

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

MT4S04

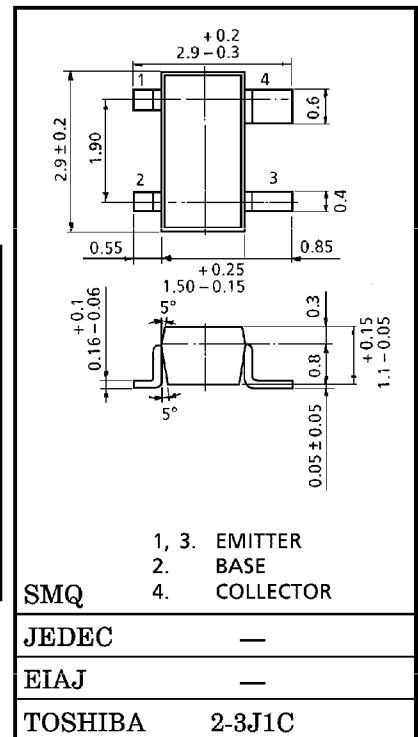
VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

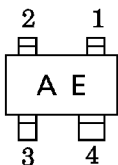
- Low Noise : Figure : NF = 1.2 dB
- High Gain : Gain = 13.5 dB (f = 1 GHz)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	10	V
Collector-Emitter Voltage	V _{CEO}	5	V
Emitter-Base Voltage	V _{EBO}	2	V
Base Current	I _C	100	mA
Collector Current	I _B	10	mA
Collector Power Dissipation	P _C	150	mW
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55~125	°C



MARKING



MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f _T (1)	V _{CE} = 1 V, I _C = 5 mA	2	4.5	—	GHz
	f _T (2)	V _{CE} = 3 V, I _C = 7 mA	5	7	—	
Insertion Gain	S _{21e} ² (1)	V _{CE} = 1 V, I _C = 5 mA, f = 1 GHz	8	10	—	dB
	S _{21e} ² (2)	V _{CE} = 3 V, I _C = 20 mA, f = 1 GHz	11.5	13.5	—	
Noise Figure	NF (1)	V _{CE} = 1 V, I _C = 5 mA, f = 1 GHz	—	1.3	2.2	dB
	NF (2)	V _{CE} = 3 V, I _C = 7 mA, f = 1 GHz	—	1.2	2	

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 5\text{ V}, I_E = 0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 5\text{ mA}$	60	—	160	—
Reverse Transfer Capacitance	C_{re}	$V_{CB} = 1\text{ V}, I_E = 0, f = 1\text{ MHz}$ (Note)	—	0.75	1.1	pF

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