

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# HN9C13FT

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

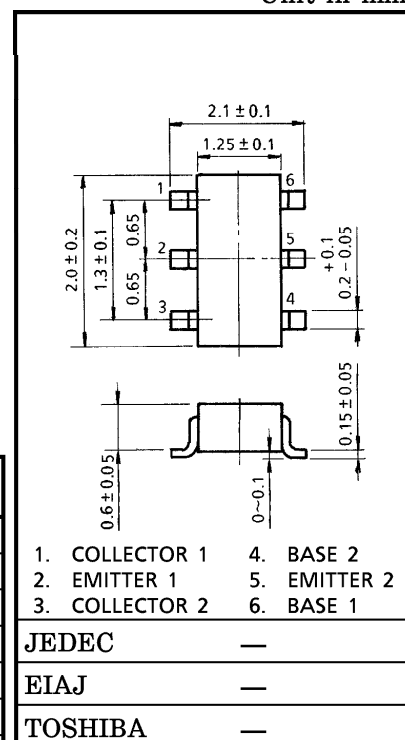
- TWO devices are built in to the super-thin and ultra super mini (6pins) package : TU6

## MOUNTED DEVICES

	Q1	Q2
Three-pins (SSM) mold products are corresponded.	2SC5261	2SC5066

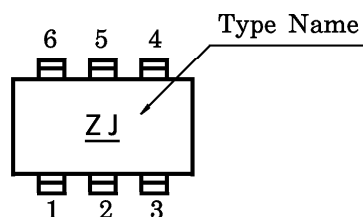
## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	Q1	Q2	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	15	20	V
Collector-Emitter Voltage	V <sub>CEO</sub>	7	12	V
Emitter-Base Voltage	V <sub>EBO</sub>	1.5	3	V
Collector Current	I <sub>C</sub>	15	30	mA
Base Current	I <sub>B</sub>	7	15	mA
Collector Power Dissipation	P <sub>C</sub>	200		mW
Junction Temperature	T <sub>j</sub>	125		°C
Storage Temperature Range	T <sub>stg</sub>	-55~125		°C

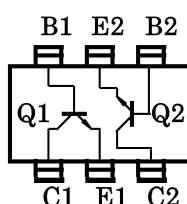


Weight : 0.008g

## MARKING



## PIN ASSIGNMENT (TOP VIEW)



961001EAA1

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## ELECTRICAL CHARACTERISTICS Q1 (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 10V, I_E = 0$	—	—	1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 1V, I_C = 0$	—	—	1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 7mA$	50	—	160	—
Transition Frequency	$f_T$	$V_{CE} = 5V, I_C = 7mA$	9	12	—	GHz
Insertion Gain	$ S_{21e} ^2 (1)$	$V_{CE} = 5V, I_C = 7mA, f = 1000MHz$	—	14	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = 5V, I_C = 7mA, f = 2000MHz$	5	8	—	dB
Noise Figure	NF (1)	$V_{CE} = 5V, I_C = 3mA, f = 1000MHz$	—	1.4	—	dB
	NF (2)	$V_{CE} = 5V, I_C = 3mA, f = 2000MHz$	—	1.7	3	dB

## ELECTRICAL CHARACTERISTICS Q2 (Ta = 25°C)

CHARACTERISTIC			MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 10V, I_E = 0$	—	—	1	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 1V, I_C = 0$	—	—	1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 10mA$	80	—	240	—
Transition Frequency	$f_T$	$V_{CE} = 5V, I_C = 10mA$	5	7	—	GHz
Insertion Gain	$ S_{21e} ^2 (1)$	$V_{CE} = 5V, I_C = 10mA, f = 500MHz$	—	16	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = 5V, I_C = 10mA, f = 1000MHz$	8	11	—	dB
Noise Figure	NF (1)	$V_{CE} = 5V, I_C = 3mA, f = 500MHz$	—	1	—	dB
	NF (2)	$V_{CE} = 5V, I_C = 3mA, f = 1000MHz$	—	1.1	2	dB