

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC5257

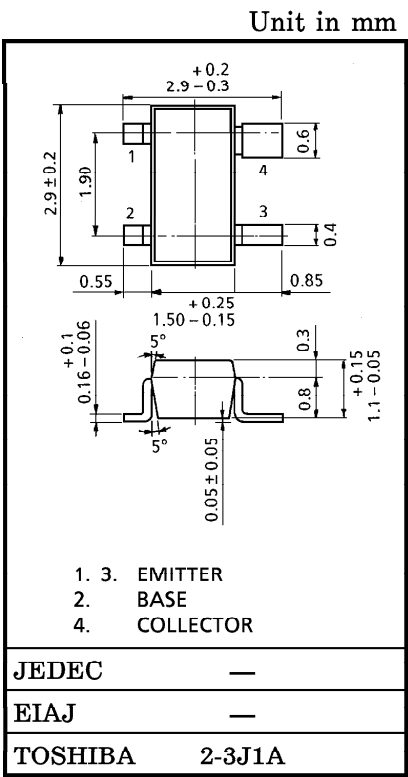
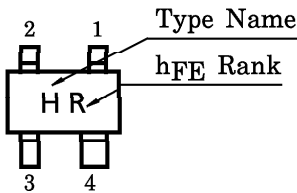
VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

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

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	128	°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	

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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.