

TOSHIBA TRANSISTOR SILICON NPN PLANAR TYPE

# 2SC4214

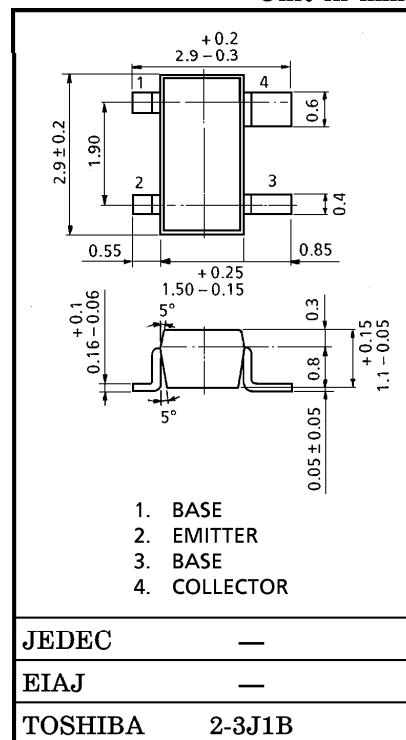
UHF TV TUNER RF AMPLIFIER APPLICATIONS

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

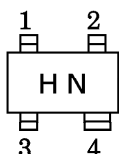
MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

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	$^\circ C$



Weight : 0.013g

Marking

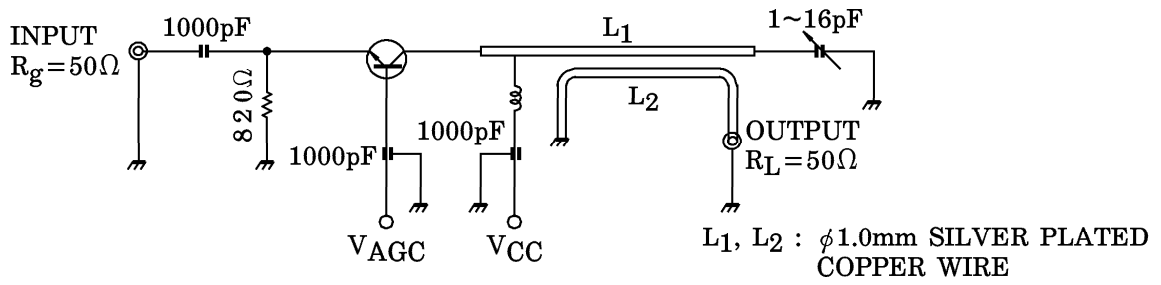


ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

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

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(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

