

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC2996

FM / AM, RF, MIX, LOCAL, IF

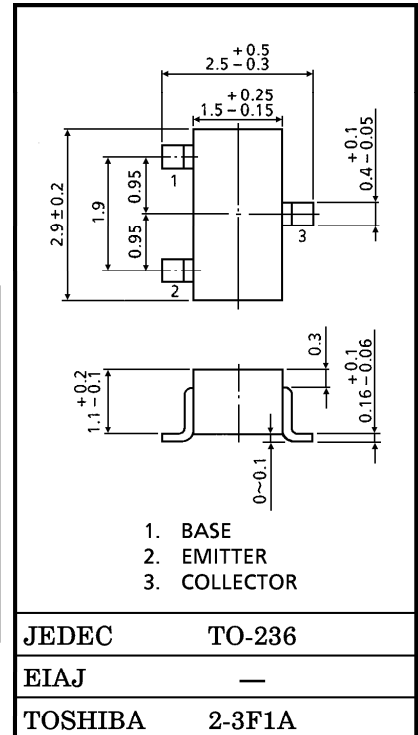
HIGH FREQUENCY AMPLIFIER APPLICATIONS

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

MAXIMUM RATINGS (Ta = 25°C)

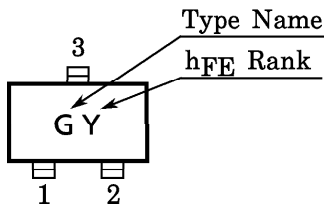
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	40	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Base Voltage	V <sub>EB0</sub>	4	V
Collector Current	I <sub>C</sub>	50	mA
Emitter Current	I <sub>E</sub>	-50	mA
Collector Power Dissipation	P <sub>C</sub>	150	mW
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C

Unit in mm



Weight : 0.012g

Marking



961001EAA1

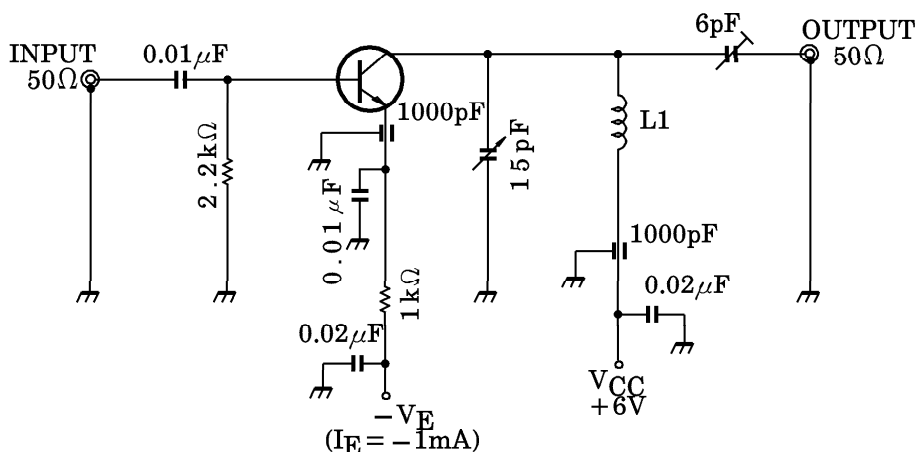
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=40V, I_E=0$	—	—	0.1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=4V, I_C=0$	—	—	0.5	$\mu A$
DC Current Gain	$h_{FE}$ (Note)	$V_{CE}=6V, I_C=1mA$	40	—	240	
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=6V, f=1MHz$	—	0.9	1.3	pF
Transition Frequency	$f_T$	$V_{CE}=6V, I_C=-1mA$	150	350	—	MHz
Collector-Base Time Constant	$C_c \cdot r_{bb}'$	$V_{CE}=6V, I_E=-1mA,$ $f=30MHz$	—	15	30	ps
Noise Figure	NF	$V_{CE}=6V, I_E=-1mA$	—	4.0	—	dB
Power Gain	$G_{pe}$	$f=100MHz$ (Fig.1)	—	15	—	dB
Oscillation Output Voltage	$V_{OSC}$	$V_{CE}=6V, f=100MHz$ (Fig.2)	—	150	—	mV

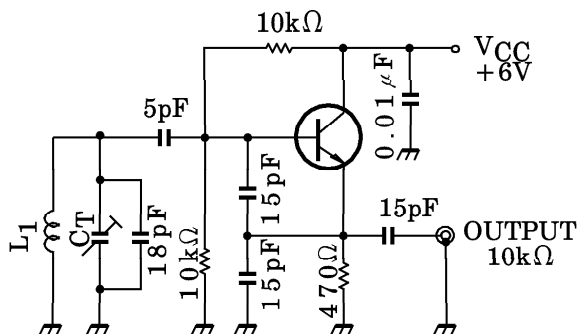
(Note)  $h_{FE}$  Classification R : 40~80, O : 70~140, Y : 120~240

Fig.1 NF,  $G_{pe}$  TEST CIRCUIT



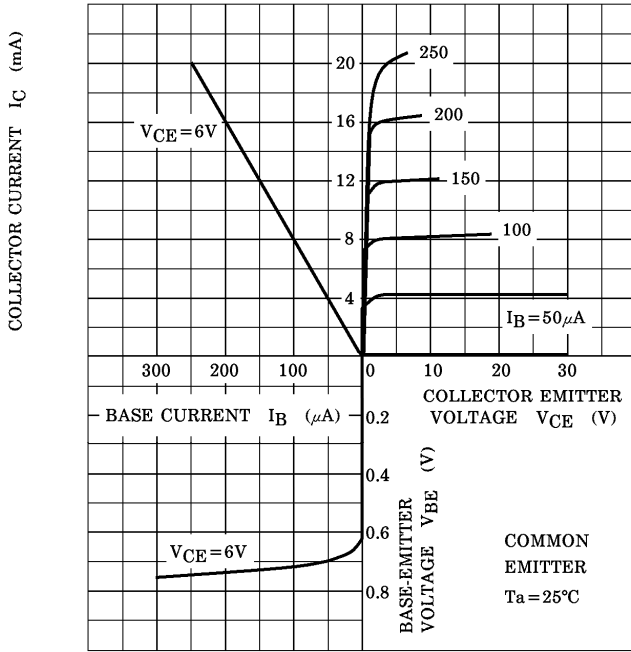
$L_1$  : 0.8mmφ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

Fig.2  $V_{OSC}$  TEST CIRCUIT

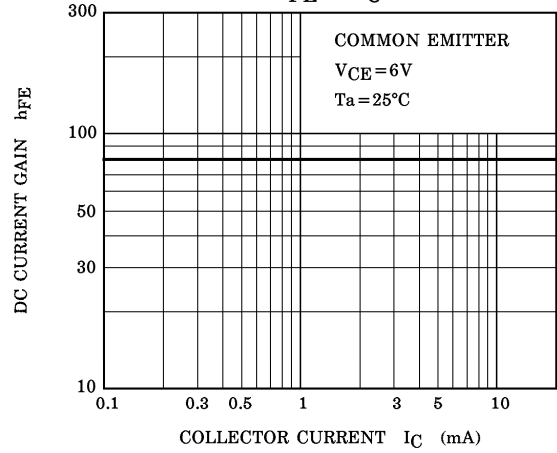


$L_1$  : 0.8mmφ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

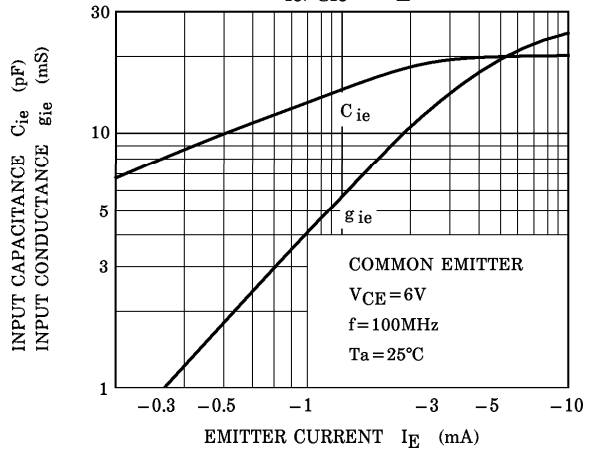
STATIC CHARACTERISTICS



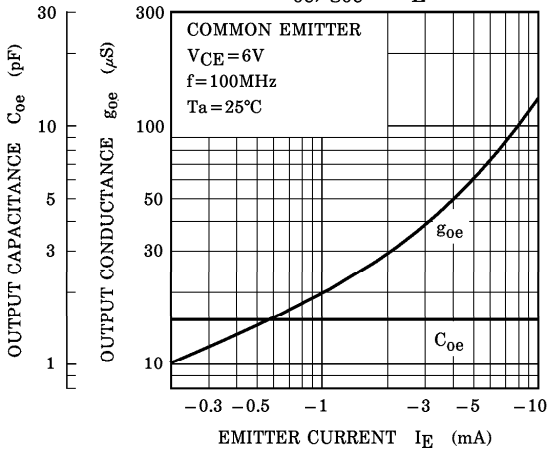
$h_{FE} - I_C$



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



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



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

