

TOSHIBA TRANSISTOR SILICON NPN PLANAR TYPE

# 2SC4214

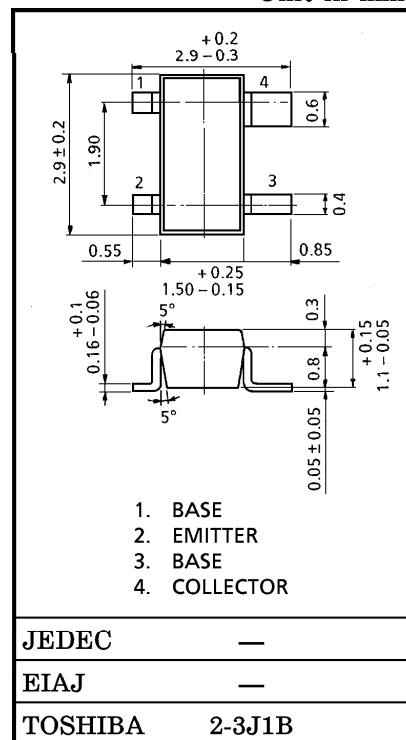
UHF TV TUNER RF AMPLIFIER APPLICATIONS

Unit in mm

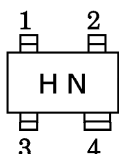
- Low Noise Figure : NF=2.8dB (Typ.)
- High Power Gain  $V_{CC}=4.5V$  :  $G_{pb}=15dB$  (Typ.)
- Excellent Forward AGC Characteristics

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	25	V
Collector-Emitter Voltage	$V_{CEO}$	20	V
Emitter-Base Voltage	$V_{EBO}$	2	V
Base Current	$I_B$	4	mA
Collector Current	$I_C$	20	mA
Collector Power Dissipation	$P_C$	150	mW
Junction Temperature	$T_j$	125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ C$



Marking

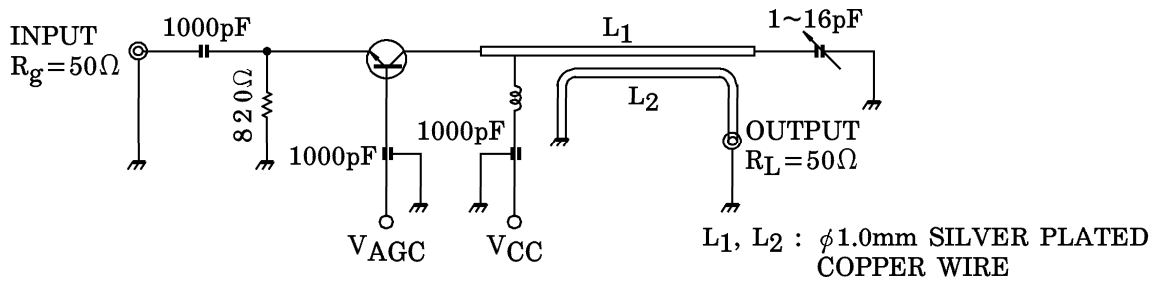


ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=10V, I_E=0$	—	—	0.1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=2V, I_C=0$	—	—	1	$\mu A$
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	20	—	—	V
DC Current Gain	$h_{FE}$	$V_{CE}=3.0V, I_C=1mA$	40	100	—	—
Transition Frequency	$f_T$	$V_{CE}=3.0V, I_C=1mA$	500	850	—	MHz
Reverse Transfer Capacitance	$C_{rb}$	$V_{CE}=2.0V, I_B=0, f=1MHz$	—	0.3	0.5	pF
Power Gain	$G_{pb}$	$V_{CC}=4.5V, V_{AGC}=2.0V$	10	15	—	dB
Noise Figure	NF	$f=800MHz$ (Fig.1)	—	2.8	4.5	dB
AGC Voltage	$V_{AGC}$	$V_{CC}=4.5V, G.R.=-20dB, f=800MHz$	2.5	3.2	4.0	V

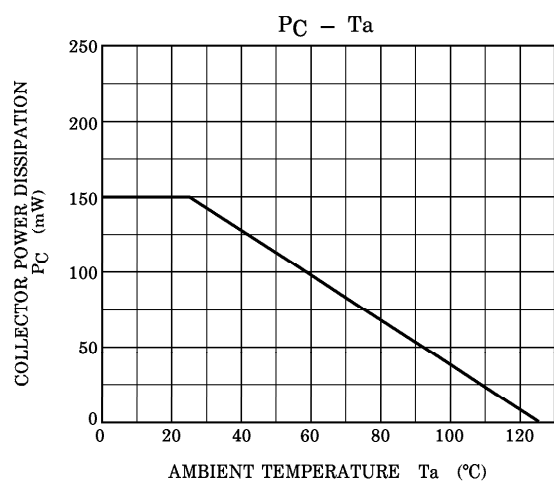
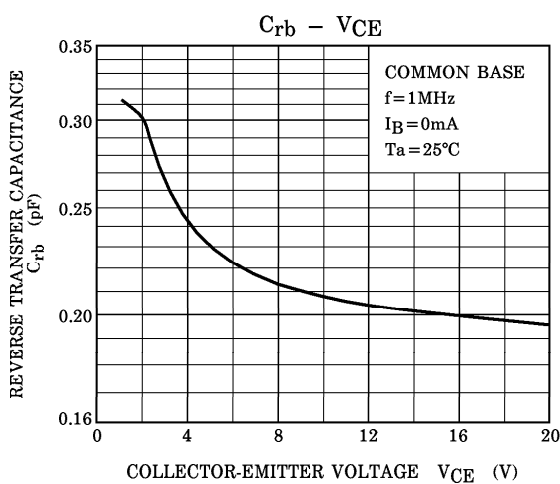
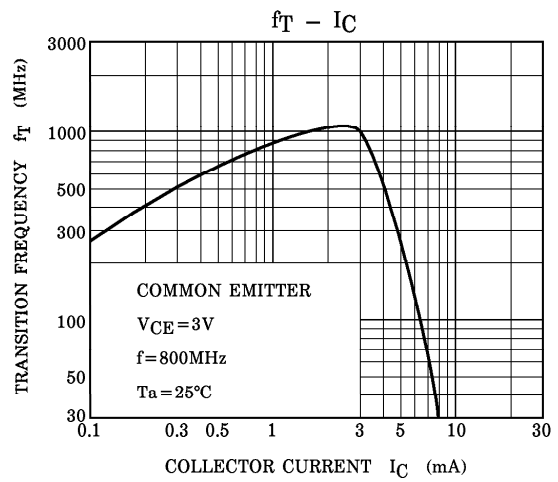
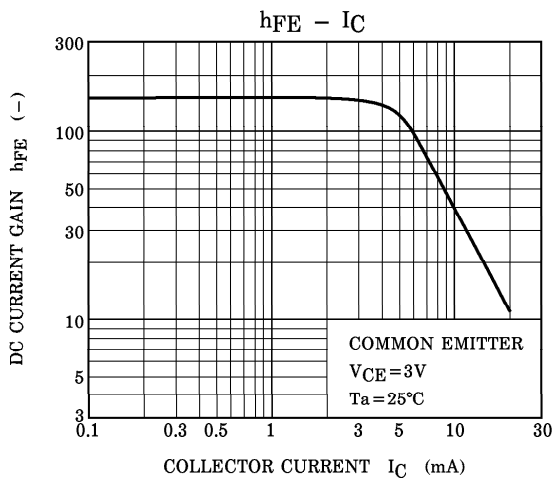
961001EAA1

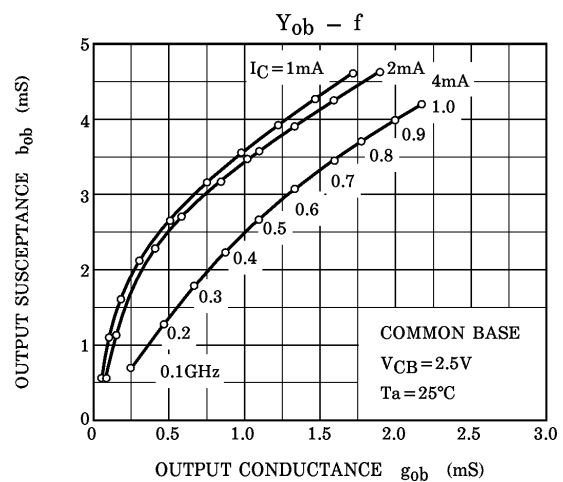
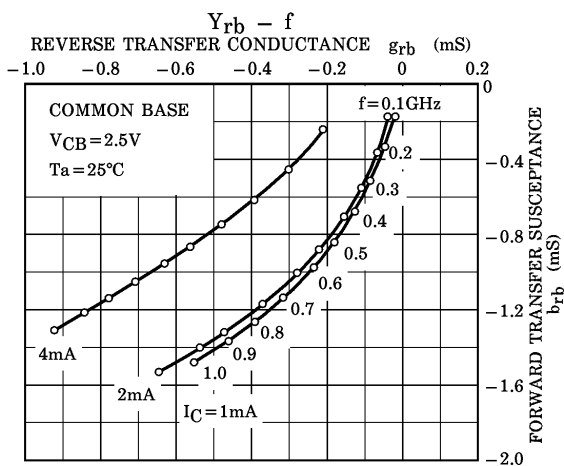
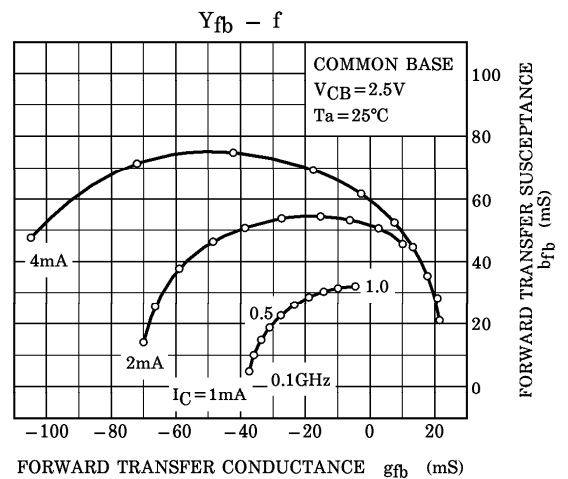
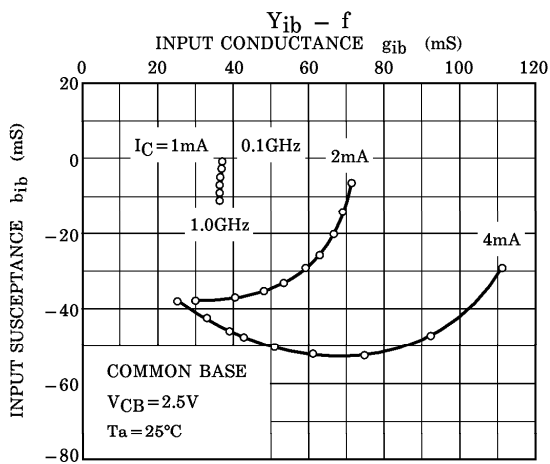
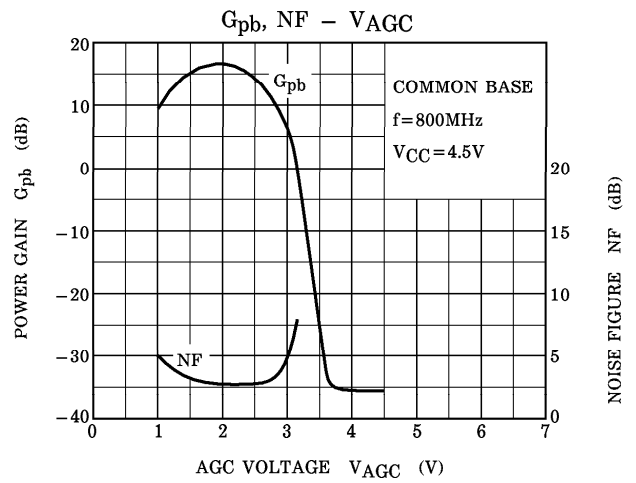
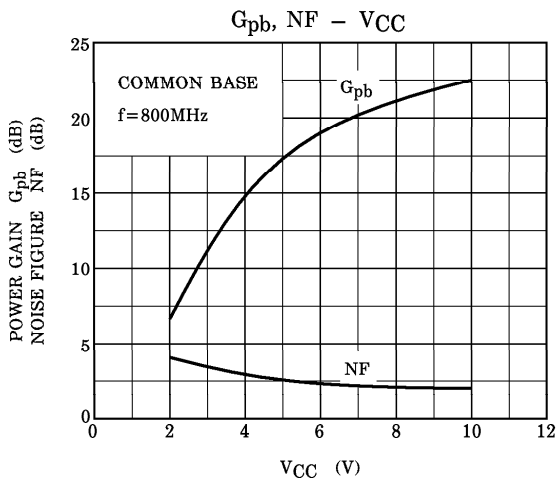
- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.



(Note)  $V_{AGC}$  measured by the test circuit shown in Fig.1, when the power gain is reduced to 20dB compared with  $G_{pb}$  shown above Table.

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





Copyright Each Manufacturing Company.

All Datasheets cannot be modified without permission.

This datasheet has been download from :

[www.AllDataSheet.com](http://www.AllDataSheet.com)

100% Free DataSheet Search Site.

Free Download.

No Register.

Fast Search System.

[www.AllDataSheet.com](http://www.AllDataSheet.com)