TENTATIVE TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN9C12FT

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

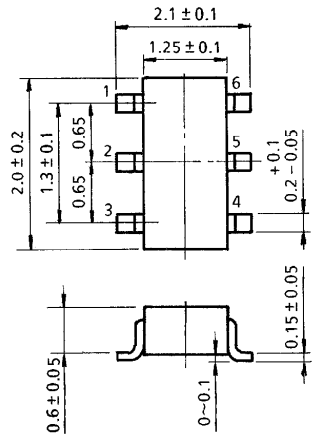
- TWO devices are built in to the super-thin and ultra super mini (6pins) package : TU6

MOUNTED DEVICES

	Q1	Q2
Three-pins (SSM) mold products are corresponded.	2SC5108	2SC5066

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	Q1	Q2	UNIT
Collector-Base Voltage	V_{CBO}	20	20	V
Collector-Emitter Voltage	V_{CEO}	10	12	V
Emitter-Base Voltage	V_{EBO}	3	3	V
Collector Current	I_C	30	30	mA
Base Current	I_B	15	15	mA
Collector Power Dissipation	P_C	200		mW
Junction Temperature	T_j	125		°C
Storage Temperature Range	T_{stg}	−55~125		°C

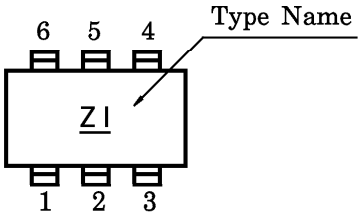


1. COLLECTOR 1
2. EMITTER 1
3. COLLECTOR 2
4. BASE 2
5. EMITTER 2
6. BASE 1

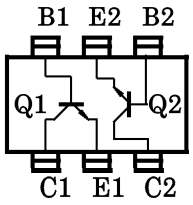
JEDEC	—
EIAJ	—
TOSHIBA	—

Weight : 0.008g

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} = 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 = 5mA	80	—	240	—
Transition Frequency	f_T	V_{CE} = 5V, I_C = 5mA	4	6	—	GHz
Insertion Gain	$\|S_{21e}\|^2$	V_{CE} = 5V, I_C = 5mA, f = 1000MHz	7	10	—	dB
Output Capacitance	C_{ob}	V_{CE} = 5V, I_E = 0, f = 1MHz	—	0.7	—	pF
Reverse Transfer Capacitance	C_{re}		—	0.5	0.9	pF

ELECTRICAL CHARACTERISTICS Q2 (Ta = 25°C)

CHARACTERISTIC			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 = 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