

MT3S31T

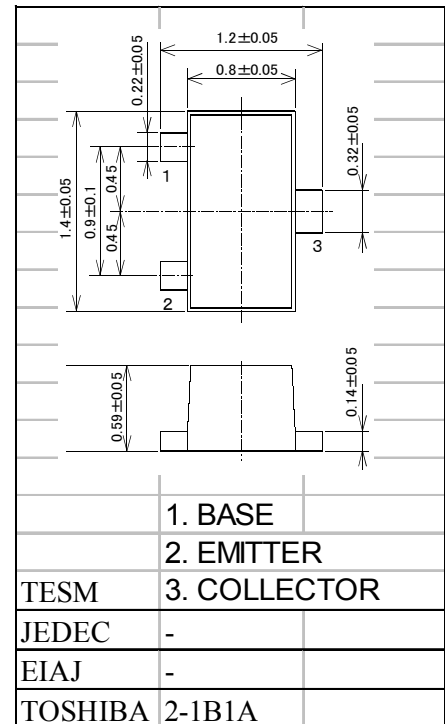
Unit in mm

VHF-UHF LOW NOISE AMPLIFIER APPLICATION

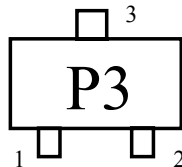
- Low Noise Figure : NF=1.3dB (@ f=2GHz)
- High Gain : $|S_{21e}|^2=12.5\text{dB}$ (@ f=2GHz)

MAXIMUM RATINGS (Ta=25deg.)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	8	V
Collector-Emitter Voltage	V _{CEO}	4.5	V
Emitter-Base Voltage	V _{EBO}	1.5	V
Collector-Current	I _C	24	mA
Base Current	I _B	12	mA
Collector Power Dissipation	P _C	100	mW
Junction Temperature	T _j	125	deg
Storage Temperature Range	T _{stg}	-55-125	deg.



MARKING



MICROWAVE CHARACTERISTICS (Ta=25deg.)

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

-TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

-The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other right of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.

-The information contained herein is subject to change without notice.

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.

