

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1954

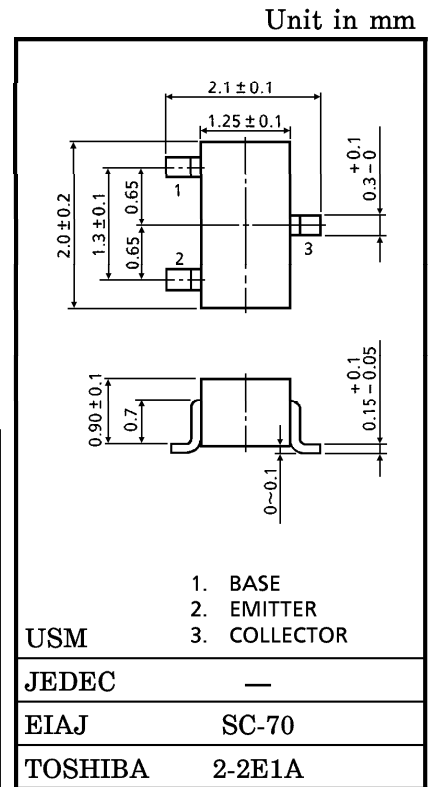
GENERAL PURPOSE AMPLIFIER APPLICATIONS

SWITCHING AND MUTING SWITCH APPLICATION

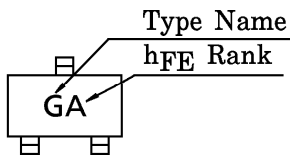
- Low Saturation Voltage : $V_{CE(sat)}(1) = -15\text{mV (Typ.)}$
@ $I_C = -10\text{mA} / I_B = -0.5\text{mA}$
- Large Collector Current : $I_C = -500\text{mA (Max.)}$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-15	V
Collector-Emitter Voltage	V_{CEO}	-12	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-500	mA
Base Current	I_B	-50	mA
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



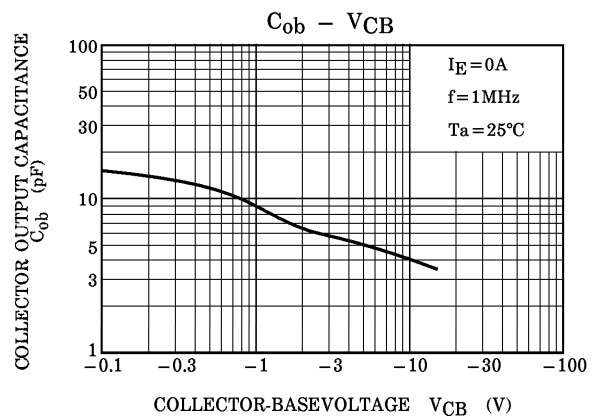
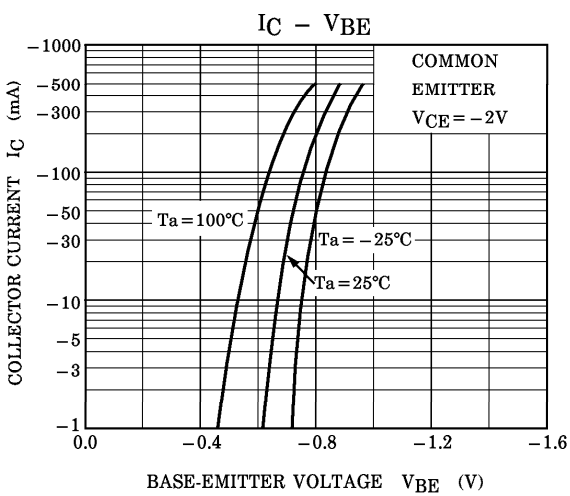
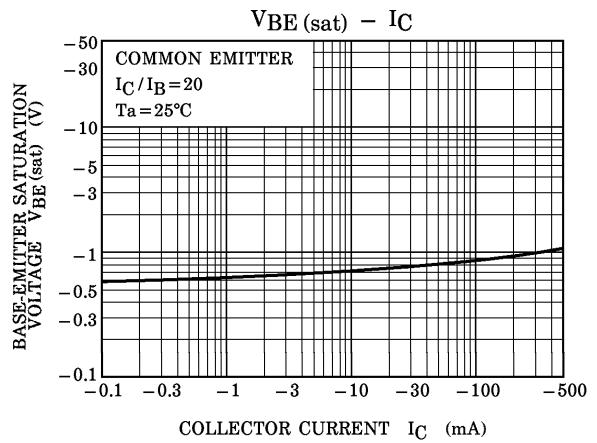
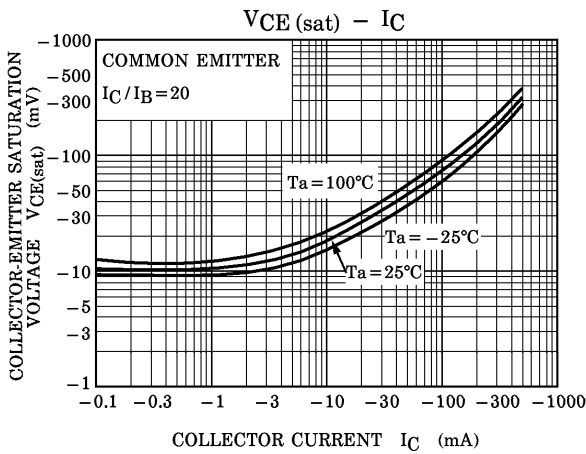
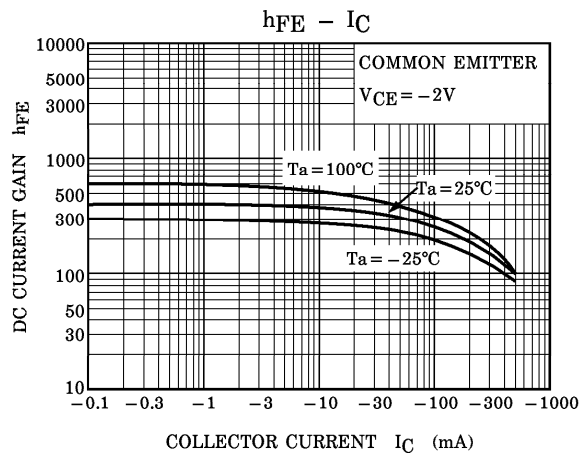
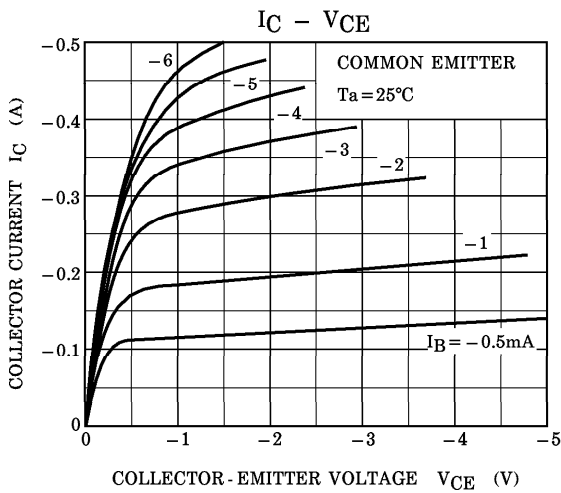
MARKING

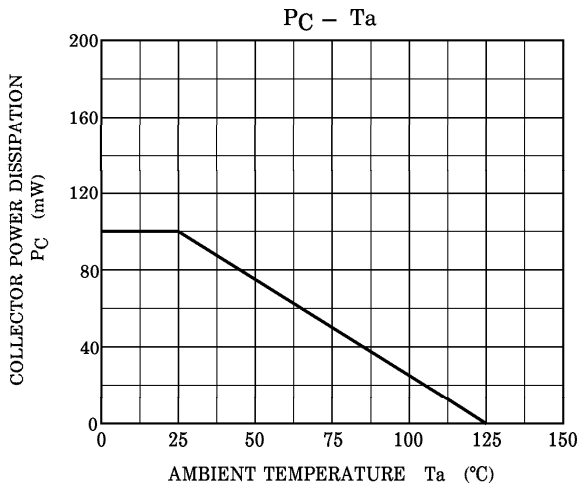


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		ICBO	V _{CB} = -15V, I _E = 0	—	—	-0.1	μA
Emitter Cut-off Current		IEBO	V _{EB} = -5V, I _C = 0	—	—	-0.1	μA
DC Current Gain		h _{FE} (Note)	V _{CE} = -2V, I _C = -10mA	300	—	1000	
Collector-Emitter Saturation Voltage		V _{CE} (sat) (1)	I _C = -10mA, I _B = -0.5mA	—	-15	-30	mV
		V _{CE} (sat) (2)	I _C = -200mA, I _B = -10mA	—	-110	-250	
Base-Emitter Saturation Voltage		V _{BE} (sat)	I _C = -200mA, I _B = -10mA	—	-0.87	-1.2	V
Transition Frequency		f _T	V _{CE} = -2V, I _C = -10mA	80	130	—	MHz
Collector Output Capacitance		C _{ob}	V _{CB} = -10V, I _E = 0, f = 1MHz	—	4.2	—	pF
Collector-Emitter On Resistance		R _{on}	I _B = -1mA, V _{in} = -1V _{rms} , f = 1kHz	—	0.9	—	Ω
Switching Time	Turn-on Time	t _{on}	<p>INPUT 300Ω OUTPUT 10 μs 50Ω 60Ω 60Ω V_{BB} V_{CC} = 3V = -6V I_{B1} = -I_{B2} = 5mA</p>	—	40	—	ns
	Storage Time	t _{stg}		—	280	—	
	Fall Time	t _f		I _{B1} = -I _{B2} = 5mA	—	45	

(Note) h_{FE} Classification A : 300~600, B : 500~1000





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