Unit in mm

TENTATIVE

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN3C17FU

VHF~UHF LOW NOISE AMPLIFIER APPLICATIONS

(CHIP: fT=16GHz series)

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

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	$v_{\rm EBO}$	1.5	V
Collector Current	$I_{\mathbf{C}}$	20	mA
Base Current	I _B	10	mA
Collector Power Dissipation	PC*	200	mW
Junction Temperature	Tj	125	$^{\circ}\mathrm{C}$
Storage Temperature Range	$\mathrm{T_{stg}}$	-55~125	°C

*: Total

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

	2.0±0.2 1.3±0.1 2.0±0.2 5.0 0 5.0 1.3±0.1 3.0 0 5.0 3.0	2.1±0.1 1.25±0.1 6 1.00 5 0.00 4 1.25±0.1
	0.9±0.1	0.15±0.05
1. 2.	COLLECTOR 1 EMITTER 1	(C1) 6 (E1)
2. 3.	COLLECTOR 2	(C2)
4.	EMITTER 2	(E2)
5.	BASE 2	(B2)
6.	BASE 1	(B1)

2-2J1A

JEDEC

EIAJ TOSHIBA

CHARACTERISTIC	SYMBOL	TEST CONDITION	ON	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB} = 10V, I_{E} = 0$		_	_	1	μ A
Emitter Cut-off Current	$I_{ m EBO}$	$V_{EB}=1V, I_{C}=0$		_	_	1	μ A
DC Current Gain	${ m h_{FE}}$	$V_{\text{CE}} = 3V, I_{\text{C}} = 15\text{mA}$		50	_	250	_
Transition Frequency	${ m fT}$	$V_{\text{CE}} = 3V, I_{\text{C}} = 15\text{mA}$	•	9	_	<u> </u>	GHz
Insertion Gain	$ S_{21e} ^2(1)$	$egin{array}{l} V_{ ext{CE}} = 3 ext{V, I}_{ ext{C}} = 15 ext{mA} \ f = 1 ext{GHz} \end{array}$,	12	15	_	dB
Insertion Gain	$ S_{21e} ^2$ (2)	V_{CE} =3V, I_{C} =15mA f=2GHz	,	6	9.0	_	dB
Noise Figure	NF	$V_{\text{CE}} = 3V$, $I_{\text{C}} = 5\text{mA}$, $f = 2\text{GHz}$		_	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 Q2	C _{re} (2)	f=1MHz	(Note)	_	0.4	0.85	pF

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

MARKING

This device electrostatic sensitivity. Please handle with caution.

PIN ASSIGNMENT (TOP VIEW)

5 4 TYPE NAME 1 2 3

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