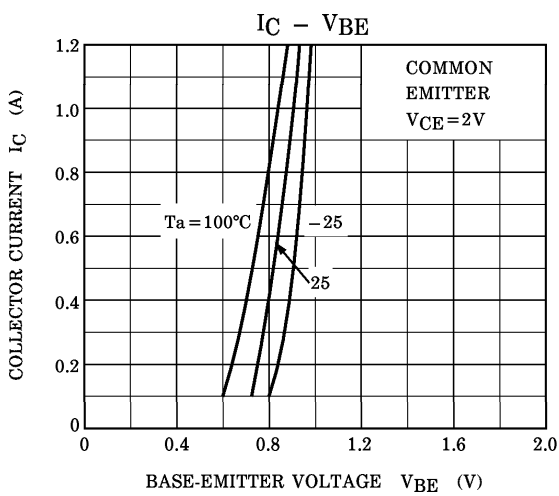
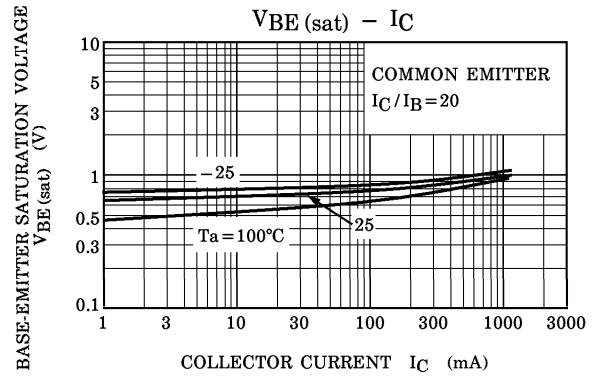
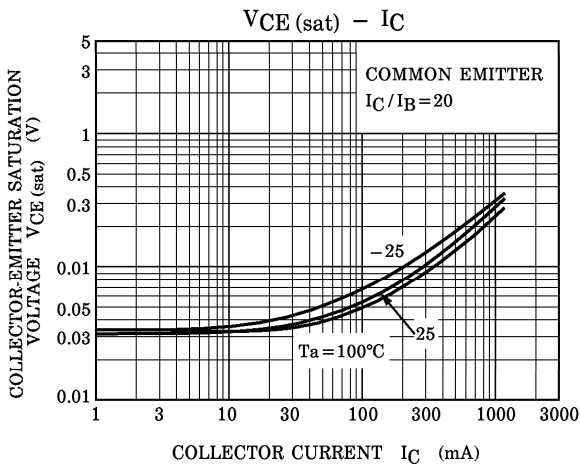
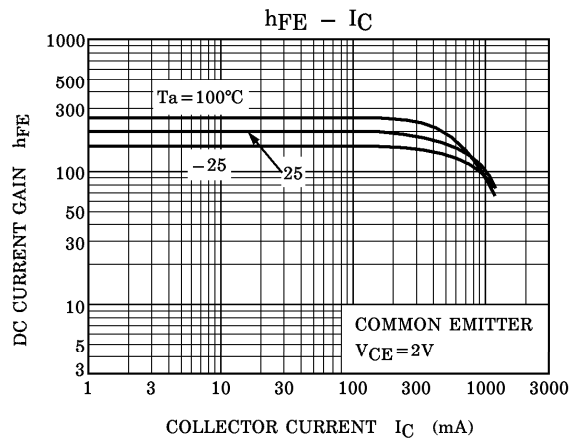
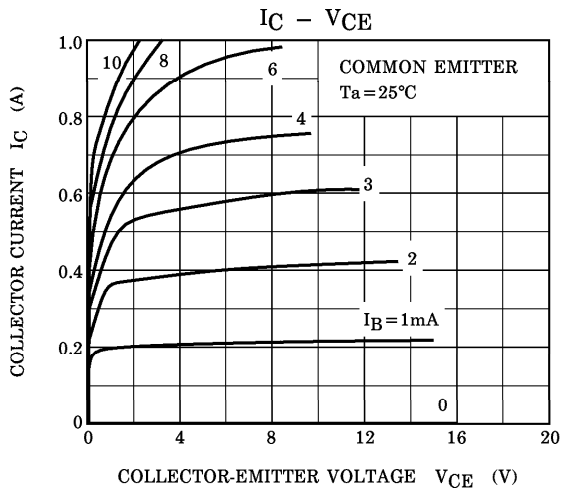
Unit in mm



Weight : 0.05g (Typ.)

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	—	—	0.1	μA
Emitter Cut-off Current		IEBO	V <sub>EB</sub> = 6V, I <sub>C</sub> = 0	—	—	0.1	μA
Collector-Emitter Breakdown Voltage		V (BR) CEO	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0	50	—	—	V
DC Current Gain		h <sub>FE</sub> (1)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 100mA	120	—	400	
		h <sub>FE</sub> (2)	V <sub>CE</sub> = 2V, I <sub>C</sub> = 700mA	40	—	—	
Collector-Emitter Saturation Voltage		V <sub>CE</sub> (sat)	I <sub>C</sub> = 500mA, I <sub>B</sub> = 25mA	—	—	0.5	V
Base-Emitter Saturation Voltage		V <sub>BE</sub> (sat)	I <sub>C</sub> = 500mA, I <sub>B</sub> = 25mA	—	—	1.2	V
Transition Frequency		f <sub>T</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 100mA	—	100	—	MHz
Collector Output Capacitance		C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz	—	10	—	pF
Switching Time	Turn-on Time	t <sub>on</sub>		—	0.1	—	μs
	Storage Time	t <sub>stg</sub>		—	0.4	—	
	Fall Time	t <sub>f</sub>		I <sub>B1</sub> = -I <sub>B2</sub> = 35mA, DUTY CYCLE ≤ 1%	—	0.1	



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