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

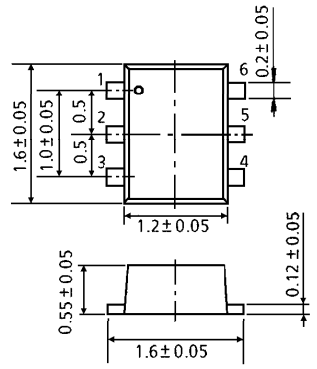
MOUNTED DEVICES

	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.

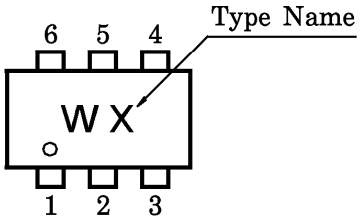


1. COLLECTOR 1
2. EMITTER 1
3. COLLECTOR 2
4. BASE 2
5. EMITTER 2
6. BASE 1

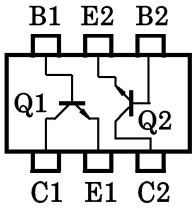
JEDEC	—
EIAJ	—
TOSHIBA	2-2N1C

Weight : 0.003g

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 V, I_E = 0	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 1 V, I_C = 0	—	—	1	μA
DC Current Gain	h_{FE}	V_{CE} = 6 V, I_C = 7 mA	50	—	160	—
Transition Frequency	f_T	V_{CE} = 6 V, I_C = 7 mA	7	10	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (2)	V_{CE} = 6 V, I_C = 7 mA, f = 2000 MHz	4.5	7	—	dB
Noise Figure	NF (2)	V_{CE} = 6 V, I_C = 3 mA, f = 2000 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 V, I_E = 0	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 1 V, I_C = 0	—	—	1	μA
DC Current Gain	h_{FE}	V_{CE} = 10 V, I_C = 20 mA	80	—	240	—
Transition Frequency	f_T	V_{CE} = 10 V, I_C = 20 mA	5	7	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (2)	V_{CE} = 10 V, I_C = 20 mA, f = 1000 MHz	8	11	—	dB
Noise Figure	NF (2)	V_{CE} = 10V, I_C = 5 mA, f = 1000 MHz	—	1.1	2	dB