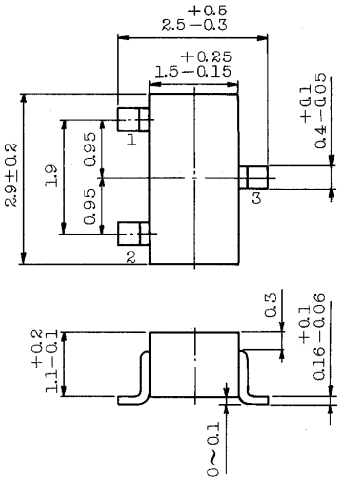
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1312

AUDIO FREQUENCY LOW NOISE AMPLIFIER APPLICATIONS.

- High Voltage : $V_{CEO} = -120V$
- Excellent h_{FE} Linearity
  : h_{FE} ($I_C = -0.1mA$) / hFE ($I_C = -2mA$) = 0.95 (Typ.)
- High h_{FE} : $h_{FE} = 200 \sim 700$
- Low Noise : NF (2) = 0.2dB (Typ.), 3dB (Max.) at f = 1kHz
- Complementary to 2SC3324
- Small Package

Unit in mm



JEDEC	TO-236MOD
EIAJ	SC-59
TOSHIBA	2-3F1A

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

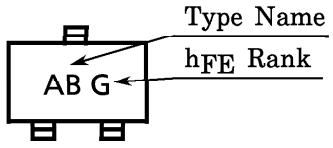
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	−120	V
Collector-Emitter Voltage	V_{CEO}	−120	V
Emitter-Base Voltage	V_{EBO}	−5	V
Collector Current	I_C	−100	mA
Base Current	I_B	−20	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = -120V$, $I_E = 0$	—	—	−0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5V$, $I_C = 0$	—	—	−0.1	μA
DC Current Gain	h_{FE} (Note)	$V_{CE} = -6V$, $I_C = -2mA$	200	—	700	
Collector-Emitter Saturation Voltage	V_{CE} (sat)	$I_C = -10mA$, $I_B = -1mA$	—	—	−0.3	V
Transition Frequency	f_T	$V_{CE} = -6V$, $I_C = -1mA$	—	100	—	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = -10V$, $I_E = 0$, f = 1MHz	—	4	—	pF
Noise Figure	NF (1)	$V_{CE} = -6V$, $I_C = -0.1mA$, f = 100Hz, Rg = 10kΩ	—	0.5	6	dB
	NF (2)	$V_{CE} = -6V$, $I_C = -0.1mA$, f = 1kHz, Rg = 10kΩ	—	0.2	3	dB

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

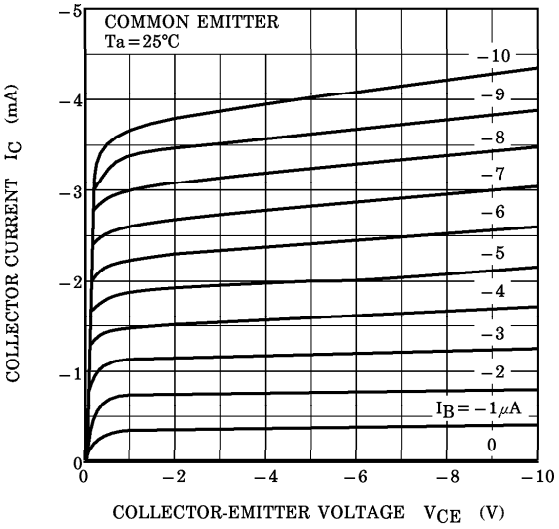
MARKING



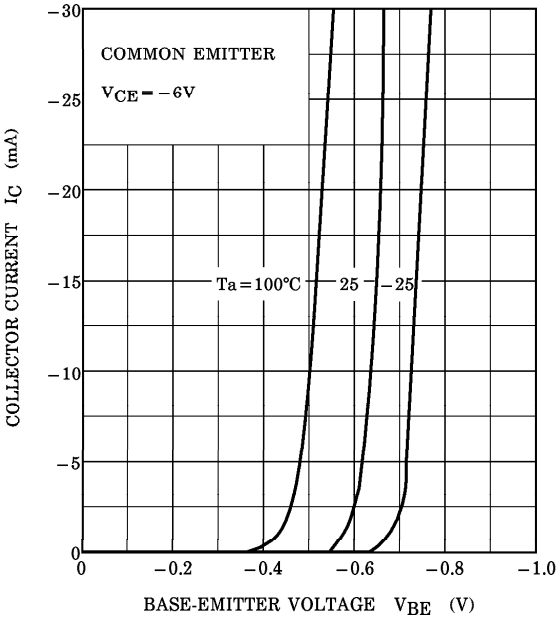
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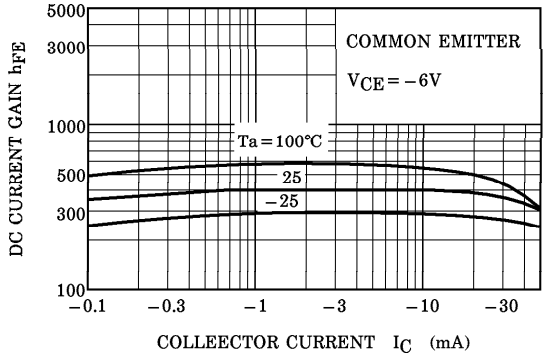
I_C – V_{CE}



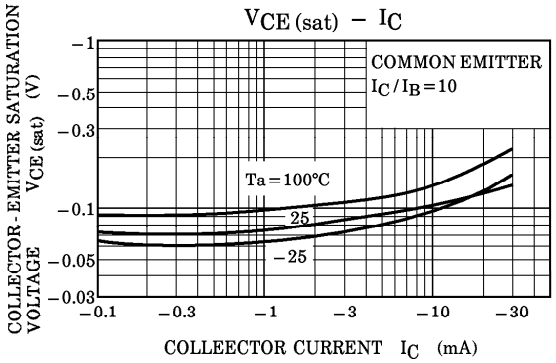
I_C – V_{BE}



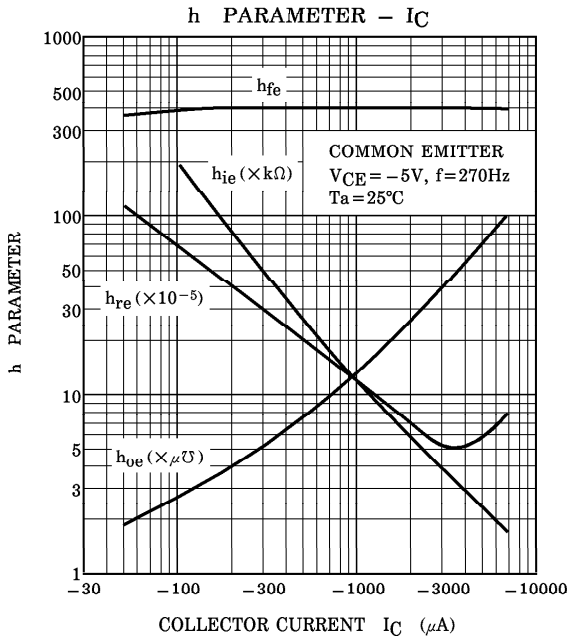
h_{FE} – I_C



$V_{CE\,(sat)}$ – I_C



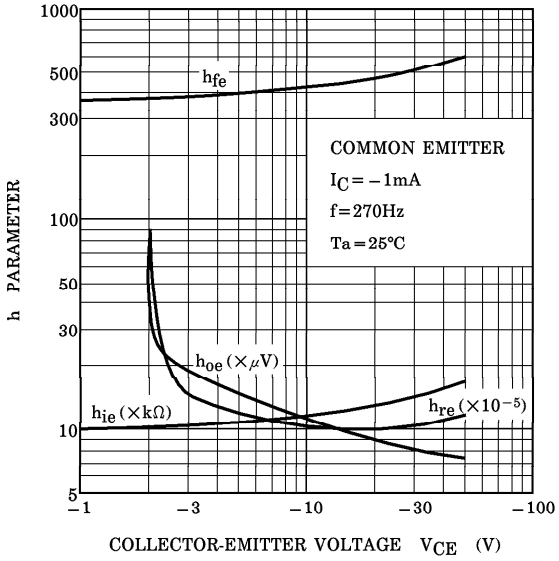
h PARAMETER – I_C



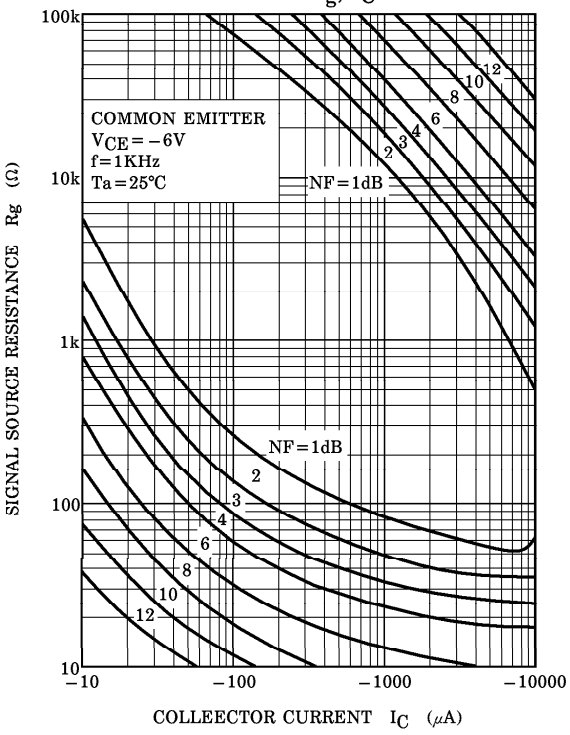
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- The information contained herein is subject to change without notice.

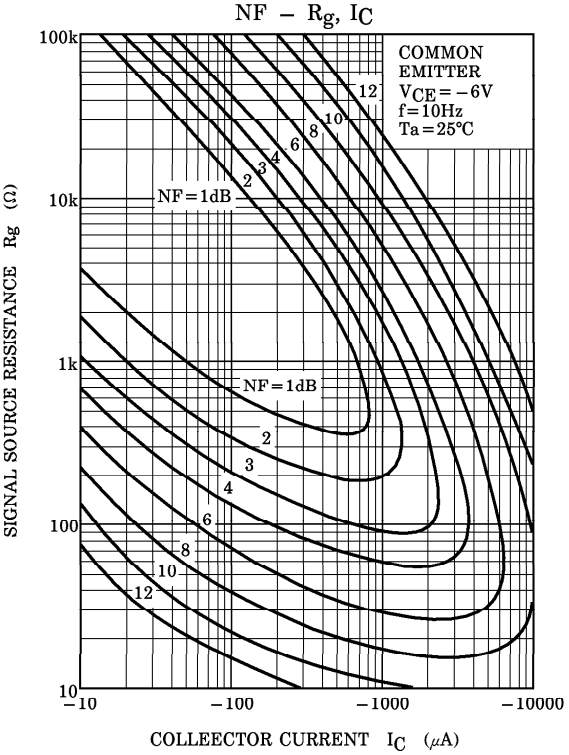
h PARAMETER – V_{CE}



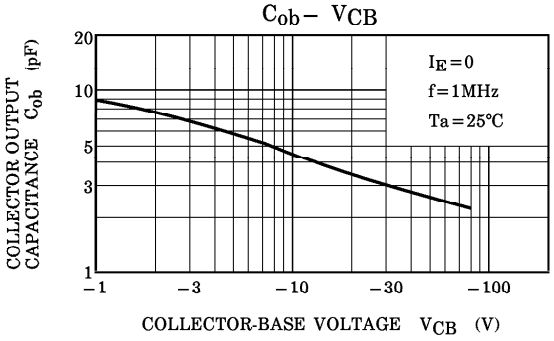
NF – R_g, I_C



NF – R_g, I_C



C_{ob} – V_{CB}



P_C – Ta

