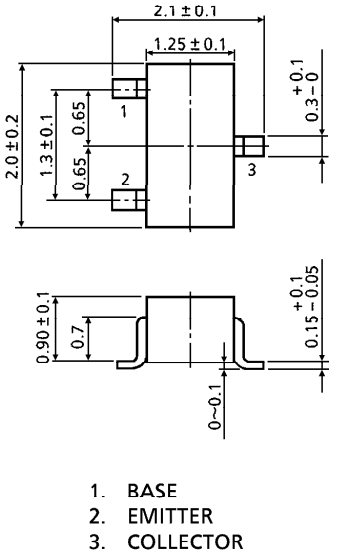
TOSHIBA TRANSISTOR SILOCON NPN EPITAXIAL PLANAR TYPE

2SC4249

TV VHF RF AMPLIFIER APPLICATIONS

- High Gain : G_{pe} = 24dB (Typ.) (f = 200MHz)
- Low Noise : NF = 2.0dB (Typ.) (f = 200MHz)
- Excellent Forward AGC Characteristics.

Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

JEDEC	—
EIAJ	SC-70
TOSHIBA	2-2E1A

Weight : 0.006g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	20	mA
Base Current	I_B	10	mA
Collector Power Dissipation	P_C	100	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} = 25V, I_E = 0	—	—	100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 2V, I_C = 0	—	—	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	30	—	—	V
DC Current Gain	h_{FE}	V_{CE} = 10V, I_C = 2mA	60	150	300	—
Reverse Transfer Capacitance	C_{re}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	0.35	0.5	pF
Transition Frequency	f_T	V_{CE} = 10V, I_C = 2mA	400	650	—	MHz
Power Gain	G_{pe}	V_{CC} = 12V, V_{AGC} = 1.4V f = 200MHz (Fig.1)	20	24	28	dB
Noise Figure	NF		—	2.0	3.2	dB
AGC Voltage (Note)	V_{AGC}	V_{CC} = 12V, GR = 30dB f = 200MHz	3.6	4.4	5.1	V

Note : V_{AGC} measured by test circuit shown in Fig.1 when power gain is reduced to 30dB compared that of V_{AGC} at 1.4V.

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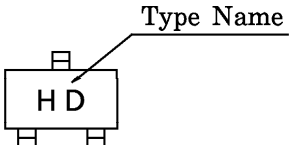
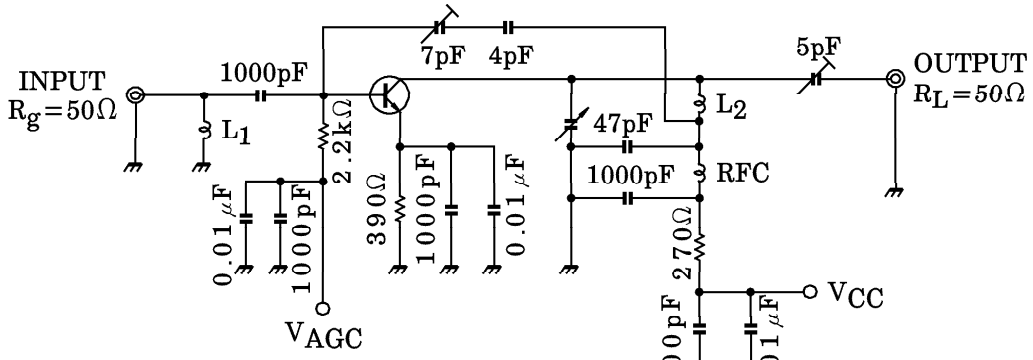
MARKING

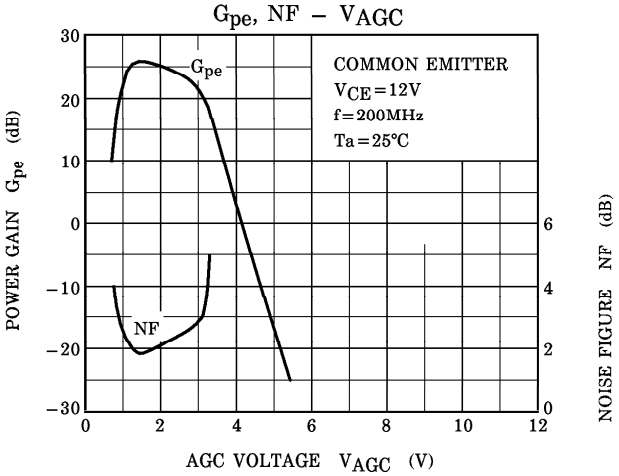




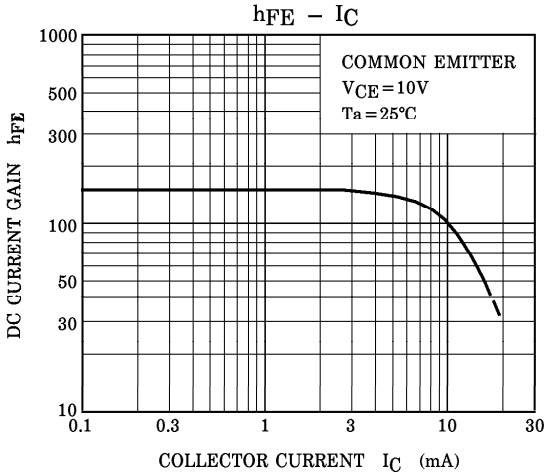
L_1 : RF Coil M-15T (TOKO Inc.) or EQUIVALENT
L_2 : RF Coil M-25T (TOKO Inc.) or EQUIVALENT

Fig.1 200MHz G_{pe}, NF TEST CIRCUIT

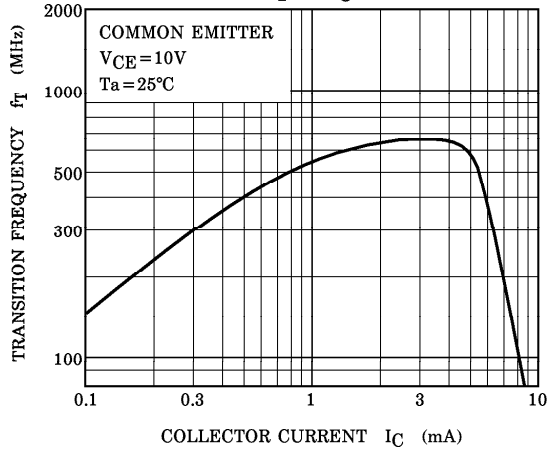
G_{pe}, NF – V_{AGC}



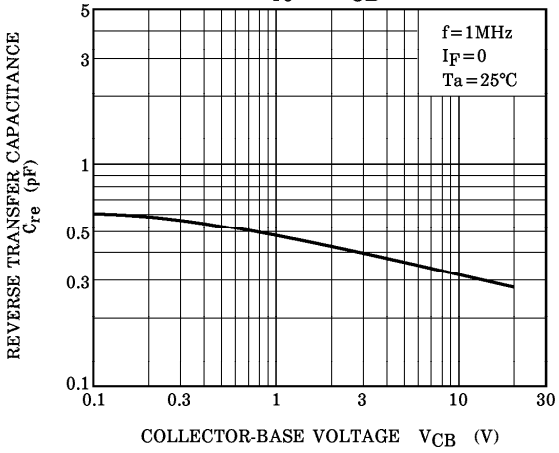
h_{FE} – I_C



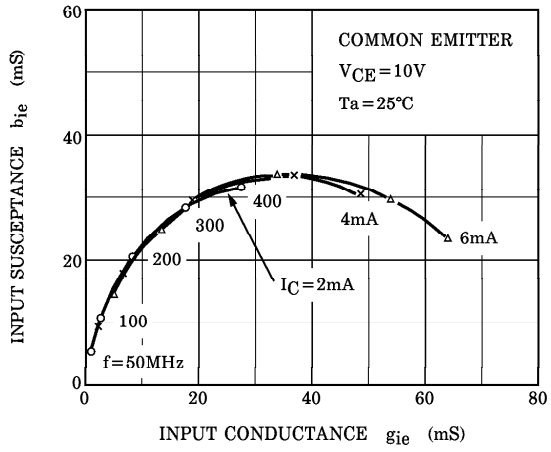
f_T – I_C



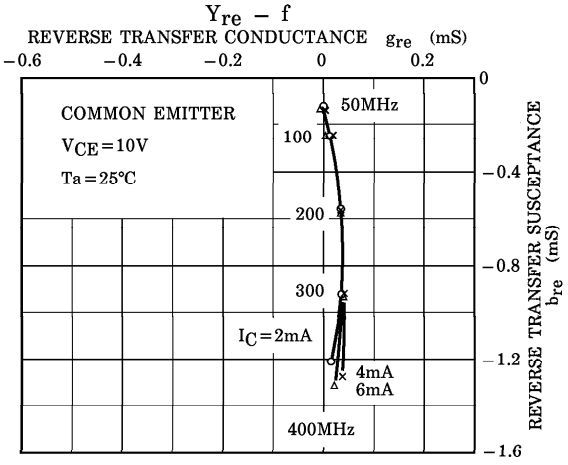
C_{re} – V_{CB}



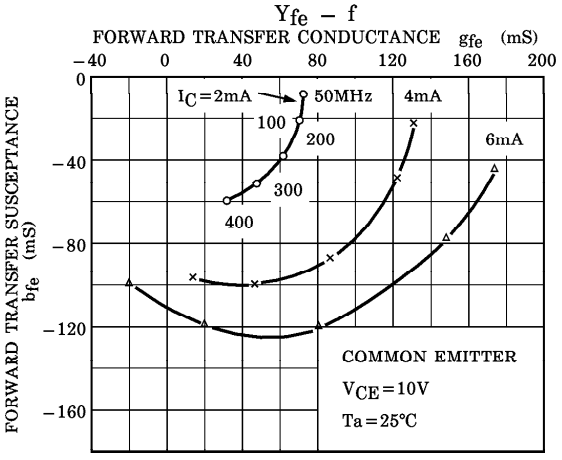
Y_{ie} – f



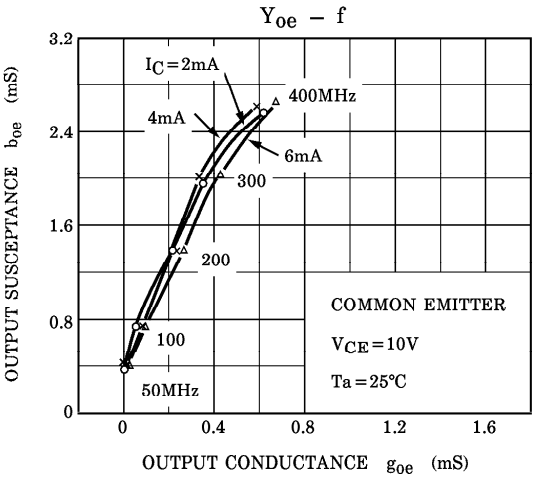
Y_{re} – f



Y_{fe} – f



Y_{oe} – f



P_C – Ta