

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC5321

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

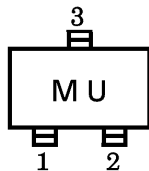
Unit in mm

- Low Noise Figure : $NF = 1.4 \text{ dB}$ ($f = 2 \text{ GHz}$)
- High Gain : $|S_{21e}|^2 = 10 \text{ dB}$ ($f = 2 \text{ GHz}$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CB0}	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}	$-55 \sim 125$	$^\circ\text{C}$

MARKING



		1. BASE 2. EMITTER 3. COLLECTOR
JEDEC	—	
EIAJ	SC-70	
TOSHIBA	2-2E1A	

Weight : 0.006 g

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)$	$V_{CE} = 3 \text{ V}, I_C = 7 \text{ mA}, f = 1 \text{ GHz}$	12.5	15.5	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = 3 \text{ V}, I_C = 7 \text{ mA}, f = 2 \text{ GHz}$	7	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	2.2	

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

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 8 \text{ V}, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1 \text{ V}, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 3 \text{ V}, I_C = 7 \text{ mA}$	50	—	250	V
Output Capacitance	C_{ob}	$V_{CB} = 2.5 \text{ V}, I_E = 0,$	—	0.4	—	pF
Reverse Transfer Capacitance	C_{re}	$f = 1 \text{ MHz}$ (Note)	—	0.3	0.7	pF

(Note) : C_{re} is measured by 3 terminal method with Capacitance bridge.

CAUTION

This device electrostatic sensitivity. Please handle with caution.

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