

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

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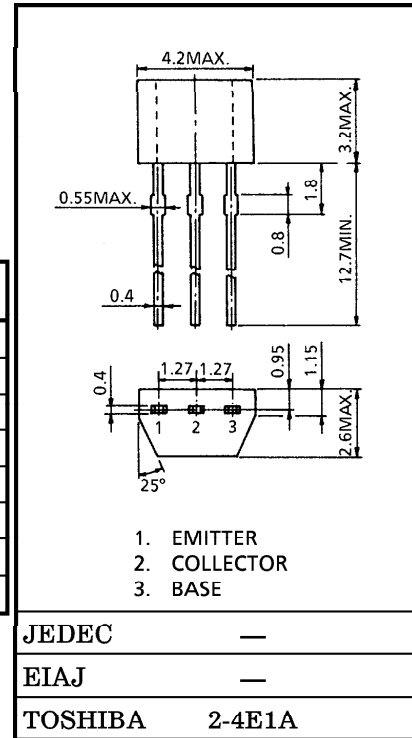
FM / AM RF, MIX, OSC, IF
HIGH FREQUENCY AMPLIFIER APPLICATIONS.

Unit in mm

- High stability Oscillation Voltage On FM Local Oscillator.
- Recommend FM / AM RF, MIX, OSC and IF.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	40	V
Collector-Emitter Voltage	V _{CEO}	30	V
Emitter-Base Voltage	V _{EBO}	4	V
Collector Current	I _C	50	mA
Base Current	I _B	10	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)

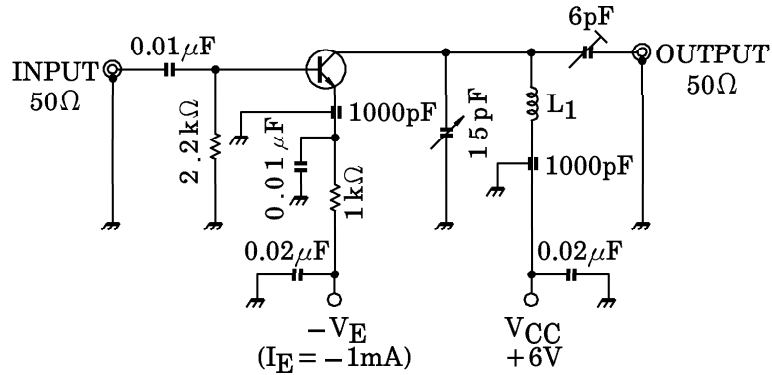
Weight : 0.13g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CB0}	V _{CB} = 40V, I _E = 0	—	—	0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 4V, I _C = 0	—	—	0.5	μA
DC Current Gain	h _{FE} (Note)	V _{CE} = 6V, I _C = 1mA	40	—	240	—
Reverse Transfer Capacitance	C _{re}	V _{CE} = 6V, f = 1MHz	—	0.9	1.3	pF
Transition Frequency	f _T	V _{CE} = 6V, I _E = -1mA	150	350	—	MHz
Collector-Base Time Constant	C _{c-rbb'}	V _{CE} = 6V, I _E = -1mA, f = 30MHz	—	15	30	ps
Noise Figure	NF	V _{CC} = 6V, I _E = -1mA, f = 100MHz (Fig.1)	—	4.0	—	dB
Power Gain	G _{pe}		—	15	—	
Oscillation Output Voltage	V _{OSC}	V _{CC} = 6V, f = 100MHz (Fig.2)	—	150	—	mV

Note : h_{FE} Classification R : 40~80 O : 70~140 Y : 120~240

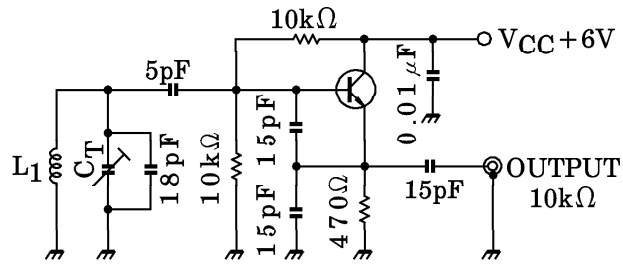
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L₁ : 0.8mmϕ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

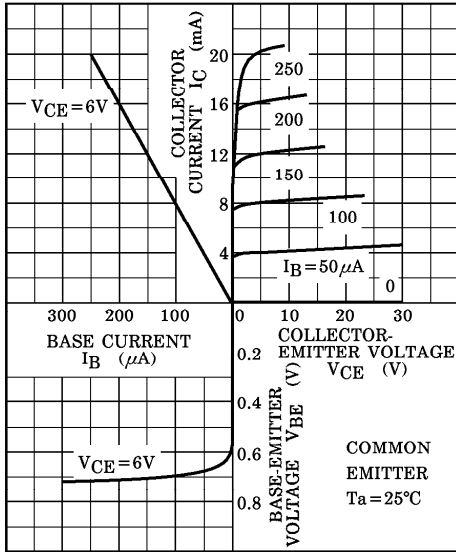
Fig.1 NF, G_{pe} TEST CIRCUIT



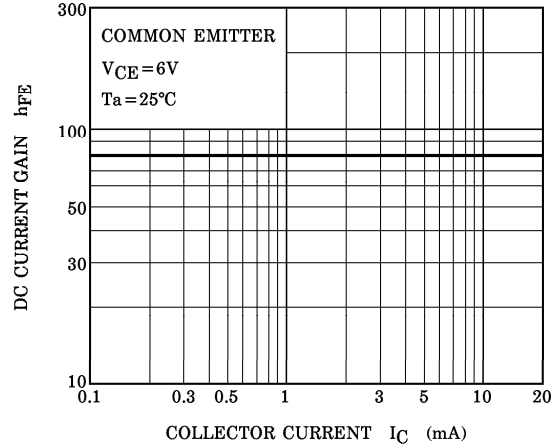
L₁ : 0.8mmϕ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

Fig.2 V_{OSC} TEST CIRCUIT

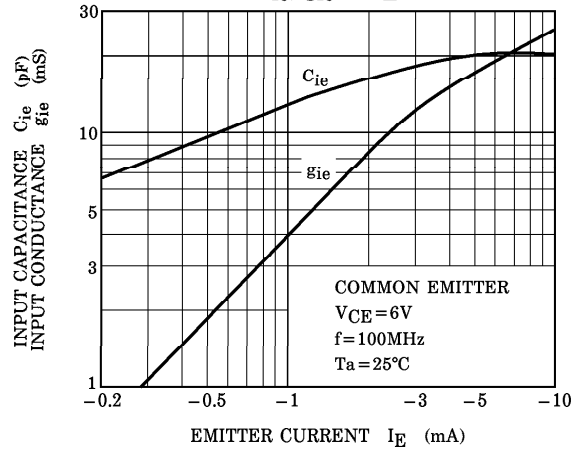
STATIC CHARACTERISTICS



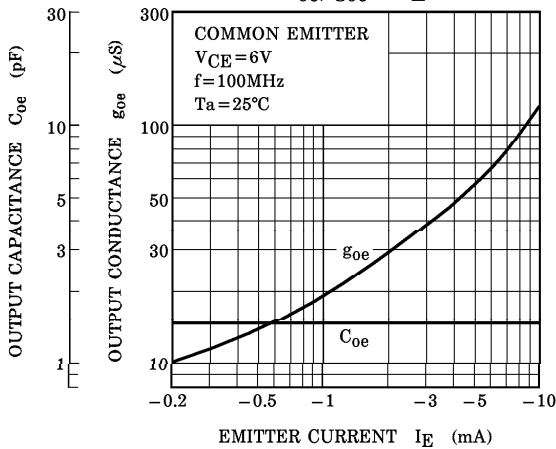
$h_{FE} - I_C$



$C_{ie}, g_{ie} - I_E$



$C_{oe}, g_{oe} - I_E$



$|Y_{re}|, \theta_{re} - I_E$

