

TENTATIVE TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# HN3C17F

VHF~UHF LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

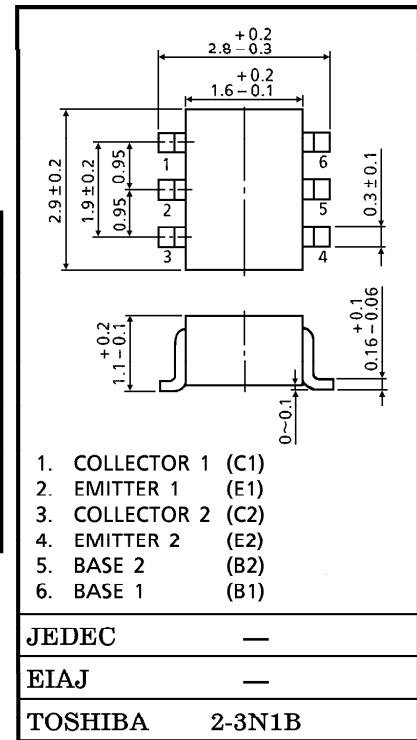
(CHIP :  $f_T=16\text{GHz}$  series)

- Including Two Devices in SM6 (Super Mini Type with 6 Leads)

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

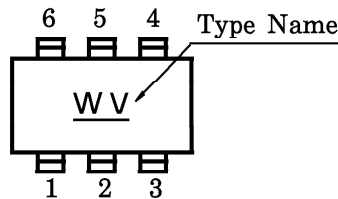
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	8	V
Collector-Emitter Voltage	$V_{CEO}$	5	V
Emitter-Base Voltage	$V_{EBO}$	1.5	V
Collector Current	$I_C$	20	mA
Base Current	$I_B$	10	mA
Collector Power Dissipation	$PC^*$	300	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55~125	$^\circ\text{C}$

\* : Total

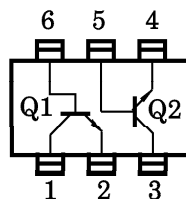


1. COLLECTOR 1 (C1)
2. EMITTER 1 (E1)
3. COLLECTOR 2 (C2)
4. EMITTER 2 (E2)
5. BASE 2 (B2)
6. BASE 1 (B1)

MARKING



PIN ASSIGNMENT (TOP VIEW)



ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 10\text{V}, I_E = 0$	—	—	1	$\mu\text{A}$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB} = 1\text{V}, I_C = 0$	—	—	1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 3\text{V}, I_C = 15\text{mA}$	50	—	250	—
Transition Frequency	$f_T$	$V_{CE} = 3\text{V}, I_C = 15\text{mA}$ ,	9	—	—	GHz
Insertion Gain	$ S_{21e} ^2 (1)$	$V_{CE} = 3\text{V}, I_C = 15\text{mA}$ , $f = 1\text{GHz}$	12	15	—	dB
Insertion Gain	$ S_{21e} ^2 (2)$	$V_{CE} = 3\text{V}, I_C = 15\text{mA}$ , $f = 2\text{GHz}$	6	9.0	—	dB
Noise Figure	NF	$V_{CE} = 3\text{V}, I_C = 5\text{mA}$ , $f = 2\text{GHz}$	—	1.3	2.2	dB
Reverse Transfer Capacitance Q1	$C_{re} (1)$	$V_{CB} = 2.5\text{V}, I_E = 0$	—	0.45	0.9	pF
Reverse Transfer Capacitance Q2	$C_{re} (2)$	$f = 1\text{MHz}$ (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.

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