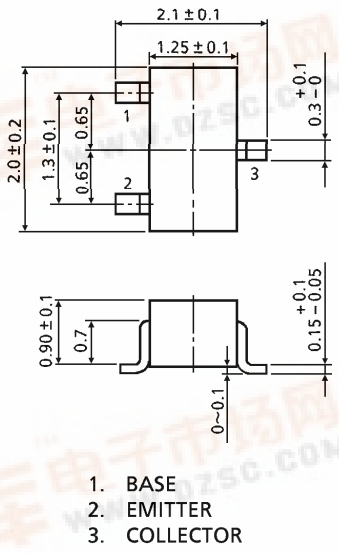
TOSHIBA TRANSISTOR SILOCON NPN EPITAXIAL PLANAR TYPE

2SC4250

TV VHF MIXER APPLICATIONS

- High Conversion Gain : Gce = 25dB (Typ.)
- Low Reverse Transfer Capacitance : C_{re} = 0.45pF (Typ.)

Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

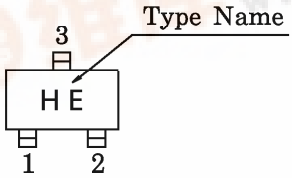
JEDEC	—
EIAJ	SC-70
TOSHIBA	2-2E1A

Weight : 0.006g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Base Current	I_B	25	mA
Collector Power Dissipation	P_C	100	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

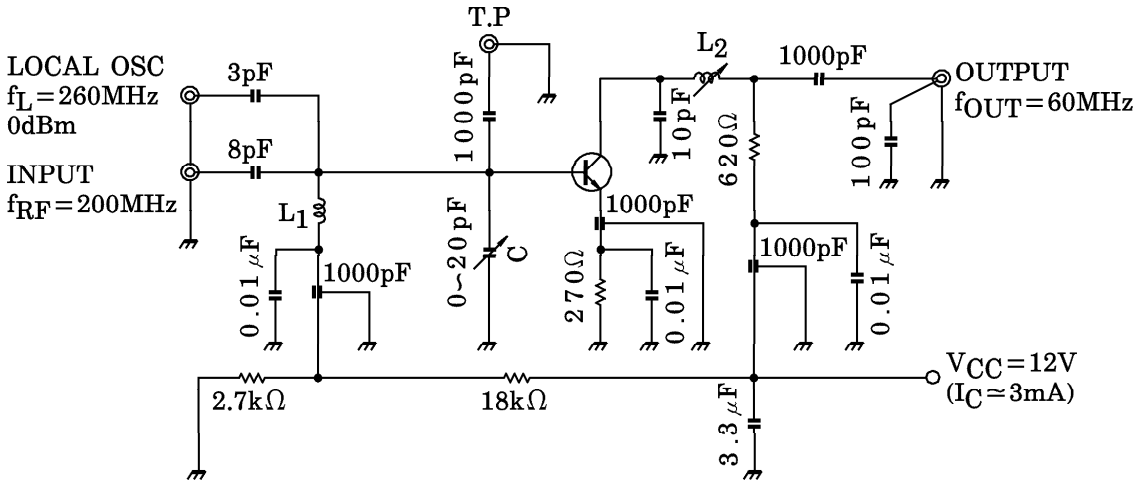
Marking



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} = 3V, I_C = 0	—	—	1000	nA
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	20	—	—	V
DC Current Gain	h_{FE}	V_{CE} = 10V, I_C = 5mA	40	150	300	—
Reverse Transfer Capacitance	C_{re}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	0.45	0.6	pF
Transition Frequency	f_T	V_{CE} = 10V, I_C = 5mA	900	1400	—	MHz
Conversion Gain	G_{ce}	V_{CC} = 12V, f = 200MHz	20	25	—	dB
Noise Figure	NF	f_L = 260MHz (Fig.1)	—	4.3	6	dB

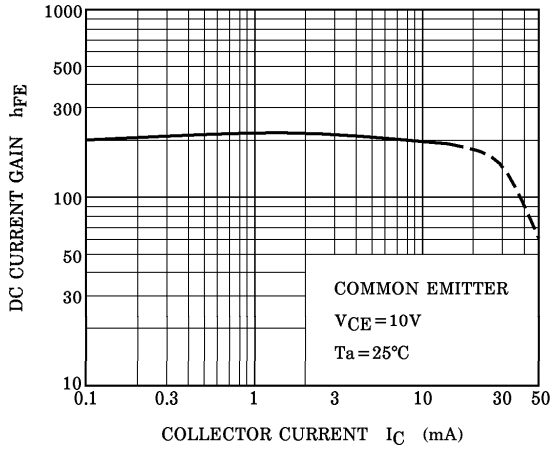
961001EAA1



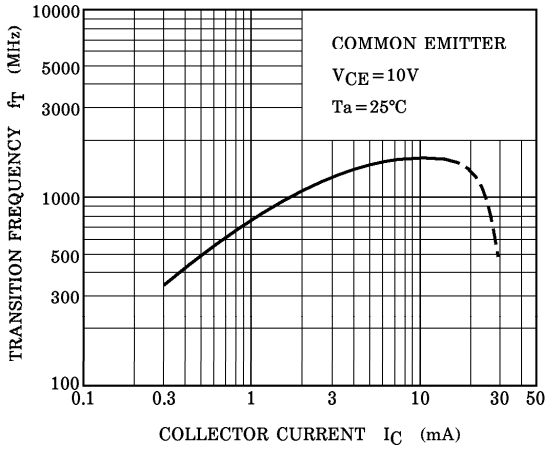
L_1 : 0.8mmϕ SILVER PLATED COPPER WIRE, 1.5T 5mm ID
L_2 : COIL WITH CORE SCN-5962A①-③ (TOKO INC.) OR EQUIVALENT
C : AIR TRIMMER TTA25A200A (MURATA MFG. Co., LTD.) OR EQUIVALENT

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

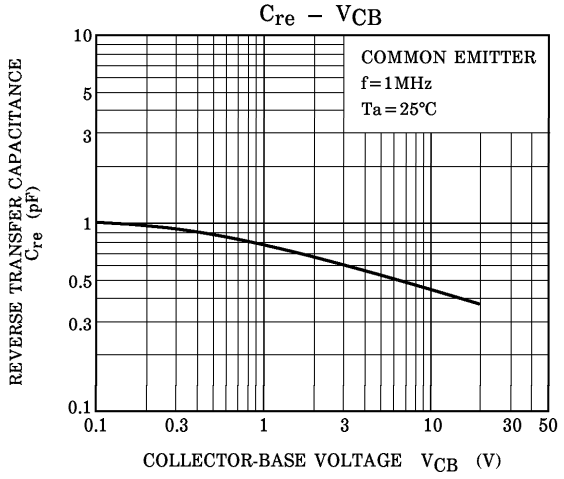
h_{FE} – I_C



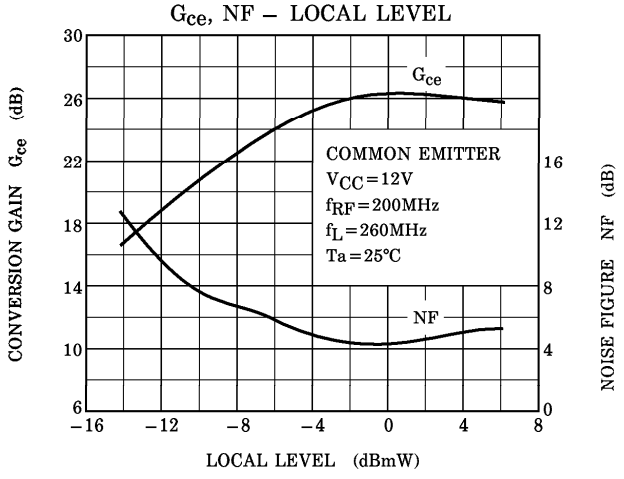
f_T – I_C



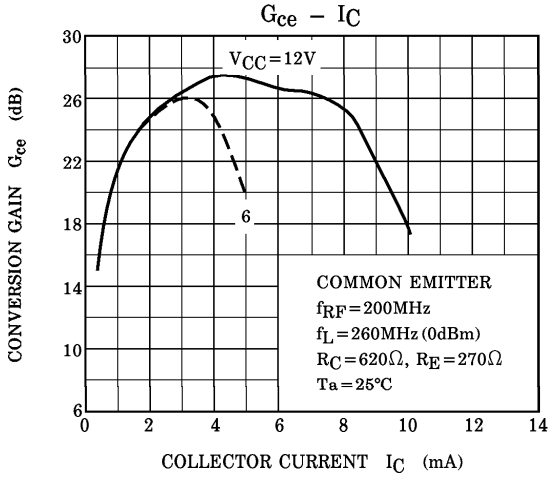
C_{re} – V_{CB}



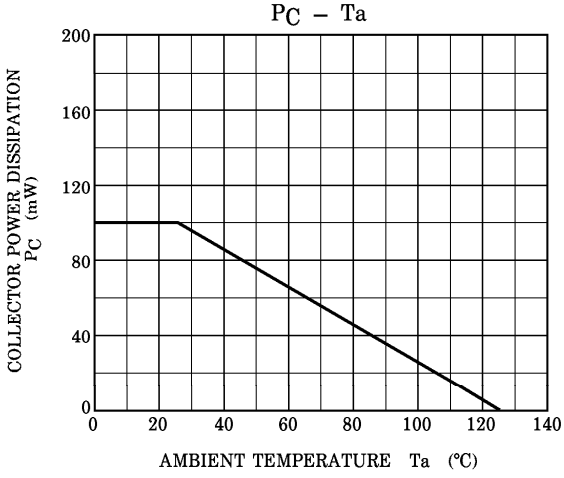
G_{ce}, NF – LOCAL LEVEL



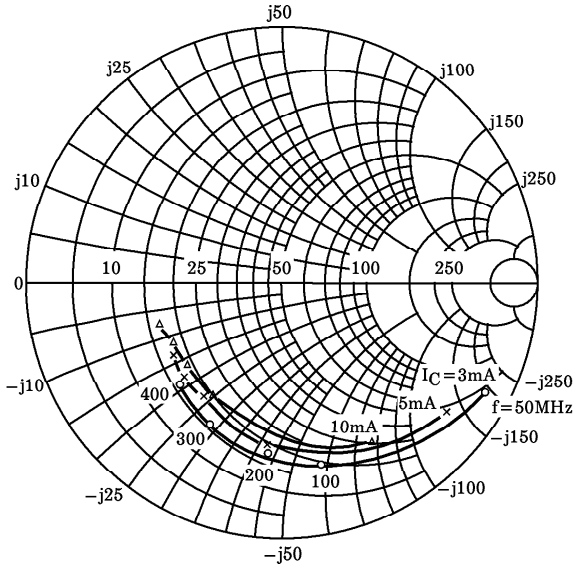
G_{ce} – I_C



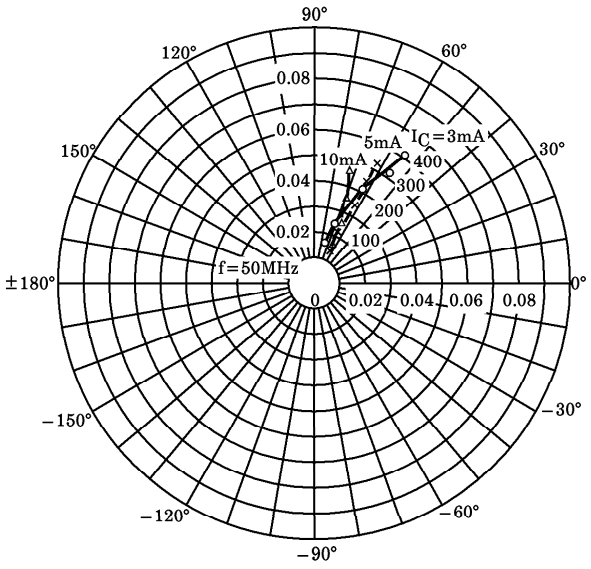
P_C – Ta



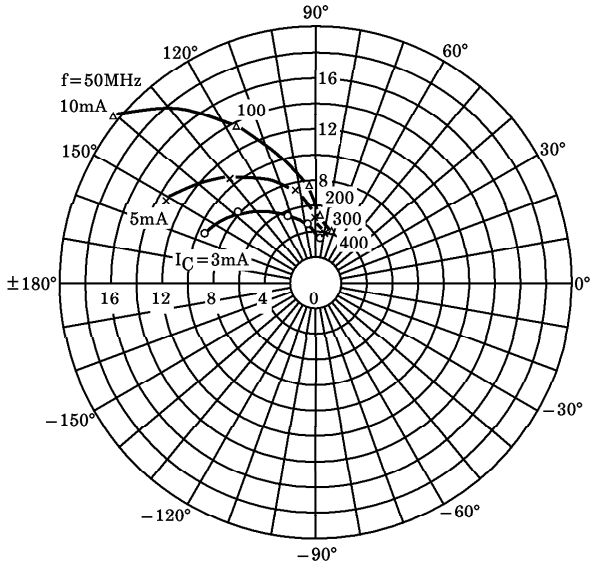
S_{11e}
V_{CE} = 10V
Ta = 25°C
(UNIT : Ω)



S_{12e}
V_{CE} = 10V
Ta = 25°C



S_{21e}
V_{CE} = 10V
Ta = 25°C



S_{22e}
V_{CE} = 10V
Ta = 25°C
(UNIT : Ω)