

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

# HN3C12F

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

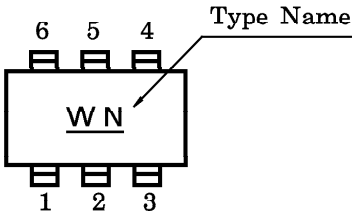
- Including Two Devices in SM6 (Super Mini Type with 6 Leads)

MAXIMUM RATINGS (Ta = 25°C)

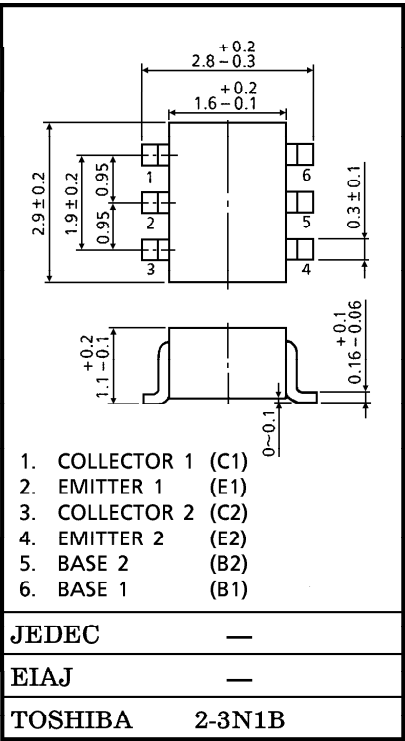
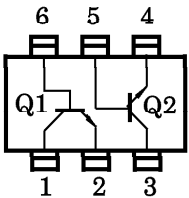
CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	20	V
Collector-Emitter Voltage	$V_{CEO}$	10	V
Emitter-Base Voltage	$V_{EBO}$	1.5	V
Base Current	$I_B$	7	mA
Collector Current	$I_C$	15	mA
Collector Power Dissipation	$P_{C^*}$	300	mW
Junction Temperature	$T_j$	125	°C
Storage Temperature Range	$T_{stg}$	-55~125	°C

\* : Total

MARKING



PIN ASSIGNMENT (TOP VIEW)



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	$\mu A$
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=1V, I_C=0$	—	—	1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=6V, I_C=7mA$	50	—	160	—
Transition Frequency	$f_T$	$V_{CE}=6V, I_C=7mA$	7	10	—	GHz
Insertion Gain	$ S_{21e} ^2$	$V_{CE}=6V, I_C=7mA, f=2GHz$	4	7	—	dB
Noise Figure	NF	$V_{CE}=6V, I_C=3mA, f=2GHz$	—	1.8	3	dB
Reverse Transfer Capacitance Q1	$C_{re}$	$V_{CB}=10V, I_E=0, f=1MHz$ (Note)	—	0.4	0.9	pF
Reverse Transfer Capacitance Q2	$C_{re}$		—	0.35	0.85	pF

(Note)  $C_{re}$  is measured by 3 terminal method capacitance bridge.

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