

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC3120

TV TUNER, UHF MIXER APPLICATIONS

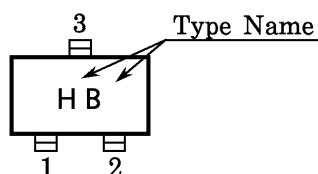
VHF ~ UHF BAND RF AMPLIFIER APPLICATIONS

Unit in mm

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	30	V
Collector-Emitter Voltage	V _{CEO}	15	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	150	mW
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55~125	°C

Marking



		1. BASE 2. EMITTER 3. COLLECTOR	
JEDEC	—		
EIAJ	—		
TOSHIBA	2-3F1A		

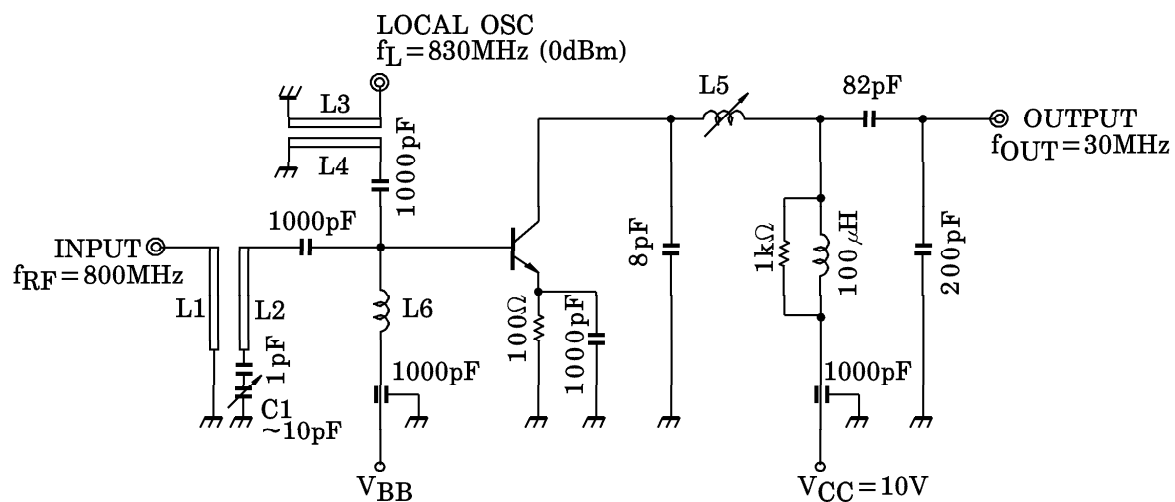
Weight : 0.012g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

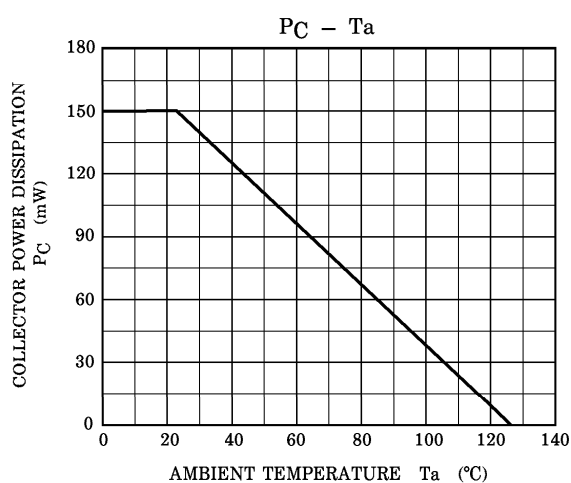
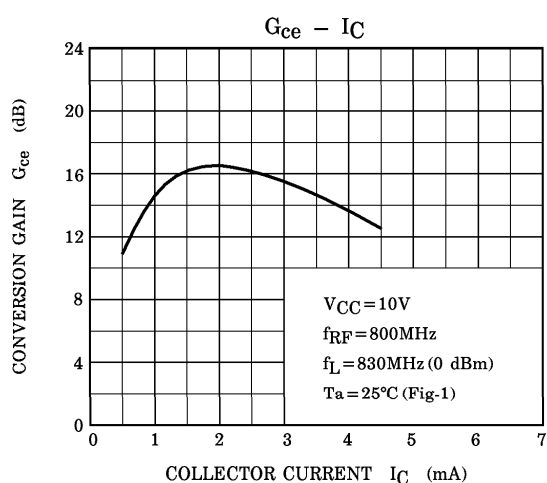
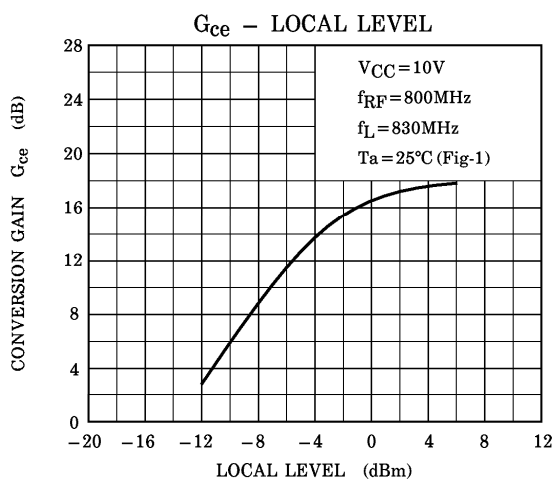
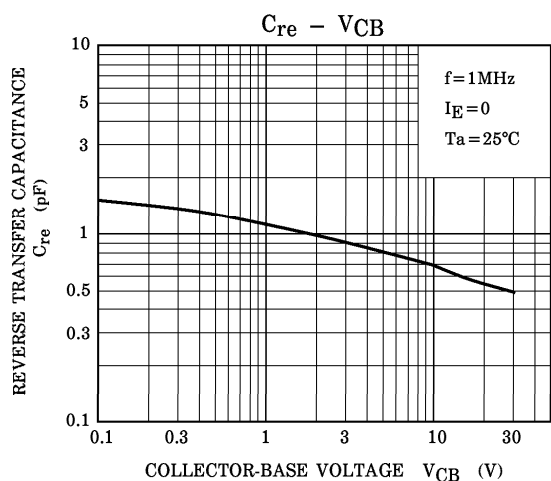
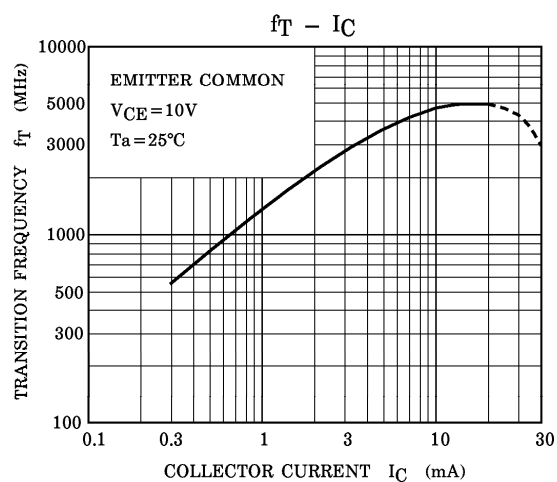
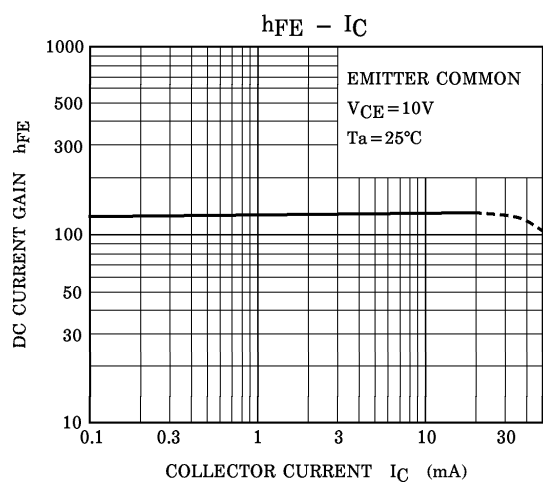
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CBO}	V _{CB} = 30V, I _E = 0	—	—	0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 2V, I _C = 0	—	—	1.0	μA
Collector-Emitter Breakdown Voltage	V _(BR) CEO	I _C = 1mA, I _B = 0	15	—	—	V
DC Current Gain	h _{FE}	V _{CE} = 10V, I _C = 5mA	40	100	200	—
Reverse Transfer Capacitance	C _{re}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	0.6	0.9	pF
Transition Frequency	f _T	V _{CE} = 10V, I _C = 2mA	1500	2400	—	MHz
Conversion Gain	G _{ce}	V _{CC} = 10V, I _C = 2mA, f = 800MHz,	12	17	—	dB
Noise Figure	NF	f _L = 830MHz (0dBm) (Fig.1)	—	8	—	dB

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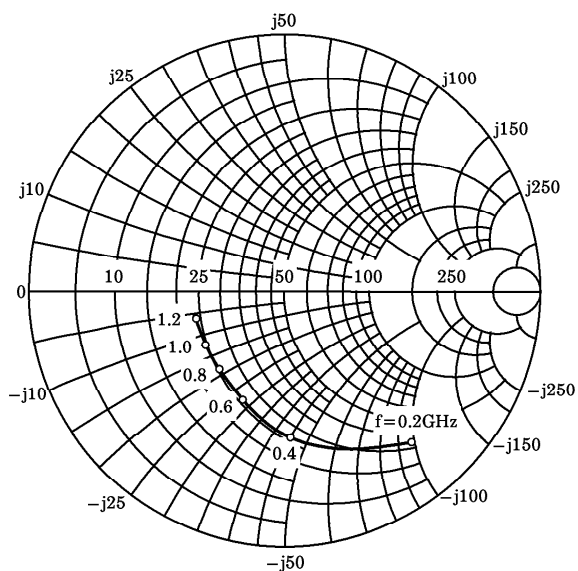
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Fig.1 800MHz G_{ce} , NF TEST CIRCUIT

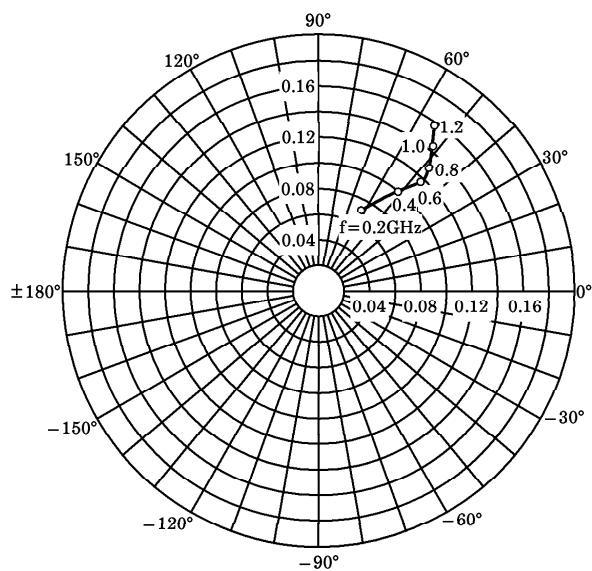
- L1~L4 : $\phi 0.8\text{mm}$ SILVER PLATED COPPER WIRE
 L5 : AIR COIL SCN-5948 ① - ③ TOKO OR EQUIVALENT
 L6 : $\phi 0.2\text{mm}$ COPPER WIRE 10T 5mm ID
 C1 : AIR TRIMMER TTA23A100 MURATA MFC. Co., LTD. OR EQUIVALENT



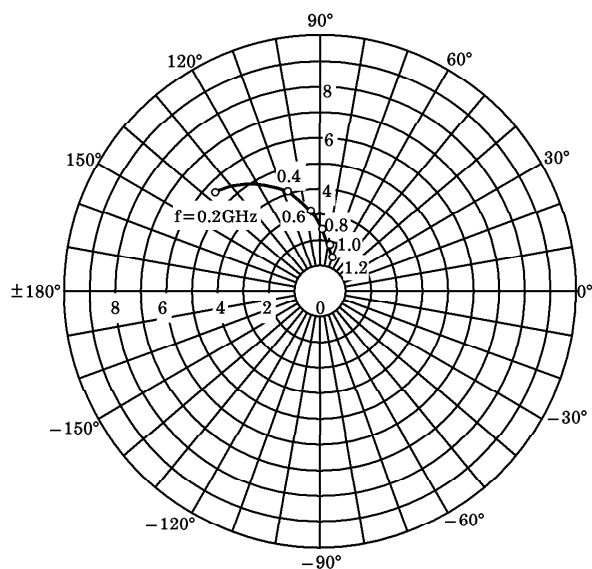
S_{11e}
 $V_{CE} = 10V$
 $I_C = 2mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)



S_{12e}
 $V_{CE} = 10V$
 $I_C = 2mA$
 $T_a = 25^\circ C$



S_{21e}
 $V_{CE} = 10V$
 $I_C = 2mA$
 $T_a = 25^\circ C$



S_{22e}
 $V_{CE} = 10V$
 $I_C = 2mA$
 $T_a = 25^\circ C$
 (UNIT : Ω)

