

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1049

AUDIO FREQUENCY AMPLIFIER APPLICATIONS

Unit in mm

- Small Package.
- High Breakdown Voltage : $V_{CEO} = -120\text{ V}$
- High h_{FE} : $h_{FE} = 200\sim700$
- Excellent h_{FE} Linearity
: $h_{FE}(I_C = -0.1\text{ mA}) / h_{FE}(I_C = -2\text{ mA}) = 0.95\text{ (Typ.)}$
- Low Noise : $NF = 1\text{ dB (Typ.)}, 10\text{ dB (Max.)}$
- Complementary to 2SC2459.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-120	V
Collector-Emitter Voltage	V_{CEO}	-120	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
Base Current	I_B	-20	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$

1. EMITTER	
2. COLLECTOR	
3. BASE	
JEDEC	—
EIAJ	—
TOSHIBA	2-4E1A

Weight : 0.13 g

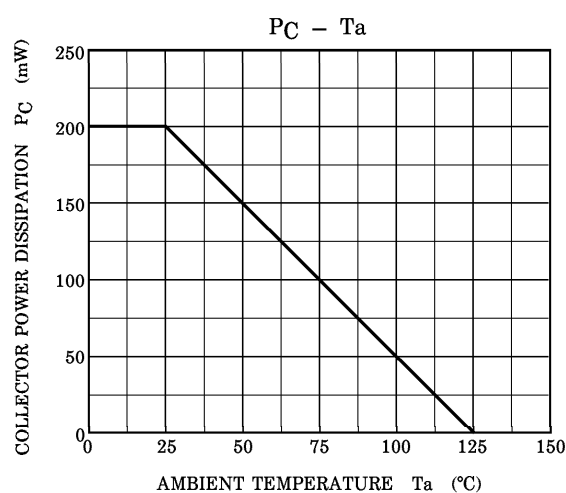
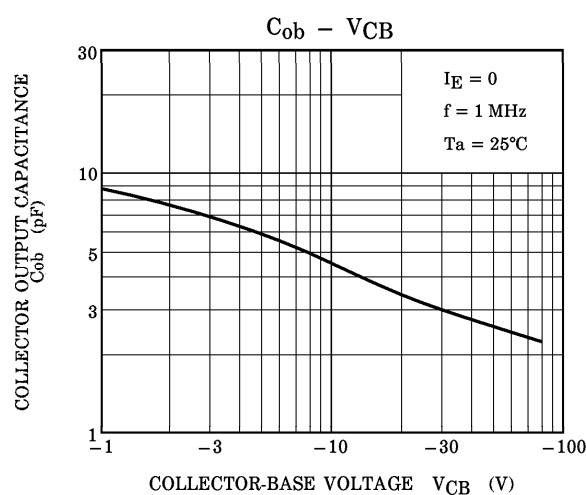
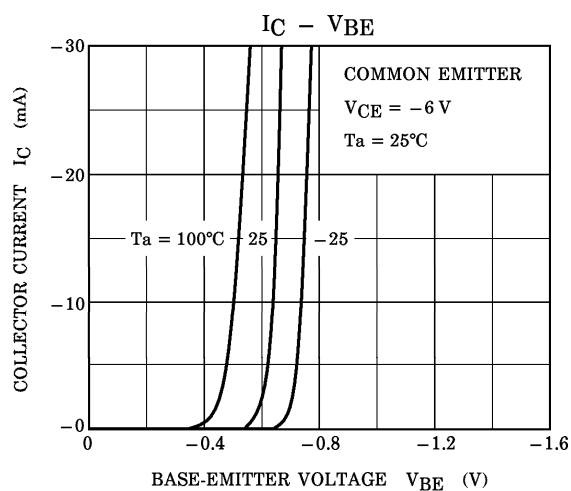
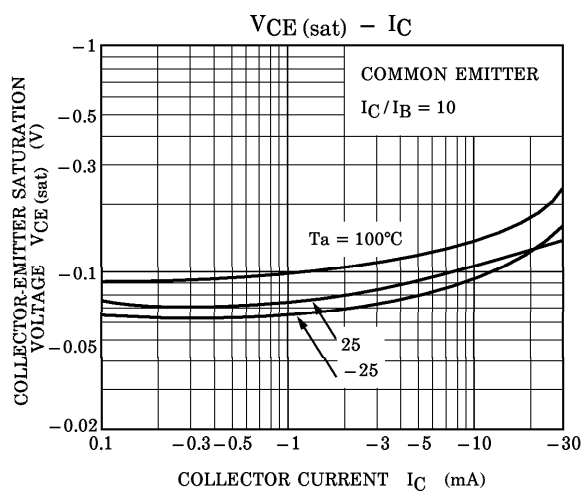
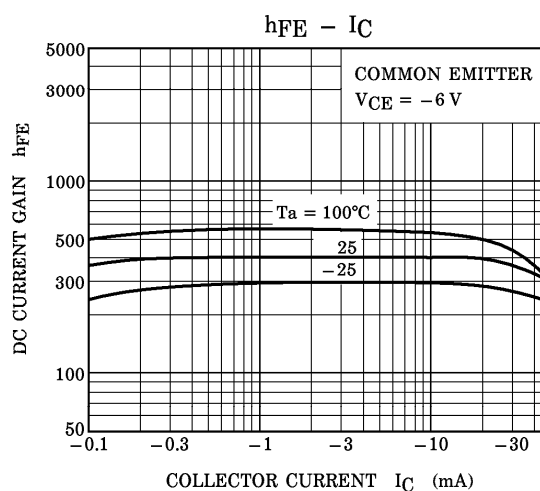
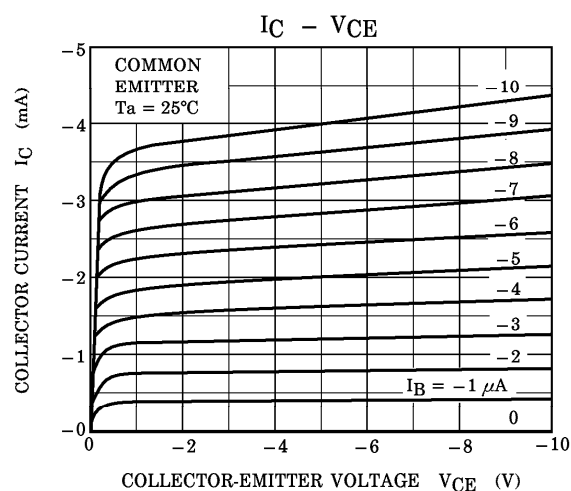
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -120\text{ V}, I_E = 0$	—	—	-0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$	—	—	-0.1	μA
DC Current Gain	$h_{FE}(\text{Note})$	$V_{CE} = -6\text{ V}, I_C = -2\text{ mA}$	200	—	700	
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -10\text{ mA}, I_B = -1\text{ mA}$	—	—	-0.3	V
Transition Frequency	f_T	$V_{CE} = -6\text{ V}, I_C = -1\text{ mA}$	—	100	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10\text{ V}, I_E = 0,$ $f = 1\text{ MHz}$	—	4	—	pF
Noise Figure	NF	$V_{CE} = -6\text{ V}, I_C = -0.1\text{ mA}$ $f = 1\text{ kHz}, R_G = 10\text{ k}\Omega$	—	1.0	10	dB

(Note) : h_{FE} Classification GR : 200~400 BL : 350~700

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