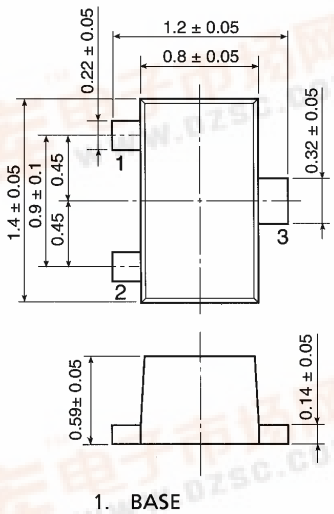
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC5096FT

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

- Low Noise Figure, High Gain.
- NF = 1.8dB, $|S_{21e}|^2$ = 7.5dB (f = 2GHz)

Unit in mm



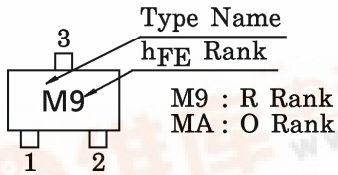
1. BASE
2. EMITTER
3. COLLECTOR

TESM	
JEDEC	—
EIAJ	—
TOSHIBA	2-1B1A

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	8	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	100	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

MARKING



MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f_T	V_{CE} = 6V, I_C = 7mA	7	10	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (1)	V_{CE} = 6V, I_C = 7mA, f = 1GHz	—	13	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = 6V, I_C = 7mA, f = 2GHz	4.5	7.5	—	
Noise Figure	NF (1)	V_{CE} = 6V, I_C = 3mA, f = 1GHz	—	1.4	—	dB
	NF (2)	V_{CE} = 6V, I_C = 3mA, f = 2GHz	—	1.8	3.0	

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} (Note 1)	V_{CE} = 6V, I_C = 7mA	50	—	160	—
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	0.5	—	pF
Reverse Transfer Capacitance	C_{re}	(Note 2)	—	0.4	0.85	pF

(Note 1) : h_{FE} Classification R : 50~100, O : 80~160

(Note 2) : C_{re} is measured by 3 terminal method with capacitance bridge.

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