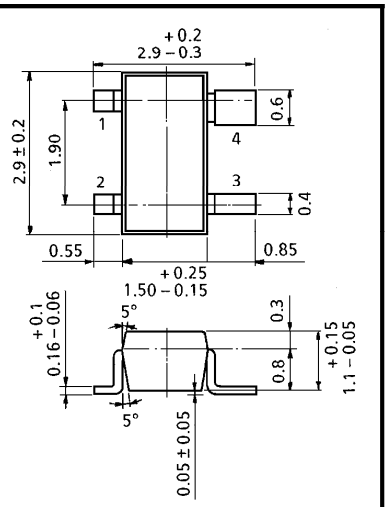
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC5257

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise Figure : NF = 1.5dB (f = 2GHz)
- High Gain : Gain = 10dB (f = 2GHz)



1. 3. EMITTER
2. BASE
4. COLLECTOR

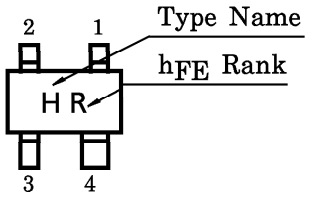
JEDEC	—
JEITA	—
TOSHIBA	2-3J1C

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	15	V
Collector-Emitter Voltage	V_{CEO}	7	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	150	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} = 5V, I_C = 20mA	9	12	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (1)	V_{CE} = 5V, I_C = 20mA, f = 1GHz	13	16	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = 5V, I_C = 20mA, f = 2GHz	7	10	—	
Noise Figure	NF (1)	V_{CE} = 5V, I_C = 5mA, f = 1GHz	—	1.1		dB
	NF (2)	V_{CE} = 5V, I_C = 5mA, f = 2GHz	—	1.5	3	

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} = 5V, I_C = 20mA	50	—	160	—
Output Capacitance	C_{ob}	V_{CB} = 5V, I_E = 0, f = 1MHz (Note 2)	—	0.6	—	pF
Reverse Transfer Capacitance	C_{re}		—	0.45	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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