

## MT3S31T

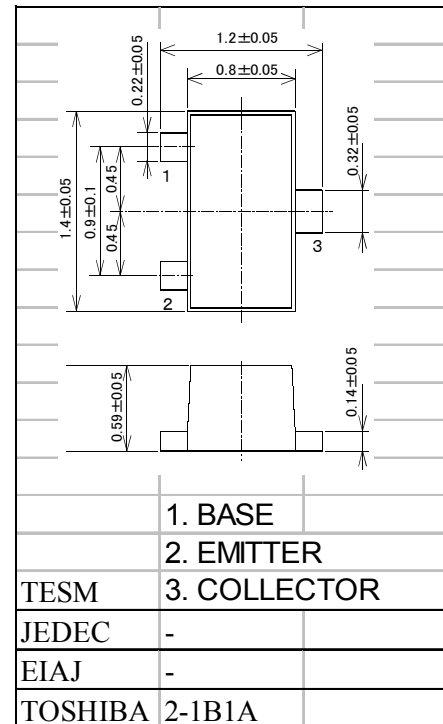
Unit in mm

### VHF-UHF LOW NOISE AMPLIFIER APPLICATION

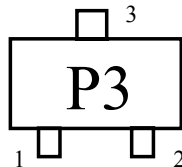
- Low Noise Figure : NF=1.3dB (@ f=2GHz)
- High Gain :  $|S_{21e}|^2=12.5\text{dB}$  (@ f=2GHz)

### MAXIMUM RATINGS (Ta=25deg.)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	8	V
Collector-Emitter Voltage	V <sub>CEO</sub>	4.5	V
Emitter-Base Voltage	V <sub>EBO</sub>	1.5	V
Collector-Current	I <sub>C</sub>	24	mA
Base Current	I <sub>B</sub>	12	mA
Collector Power Dissipation	P <sub>C</sub>	100	mW
Junction Temperature	T <sub>j</sub>	125	deg
Storage Temperature Range	T <sub>stg</sub>	-55-125	deg.



### MARKING



### MICROWAVE CHARACTERISTICS (Ta=25deg.)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =10mA	15	19	-	GHz
Insertion Gain	$ S_{21e} ^2(1)$	V <sub>CE</sub> =3V, I <sub>C</sub> =10mA, f=1GHz	-	18	-	dB
	$ S_{21e} ^2(2)$	V <sub>CE</sub> =3V, I <sub>C</sub> =10mA, f=2GHz	8.5	12.5	-	dB
Noise Figure	NF(1)	V <sub>CE</sub> =3V, I <sub>C</sub> =4mA, f=1GHz	-	1.0	-	dB
	NF(2)	V <sub>CE</sub> =3V, I <sub>C</sub> =4mA, f=2GHz	-	1.3	2.0	dB

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**ELECTRICAL CHARACTERISTICS** (Ta=25deg.)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	ICBO	VCB=8V, IE=0	-	-	1	uA
Emitter Cut-off Current	IEBO	VEB=1V, IC=0	-	-	1	uA
DC Current Gain	hFE	VCE=3V, IC=10mA	100	-	200	-
Output Capacitance	Cob	VCB=1V, IE=0, f=1MHz	-	0.5	-	pF
Reverse Transistor Capacitance	Cre	VCB=1V, IE=0, f=1MHz (Note 1)	-	0.25	0.5	pF

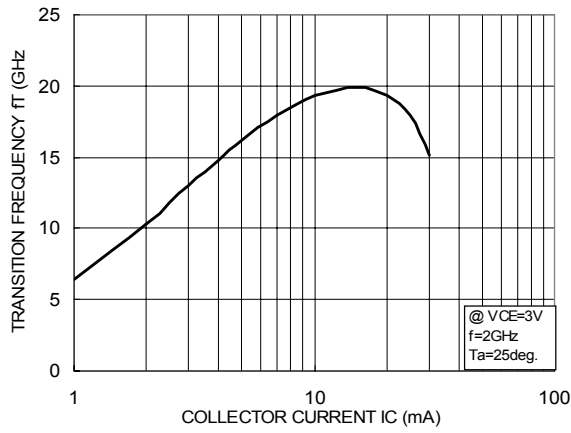
**NOTE**

Cre is measured by 3 terminal method with capacitance bridge.

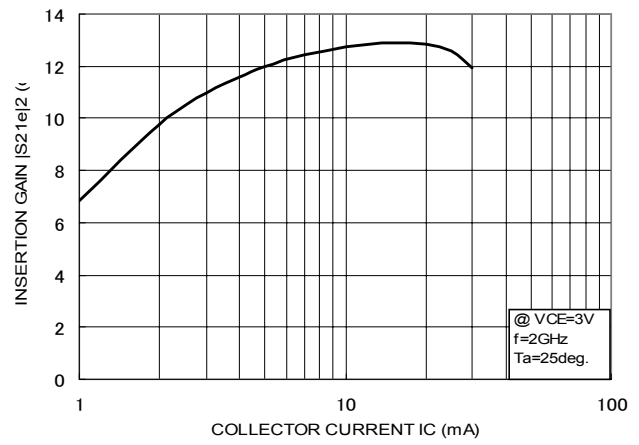
**CAUTION**

This device is sensitive to electrostatic discharge. Please make enough tool and equipment earthed when you handle.

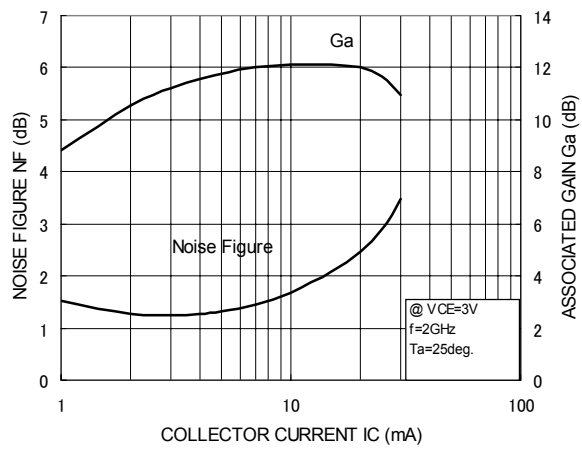
ft-IC



$|S_{21e}|^2$ -IC



NF-IC



$C_{ob}, C_{re}$ -VCB

