TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

HN3C11F

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

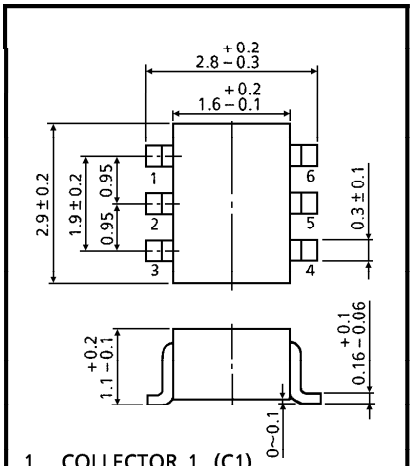
Unit in mm

- 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
Collector Current	I_C	40	mA
Base Current	I_B	20	mA
Collector Power Dissipation	P_C*	200	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

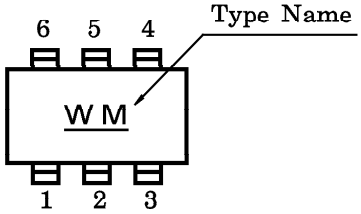
* : Total



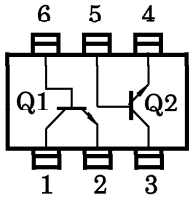
1. COLLECTOR 1 (C1)
2. EMITTER 1 (E1)
3. COLLECTOR 2 (C2)
4. EMITTER 2 (E2)
5. BASE 2 (B2)
6. BASE 1 (B1)

JEDEC	—
EIAJ	—
TOSHIBA	2-3N1B

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	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=1V, I_C=0	—	—	1	μA
DC Current Gain	h_{FE}	V_{CE}=8V, I_C=20mA	50	—	160	—
Transition Frequency	f_T	V_{CE}=8V, I_C=20mA	7	10	—	GHz
Insertion Gain	$\|S_{21e}\|^2$	V_{CE}=8V, I_C=20mA, f=2GHz	3.5	7	—	dB
Noise Figure	NF	V_{CE}=8V, I_C=5mA, f=2GHz	—	1.7	3	dB
Reverse Transfer Capacitance Q1	C_{re}	V_{CB}=10V, I_E=0, f=1MHz (Note)	—	0.7	1.2	pF
Reverse Transfer Capacitance Q2	C_{re}		—	0.65	1.15	pF

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

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