

TOSHIBA TRANSISTOR SILOCON NPN EPITAXIAL PLANAR TYPE

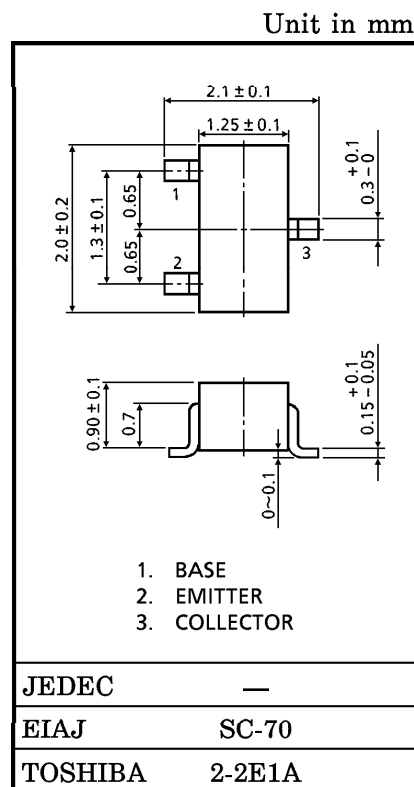
## 2SC4249

TV VHF RF AMPLIFIER APPLICATIONS

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

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

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	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55 \sim 125$	$^\circ\text{C}$

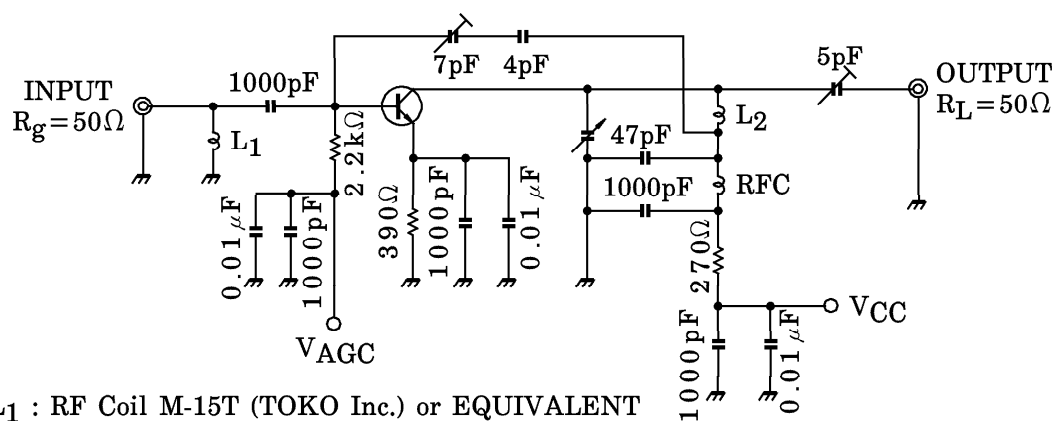
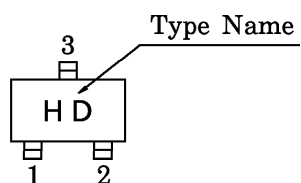
ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

Weight : 0.006g

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

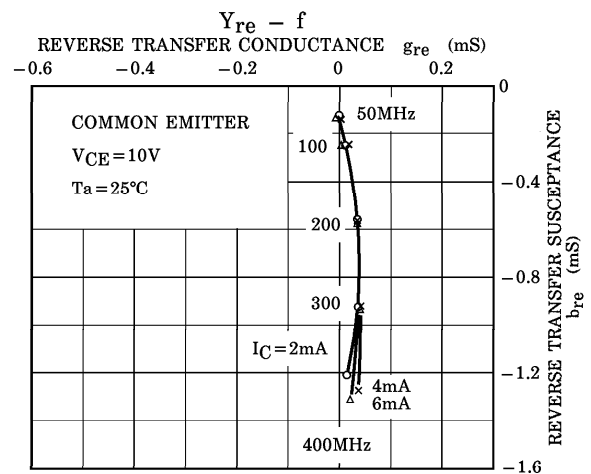
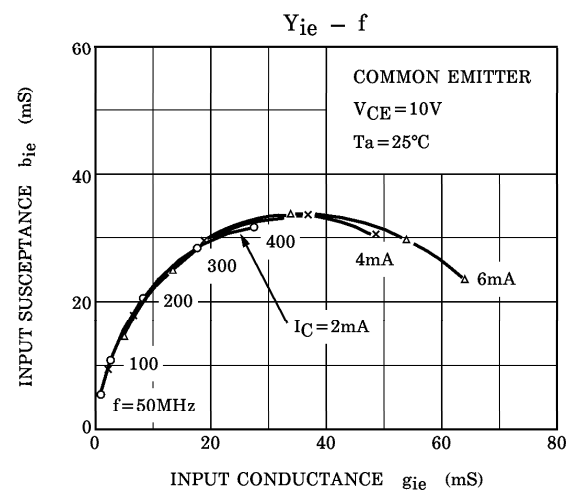
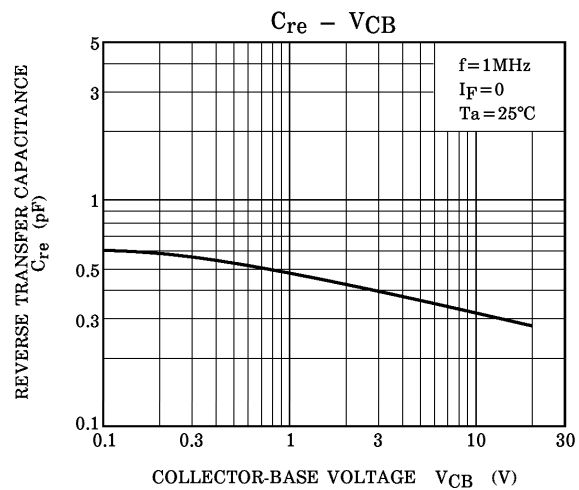
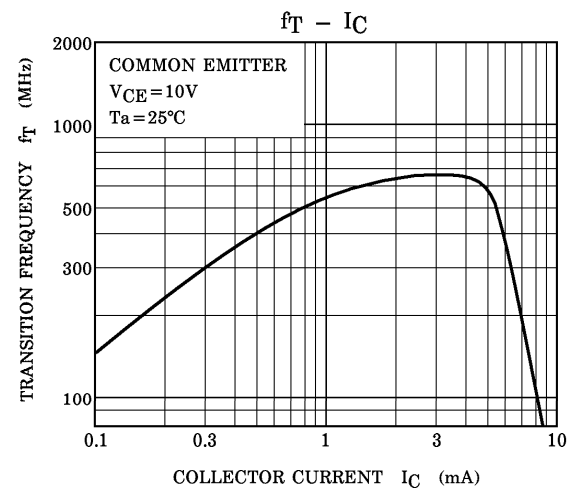
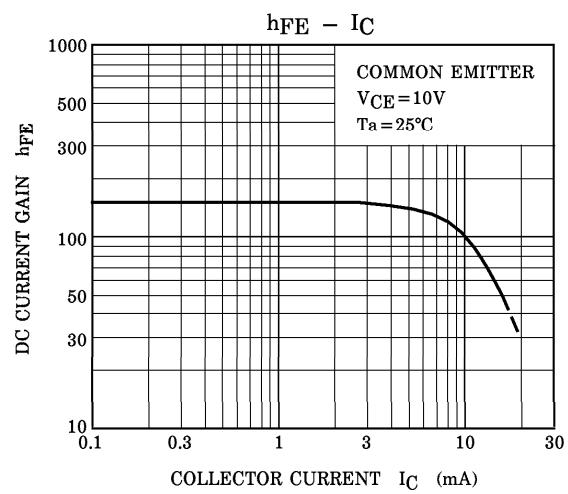
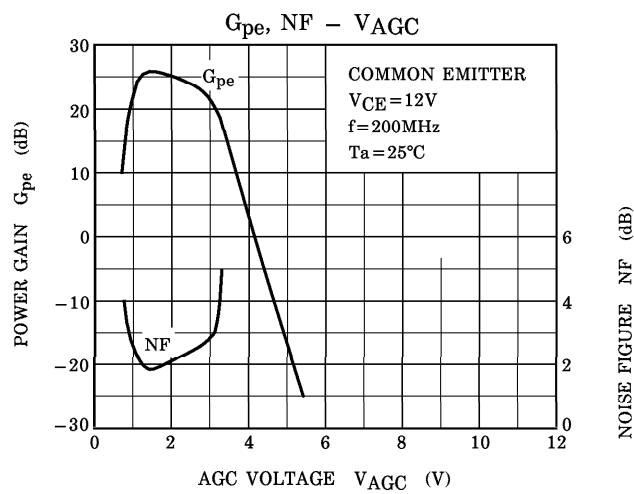
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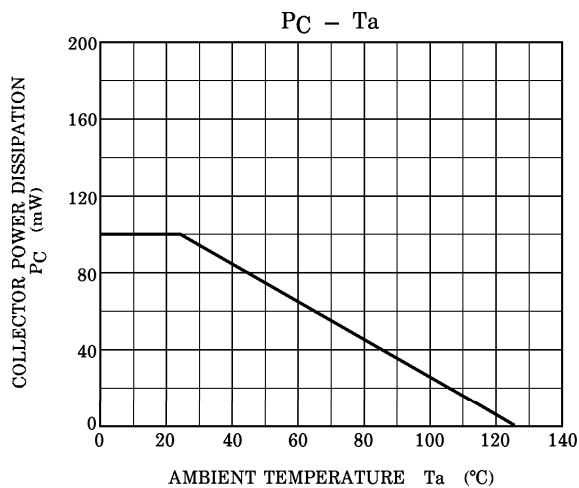
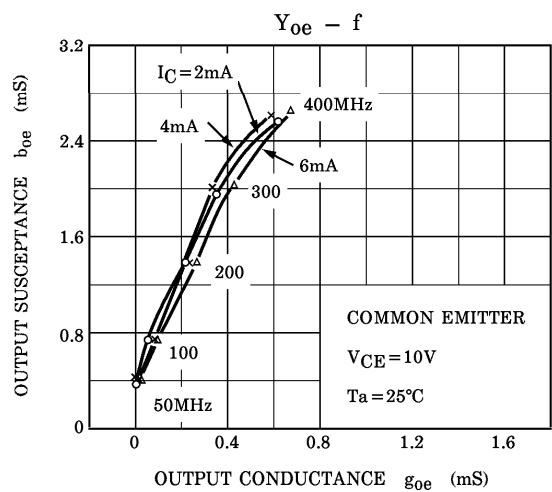
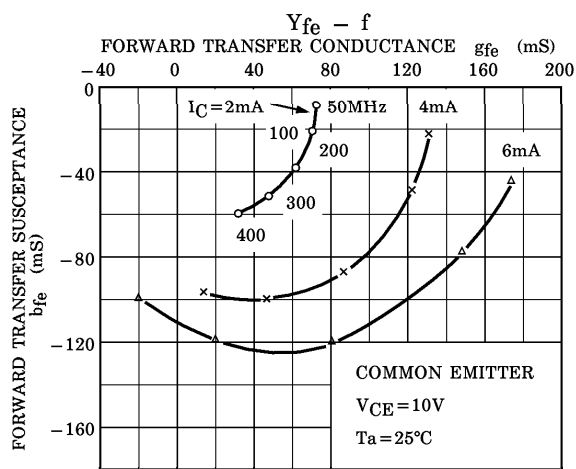


L<sub>1</sub> : RF Coil M-15T (TOKO Inc.) or EQUIVALENT

L<sub>2</sub> : RF Coil M-25T (TOKO Inc.) or EQUIVALENT

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





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