TENTATIVE TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

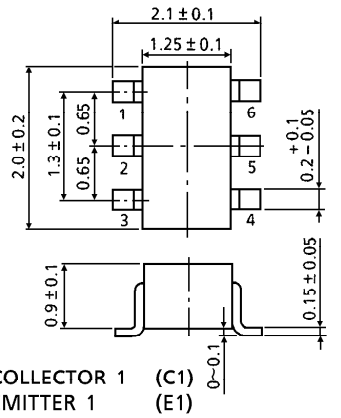
HN3C17FU

VHF~UHF LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

(CHIP : f_T = 16GHz series)

- Low Noise Figure : NF = 1.3dB (f = 2GHz)
- High Gain : $|S_{21e}|^2$ = 9.0dB (f = 2GHz)



1. COLLECTOR 1 (C1)
2. EMITTER 1 (E1)
3. COLLECTOR 2 (C2)
4. EMITTER 2 (E2)
5. BASE 2 (B2)
6. BASE 1 (B1)

JEDEC	—
EIAJ	—
TOSHIBA	2-2J1A

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	8	V
Collector-Emitter Voltage	V_{CEO}	5	V
Emitter-Base Voltage	V_{EBO}	1.5	V
Collector Current	I_C	20	mA
Base Current	I_B	10	mA
Collector Power Dissipation	P_C*	200	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

* : Total

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

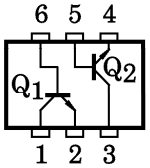
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 10V, I_E = 0	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 1V, I_C = 0	—	—	1	μA
DC Current Gain	h_{FE}	V_{CE} = 3V, I_C = 15mA	50	—	250	—
Transition Frequency	f_T	V_{CE} = 3V, I_C = 15mA,	9	—	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (1)	V_{CE} = 3V, I_C = 15mA, f = 1GHz	12	15	—	dB
Insertion Gain	$\|S_{21e}\|^2$ (2)	V_{CE} = 3V, I_C = 15mA, f = 2GHz	6	9.0	—	dB
Noise Figure	NF	V_{CE} = 3V, I_C = 5mA, f = 2GHz	—	1.3	2.2	dB
Reverse Transfer Capacitance Q_1	C_{re} (1)	V_{CB} = 2.5V, I_E = 0	—	0.45	0.9	pF
Reverse Transfer Capacitance Q_2	C_{re} (2)	f = 1MHz (Note)	—	0.4	0.85	pF

(Note) C_{re} is measured by 3 terminal method with Capacitance Bridge.

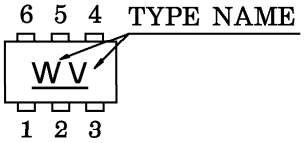
CAUTION

This device electrostatic sensitivity. Please handle with caution.

PIN ASSIGNMENT (TOP VIEW)



MARKING



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