Unit: mm

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

RFM04U6P

VHF- and UHF-band Amplifier Applications

(Note)The TOSHIBA products listed in this document are intended for high frequency Power Amplifier of telecommunications equipment. These TOSHIBA products are neither intended nor warranted for any other use.Do not use these TOSHIBA products listed in this document except for high frequency Power Amplifier of telecommunications equipment.

Output power: PO = 4.3W (typ)

Gain: GP = 13.3dB (typ)

Drain efficiency: $\eta D = 70\%$ (typ)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit	
Drain-source voltage	V _{DSS}	16	٧	
Gain-source voltage	V_{GSS}	3	٧	
Drain current	ID	2	Α	
Power dissipation	P _D (Note 1)	7	W	
Channel temperature	T _{ch}	150	°C	
Storage temperature range	T _{stg}	-45 to 150	°C	

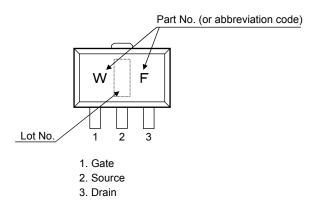
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the

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).

Note 1: Tc = 25°C (When mounted on a 0.4 mm glass epoxy PCB with heat sink)

Marking



Caution: This device is sensitive to electrostatic discharge.

Please make enough tool and equipment earthed when you handle.

4.6MAX 1.7MAX. 0.4 ± 0.05 1. GATE 2. SOURCE 3. DRAIN PW-Mini **JEDEC** JEITA

SC-62

2-5K1D

Weight: 0.05 g (typ.)

TOSHIBA

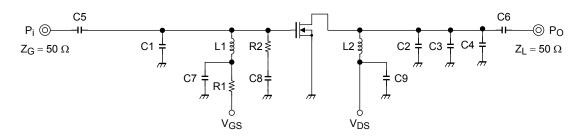
Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Drain cut-off current	I _{DSS}	V _{DS} = 10 V, V _{GS} = 0 V	_	_	10	μА
Gate-source leakage current	I _{GSS}	V _{GS} = 3 V	_	_	5	μА
Threshold voltage	V_{th}	$V_{DS} = 6.0 \text{ V}, I_D = 0.5 \text{mA}$	0.2	0.7	1.2	٧
Output power	PO	V _{DS} = 6.0 V, l _{idle} = 500 mA (V _{GS} = adjust), f = 470 MHz, P _i = 200 mW,	3.5	4.3	_	W
Drain efficiency	η_{D}		55	70	_	%
Power gain	G _P	$Z_G = Z_L = 50 \Omega$	12.4	13.3	_	dB
Load mismatch	_	$\begin{split} &V_{DS}=6.0 \text{ V}, \\ &P_O=4 \text{ W(P}_i=\text{adjust)}, \\ &I_{idle}=500 \text{ mA (V}_{GS}=\text{adjust)}, \\ &f=470 \text{ MHz}, \\ &V\text{SWR LOAD 20:1 all phase} \end{split}$	No degradation			

Note 2: These characteristic values are measured using measurement tools specified by Toshiba.

Output Power Test Fixture

(Test Condition: f = 470 MHz, $V_{DS} = 6.0$ V, $I_{idle} = 500$ mA, $P_i = 0.2$ W)



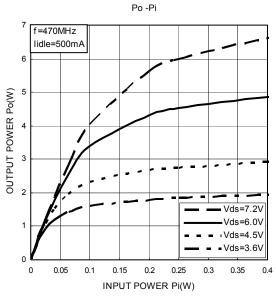
C1: 20 pF C2: 8 pF C3: 18 pF L1: φ0.6 mm enamel wire, 5.5ID, 5T

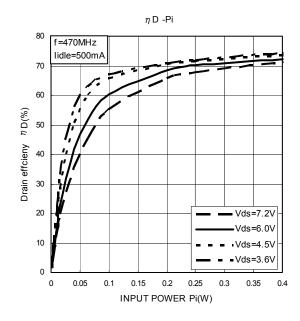
R1: 6.8 kΩ L2: φ0.6 mm enamel wire, 5.5ID, 7T R2: 56 Ω

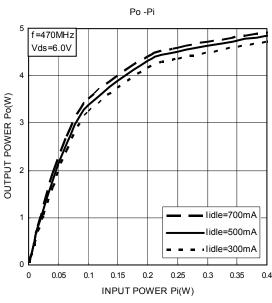
C4: 1 pF C5: 2200 pF

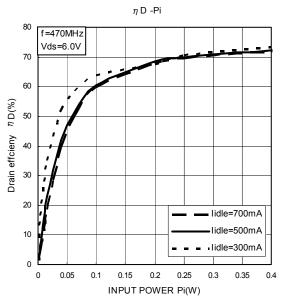
C6: 2200 pF

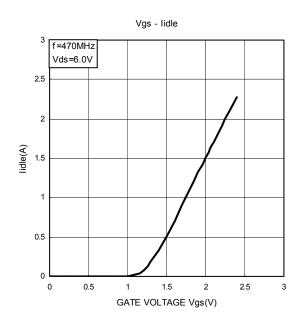
C7: 10000 pF C8: 2200 pF C9: 10000 pF Line: 2mm

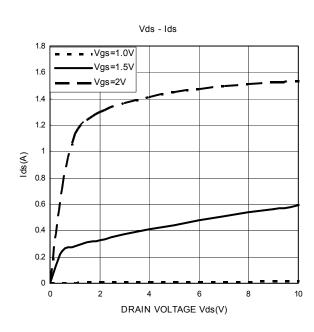




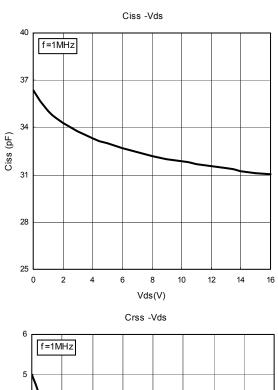


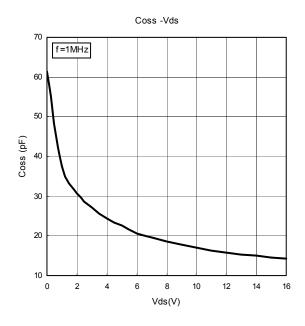


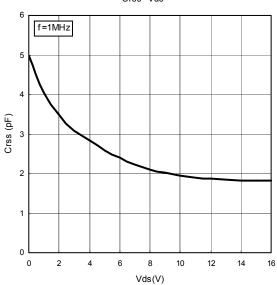




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Note 3: These are only typical curves and devices are not necessarily guaranteed at these curves.

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