

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN9C01FE

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

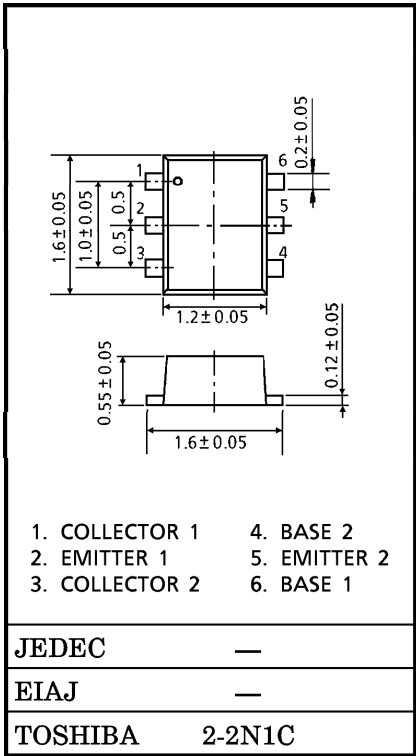
- Two devices are built in to the super-thin and extreme super mini (6pins) package : ES6

MOUNTED DEVICES

	Q1	Q2
Three-pins (SSM) mold products are corresponded	2SC5096	2SC5086

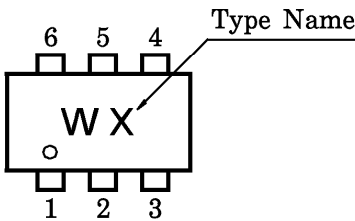
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	Q1	Q2	UNIT
Collector-Base Voltage	V _{CBO}	20		V
Collector-Emitter Voltage	V _{CEO}	8	12	V
Emitter-Base Voltage	V _{EBO}	1.5	3	V
Collector Current	I _C	15	80	mA
Base Current	I _B	7	40	mA
Collector Power Dissipation	P _C (Note 1)	100		mW
Junction Temperature	T _j	125		°C
Storage Temperature Range	T _{stg}	- 55~125		°C

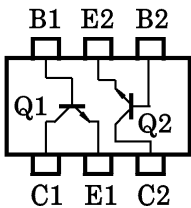


(Note 1) : Total power dissipation of Q1 and Q2.

MARKING



PIN ASSIGNMENT (TOP VIEW)



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ELECTRICAL CHARACTERISTICS Q1 (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 6\text{ V}, I_C = 7\text{ mA}$	50	—	160	—
Transition Frequency	f_T	$V_{CE} = 6\text{ V}, I_C = 7\text{ mA}$	7	10	—	GHz
Insertion Gain	$ S_{21e} ^2$ (2)	$V_{CE} = 6\text{ V}, I_C = 7\text{ mA},$ $f = 2000\text{ MHz}$	4.5	7	—	dB
Noise Figure	NF (2)	$V_{CE} = 6\text{ V}, I_C = 3\text{ mA},$ $f = 2000\text{ MHz}$	—	1.8	3	dB

ELECTRICAL CHARACTERISTICS Q2 (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}$	80	—	240	—
Transition Frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}$	5	7	—	GHz
Insertion Gain	$ S_{21e} ^2$ (2)	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA},$ $f = 1000\text{ MHz}$	8	11	—	dB
Noise Figure	NF (2)	$V_{CE} = 10\text{ V}, I_C = 5\text{ mA},$ $f = 1000\text{ MHz}$	—	1.1	2	dB