

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

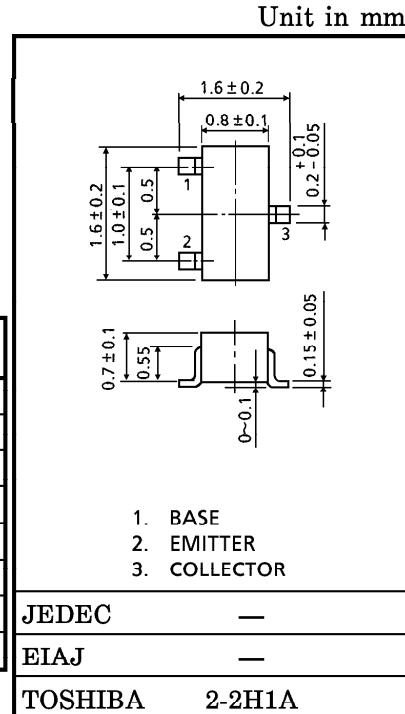
## 2SC5322

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS  
(CHIP :  $f_T = 16\text{GHz}$  series)

- Low Noise Figure :  $\text{NF} = 1.4\text{dB}$  ( $f = 2\text{GHz}$ )
- High Gain :  $\text{Ga} = 10\text{dB}$  ( $f = 2\text{GHz}$ )

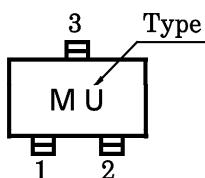
MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	8	V
Collector-Emitter Voltage	$V_{CEO}$	5	V
Emitter-Base Voltage	$V_{EBO}$	1.5	V
Collector Current	$I_C$	10	mA
Base Current	$I_B$	5	mA
Collector Power Dissipation	$P_C$	100	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-55\text{--}125$	$^\circ\text{C}$



Weight : 2.4mg

## MARKING

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	$f_T$	$V_{CE} = 3\text{V}$ , $I_C = 7\text{mA}$	9	—	—	GHz
Insertion Gain	$ S_{21e} ^2(1)$	$V_{CE} = 3\text{V}$ , $I_C = 7\text{mA}$ , $f = 1\text{GHz}$	—	15.5	—	dB
	$ S_{21e} ^2(2)$	$V_{CE} = 3\text{V}$ , $I_C = 7\text{mA}$ , $f = 2\text{GHz}$	—	10	—	
Noise Figure	NF(1)	$V_{CE} = 3\text{V}$ , $I_C = 3\text{mA}$ , $f = 1\text{GHz}$	—	0.9	1.8	dB
	NF(2)	$V_{CE} = 3\text{V}$ , $I_C = 3\text{mA}$ , $f = 2\text{GHz}$	—	1.4	2.3	

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## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I <sub>CBO</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0	—	—	1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> =1V, I <sub>C</sub> =0	—	—	1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =7mA	50	—	250	V
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =2.5V, I <sub>E</sub> =0, f=1MHz (Note)	—	0.45	—	pF
Reverse Transfer Capacitance	C <sub>re</sub>		—	0.35	—	pF

Note : C<sub>re</sub> is measured by 3 terminal method with Capacitance bridge.

## CAUTION

This device electrostatic sensitivity. Please handle with caution.