

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC5087R

VHF~UHF Band Low Noise Amplifier Applications

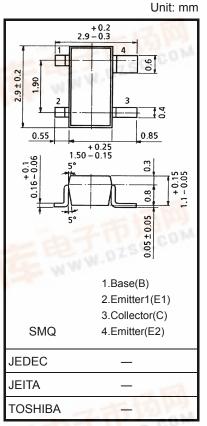
- Low noise figure, high gain.
- NF = 1.1dB, $|S_{21e}|^2$ = 13dB (f = 1 GHz)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	20	V
Collector-emitter voltage	V _{CEO}	12	V
Emitter-base voltage	V _{EBO}	3	V
Base current	ΙΒ	40	mA
Collector current	IC	80	mA
Collector power dissipation	PC	150	mW
Junction temperature	Tj	125	°C
Storage temperature range	T _{stg}	−55~125	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



Weight: 0.012 g (typ.)

Microwave Characteristics (Ta = 25°C)

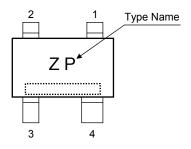
Characteristic	Symbol	Condition	Min	Тур.	Max	Unit
Transition frequency	f _T	V _{CE} = 10 V, I _C = 30 mA	6	8	_	GHz
Insertion gain	S _{21e} ² (1)	V _{CE} = 5 V, I _C = 20 mA, f = 1 GHz	_	12.5	F-17) PP
	S _{21e} ² (2)	V _{CE} = 10 V, I _C = 30 mA, f = 1 GHz	11	13.5	750	dB
Noise figure	NF	V _{CE} = 10 V, I _C = 7 mA, f = 1 GHz	- W	1.1	2	

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = 10 V, I _E = 0	_	_	1	μА
Emitter cut-off current	I _{EBO}	V _{EB} = 1 V, I _C = 0	_	_	1	μА
DC current gain	h _{FE}	V _{CE} = 10 V, I _C = 20 mA	120	_	240	_
Output capacitance	C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz(Note 2)	_	1.1	1.6	pF
Reverse transfer capacitance	C _{re}		_	0.65	1	pF

Cre is measured with a three-terminal method using a capacitance bridge.

Marking



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20070701-EN GENERAL

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