

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN9C04FT

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

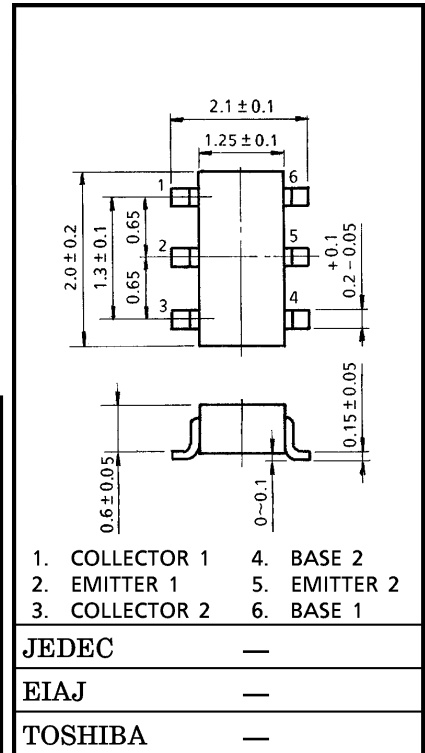
- TWO devices are built in to the super-thin and ultra super mini (6pins) package : TU6

MOUNTED DEVICES

	Q1	Q2
Three-pins (SSM) mold products are corresponded.	2SC5256	2SC5091

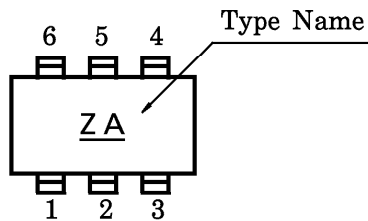
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	Q1	Q2	UNIT
Collector-Base Voltage	V _{CBO}	15	20	V
Collector-Emitter Voltage	V _{CEO}	7	8	V
Emitter-Base Voltage	V _{EBO}	1.5	1.5	V
Collector Current	I _C	40	40	mA
Base Current	I _B	20	20	mA
Collector Power Dissipation	P _C	200		mW
Junction Temperature	T _j	125		°C
Storage Temperature Range	T _{stg}	-55~125		°C

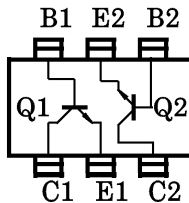


Weight : 0.008g

MARKING



PIN ASSIGNMENT (TOP VIEW)



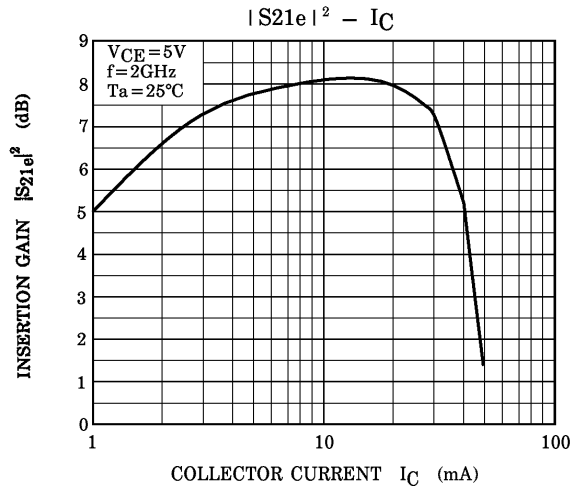
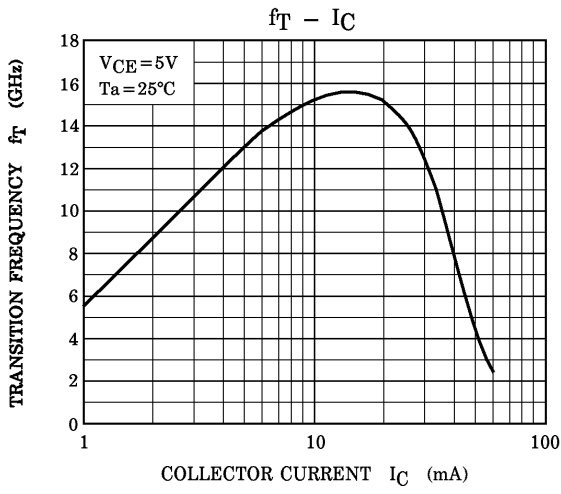
ELECTRICAL CHARACTERISTICS Q1 (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10V, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1V, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 20mA$	50	—	160	—
Transition Frequency	f_T	$V_{CE} = 5V, I_C = 20mA$	9	12	—	GHz
Insertion Gain	$ S_{21e} ^2 (1)$	$V_{CE} = 5V, I_C = 20mA,$ $f = 1000MHz$	—	14	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = 5V, I_C = 20mA,$ $f = 2000MHz$	5	8	—	dB
Noise Figure	NF (1)	$V_{CE} = 5V, I_C = 5mA, f = 1000MHz$	—	1.1	—	dB
	NF (2)	$V_{CE} = 5V, I_C = 5mA, f = 2000MHz$	—	1.5	3	dB

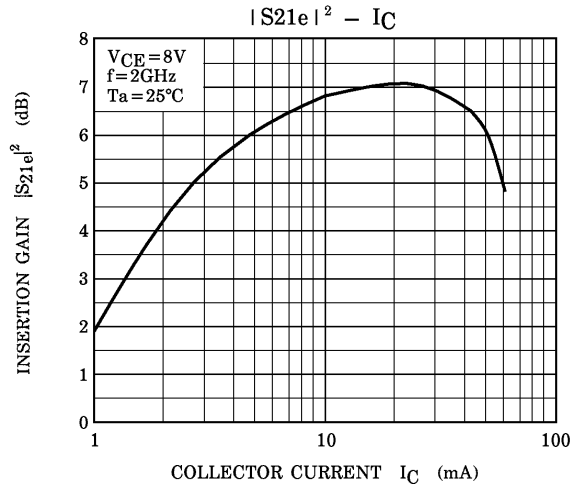
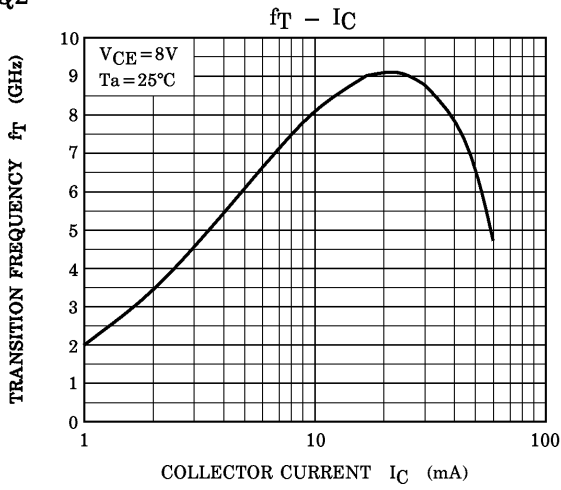
ELECTRICAL CHARACTERISTICS Q2 (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10V, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1V, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 8V, I_C = 20mA$	50	—	160	—
Transition Frequency	f_T	$V_{CE} = 8V, I_C = 20mA$	7	10	—	GHz
Insertion Gain	$ S_{21e} ^2 (1)$	$V_{CE} = 8V, I_C = 20mA,$ $f = 1000MHz$	—	13.5	—	dB
	$ S_{21e} ^2 (2)$	$V_{CE} = 8V, I_C = 20mA,$ $f = 2000MHz$	4.5	7	—	dB
Noise Figure	NF (1)	$V_{CE} = 8V, I_C = 5mA, f = 1000MHz$	—	1.1	—	dB
	NF (2)	$V_{CE} = 8V, I_C = 5mA, f = 2000MHz$	—	1.7	3	dB

Q1



Q2



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