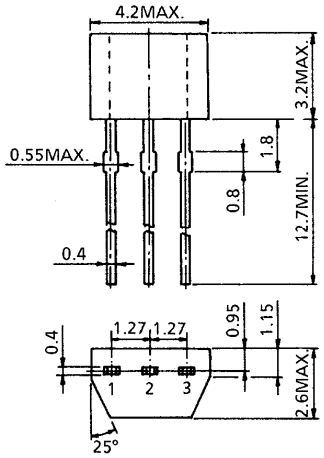
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1049

AUDIO FREQUENCY AMPLIFIER APPLICATIONS

Unit in mm

- Small Package.
- High Breakdown Voltage : $V_{CEO} = -120$ V
- High h_{FE} : $h_{FE} = 200 \sim 700$
- Excellent h_{FE} Linearity
  : h_{FE} ($I_C = -0.1$ mA) / h_{FE} ($I_C = -2$ mA) = 0.95 (Typ.)
- Low Noise : NF = 1dB (Typ.), 10 dB (Max.)
- Complementary to 2SC2459.



1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	—
EIAJ	—
TOSHIBA	2-4E1A

Weight : 0.13 g

MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

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

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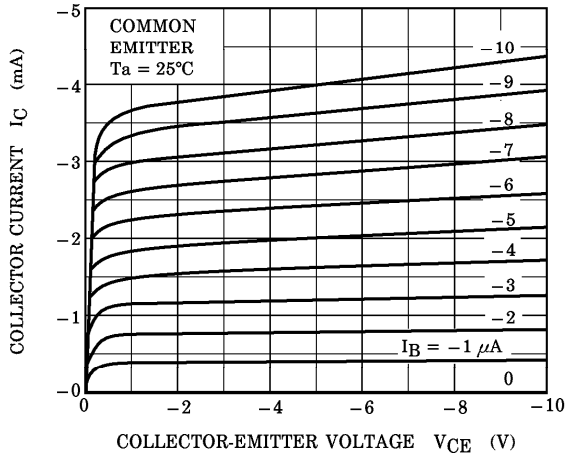
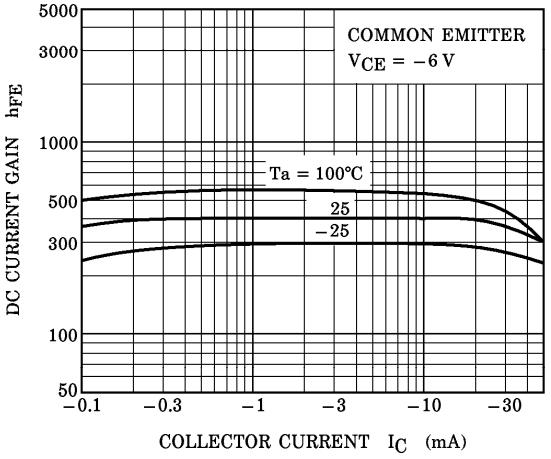
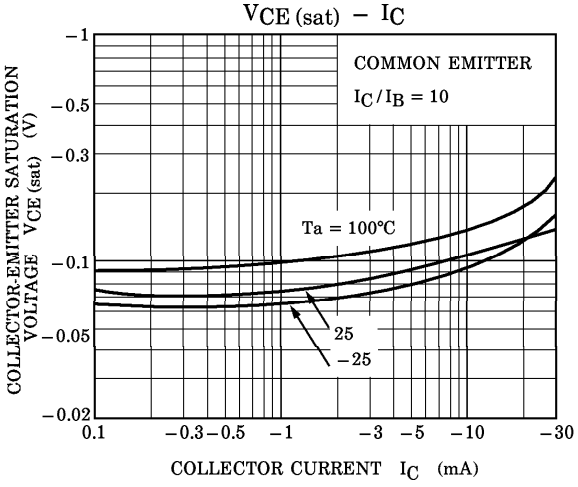
I_C – V_{CE}



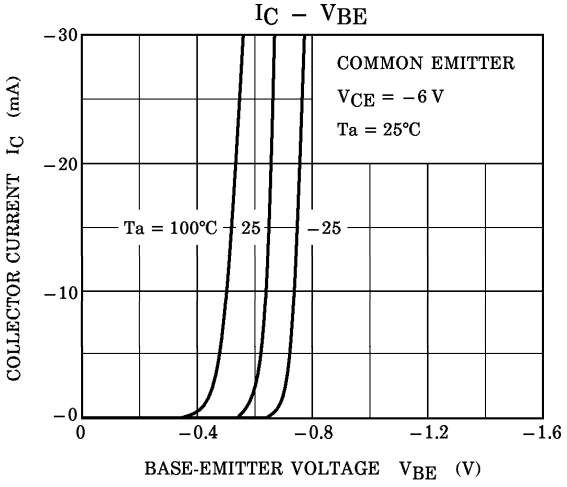
h_{FE} – I_C



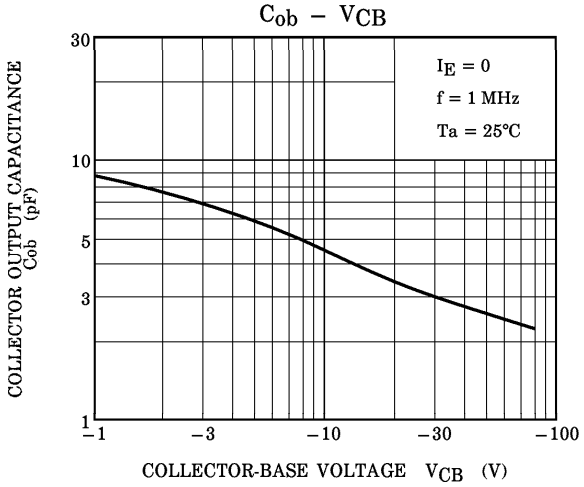
$V_{CE\,(sat)}$ – I_C



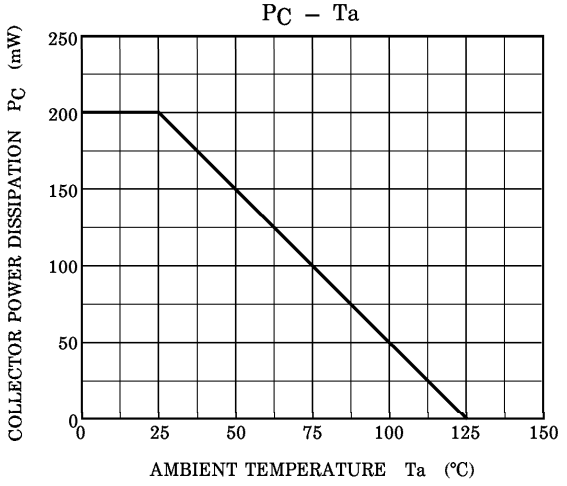
I_C – V_{BE}



C_{ob} – V_{CB}



P_C – Ta



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