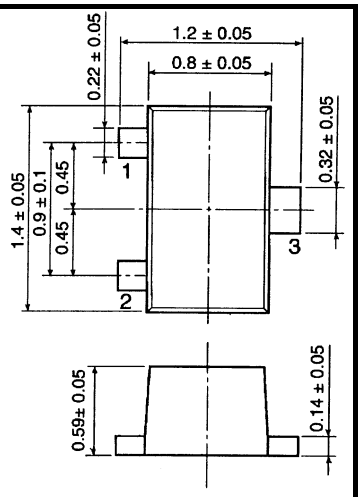
TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC5066FT

VHF~UHF Band Low Noise Amplifier Applications

- Low noise figure, high gain.
- NF = 1.1dB, $|S_{21e}|^2$ = 12dB (f = 1 GHz)

Unit: mm



1. BASE
2. EMITTER
3. COLLECTOR

TESM

JEDEC	—
JEITA	—
TOSHIBA	2-1B1A

Weight: 0.0022 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	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	I_B	15	mA
Collector current	I_C	30	mA
Collector power dissipation	P_C	100	mW
Junction temperature	T_j	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).

Microwave Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Transition frequency	f_T	V_{CE} = 5 V, I_C = 10 mA	5	7	—	GHz
Insertion gain	$\|S_{21e}\|^2$ (1)	V_{CE} = 5 V, I_C = 10 mA, f = 500 MHz	—	17	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = 5 V, I_C = 10 mA, f = 1 GHz	8.5	12	—	
Noise figure	NF (1)	V_{CE} = 5 V, I_C = 3 mA, f = 500 MHz	—	1	—	dB
	NF (2)	V_{CE} = 5 V, I_C = 3 mA, f = 1 GHz	—	1.1	2.0	

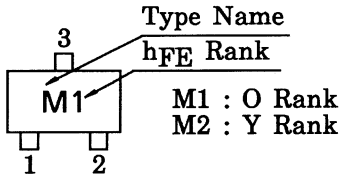
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = 10 V, I_E = 0	—	—	1	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 1 V, I_C = 0	—	—	1	μA
DC current gain	h_{FE} (Note 1)	V_{CE} = 5 V, I_C = 10 mA	80	—	240	
Output capacitance	C_{ob}	V_{CB} = 5 V, I_E = 0, f = 1 MHz (Note 2)	—	0.7	—	pF
Reverse transfer capacitance	C_{re}		—	0.45	0.9	pF

Note 1: h_{FE} classification O: 80~160, Y: 120~240

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

Marking



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