

Description

The HTU7G06S004P is an unmatched discrete LDMOS Power Amplifier with 4W saturated output power covering frequency range for VHF/UHF applications.

Features

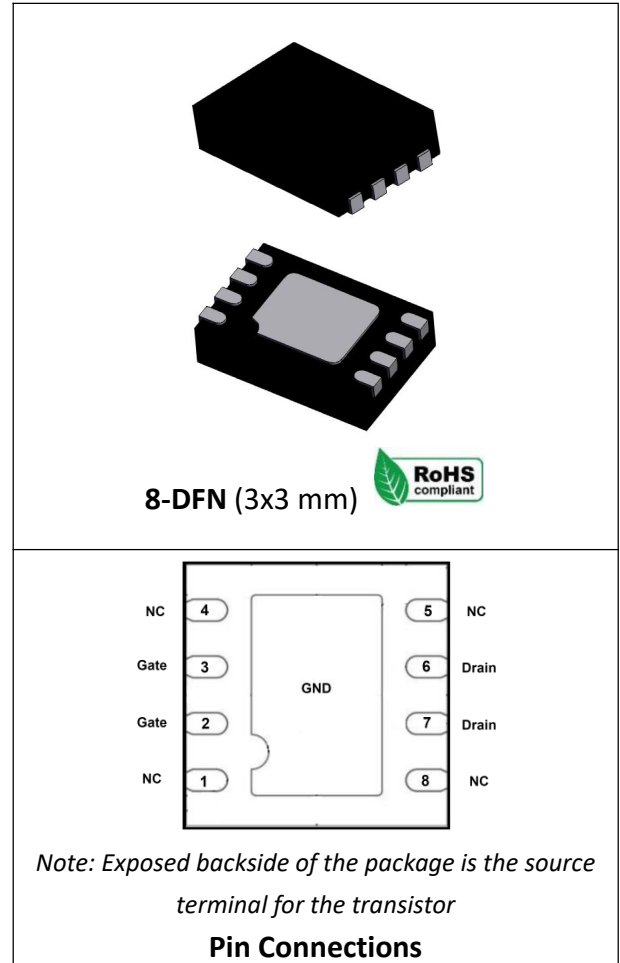
- Operating Frequency Range: VHF/UHF
- Operating Drain Voltage: +4V
- Saturation Output Power: 4W
- Excellent thermal stability due to low thermal resistance package
- Enhanced robustness design without device degradation
- Internally integrated enhanced ESD design

Freq (MHz)	Vdd (V)	Pin (W)	Pout (W)	Eff (%)
136-174	4	0.2	4.5	60
400-470	4	0.2	4.5	60

Test conditions unless otherwise noted: 25 °C,
VDD = +4Vdc, IDQ= 500mA, CW Signal

Applications

- VHF Band handheld Walkie-talkie
- UHF Band handheld Walkie-talkie
- 1.8-600 MHz other application Drivers or Final stage Amplifiers



Ordering Information

Part Number	Description
HTU7G06S004P	Reel Package
HTU7G06S004PEVB	400 - 470 MHz EVB
HTU7G06S004PEVB1	136 - 174 MHz EVB

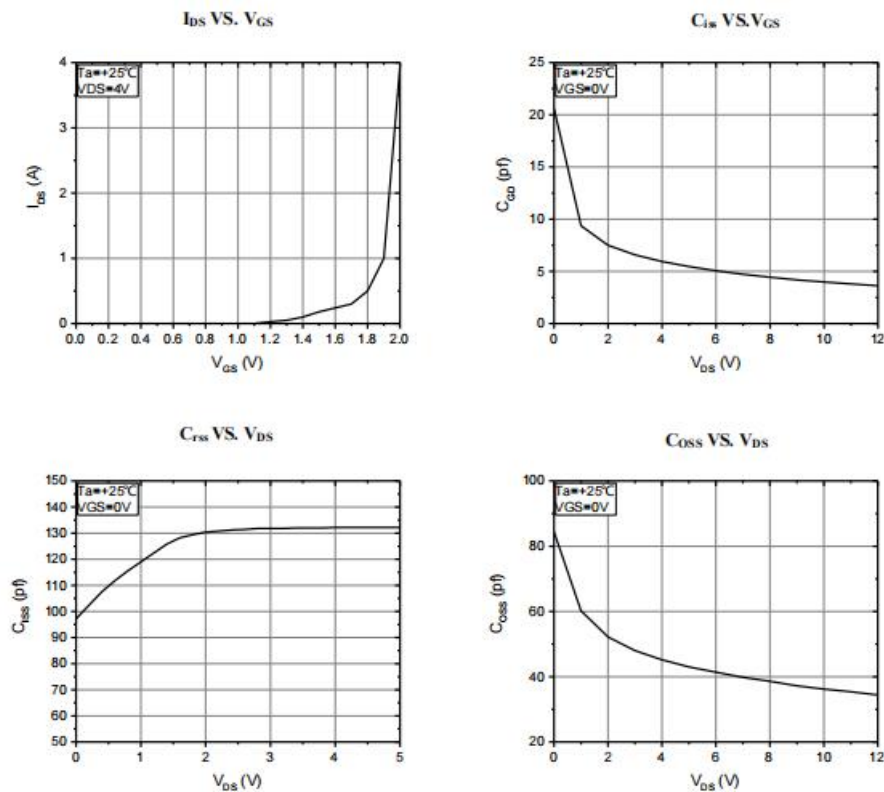
Absolute Maximum Ratings

Parameter	Range/Value	Unit
Drain voltage (V_{DSS})	-0.5 to +12	V
Gate voltage (V_{GS})	-5 to +10	V
Operation voltage (V_{DD})	+5	V
Storage Temperature (T_{STG})	-55 to +150	°C
Junction Temperature (T_J)	-40 to +150	°C
Thermal Resistance Junction to Case (R_{TH})	10	°C/W

Electrical Specification

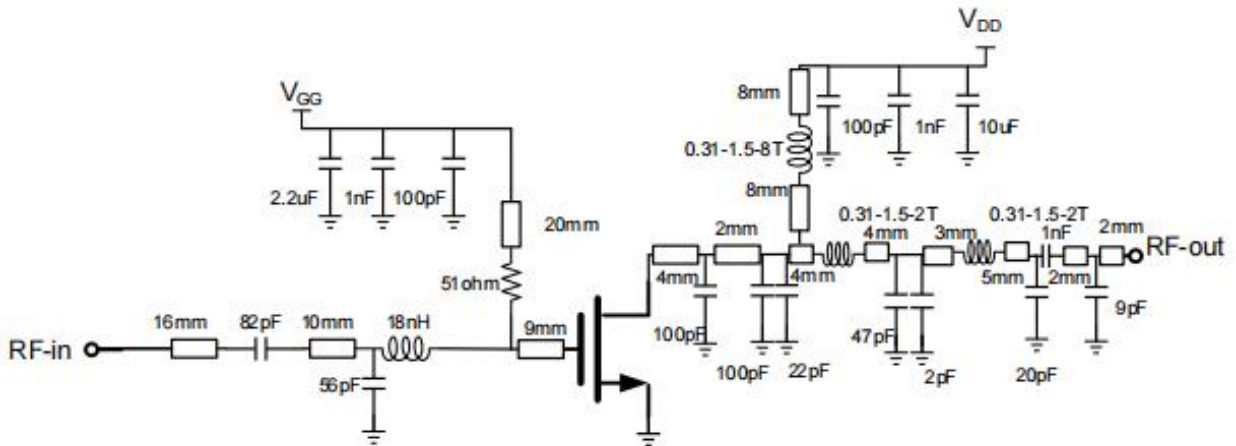
DC Characteristics

Parameter	Conditions	Min	Typ	Max	Unit
Breakdown Voltage $V_{(BR)DSS}$	$V_{gs}=0V, I_{ds}=80\mu A$	12	-	-	V
Gate-Source Threshold Voltage $V_{GS(th)}$	$V_{ds}=V_{gs}, I_{ds}=80\mu A$	0.6	0.9	1.2	V
Drain Leakage Current I_{DSS}	$V_{gs}=0V, V_{ds}=12V$	-	-	1	μA
Gate Leakage Current I_{GSS}	$V_{gs}=10V, V_{ds}=0V$	-	-	1	μA



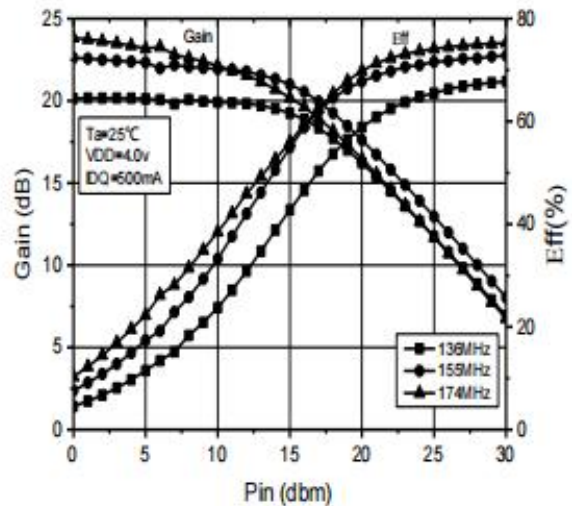
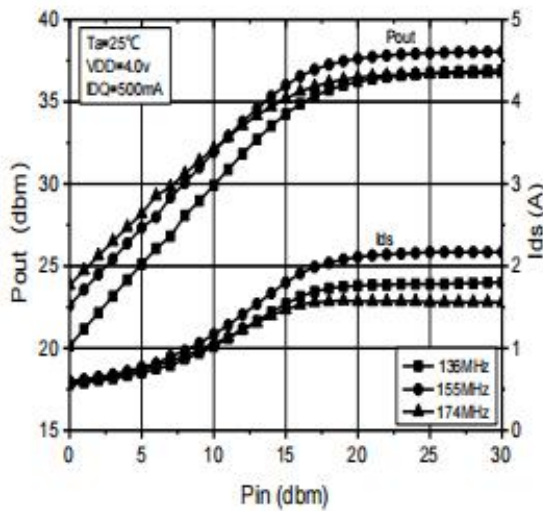
Test conditions unless otherwise noted: 25 °C, DC Characteristics

HTU7G06S004P 136- 174 MHz Reference Design (VHF)



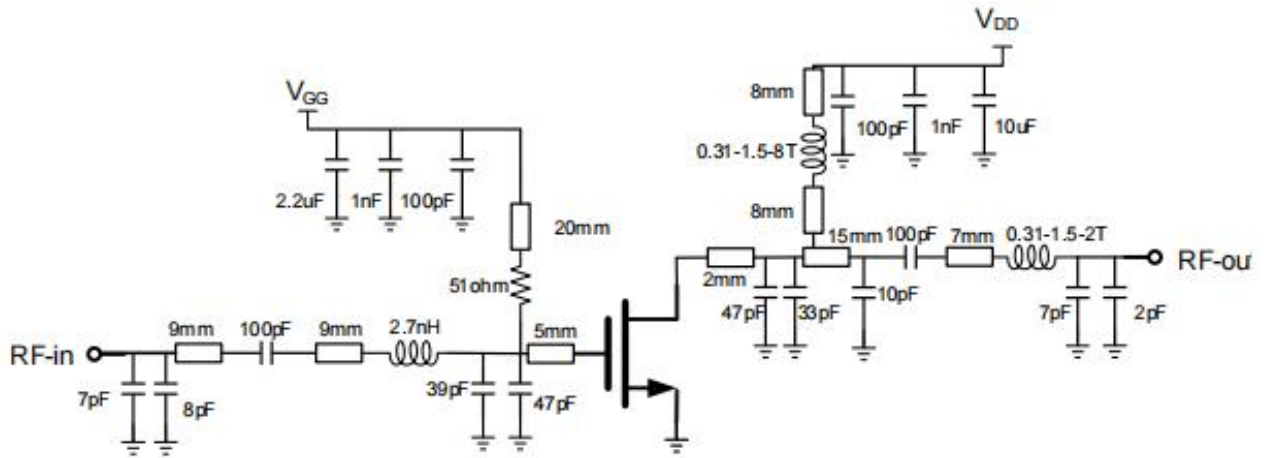
EVB Layout

Performance Plots 136- 174 MHz Reference Design (VHF)



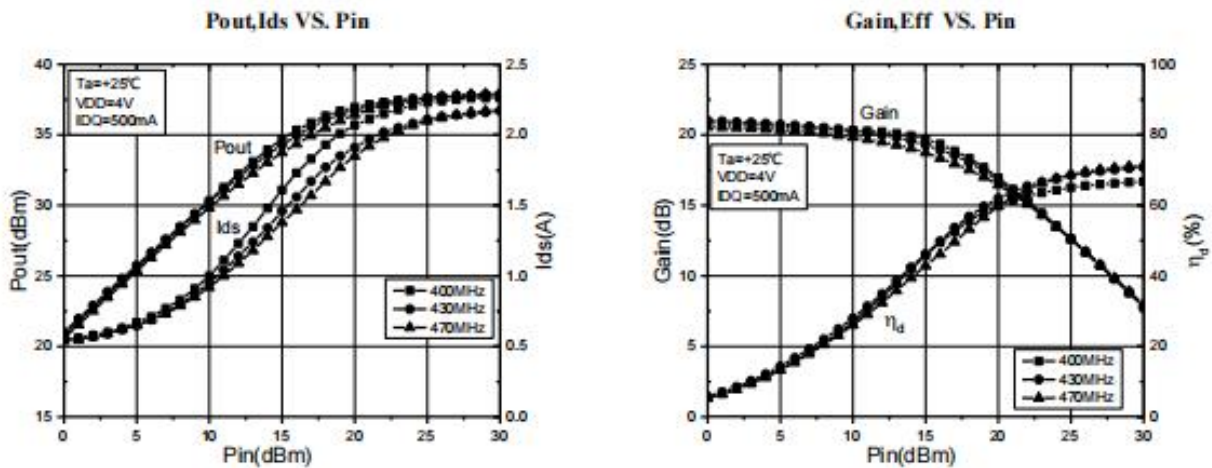
Test conditions unless otherwise noted: 25 °C, V_{DD} = +4Vdc, I_{DQ}=500mA, CW test on WATECH Application Board

HTU7G06S004P 400 - 470 MHz Reference Design (UHF)



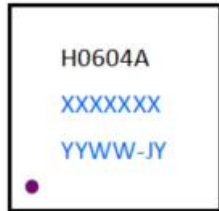
EVB Layout

Performance Plots 400 - 470 MHz Reference Design (UHF)



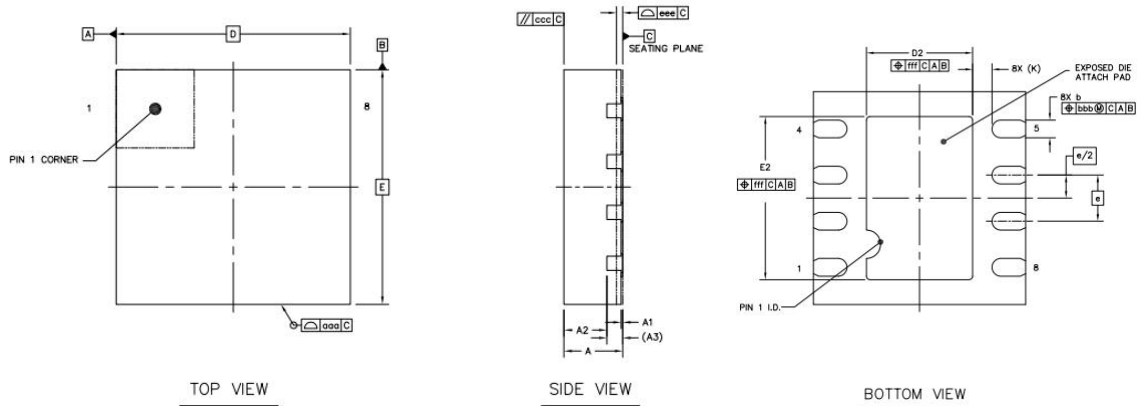
Test conditions unless otherwise noted: 25 °C, VDD = +4Vdc, IDQ=500mA, CW test on WATECH Application Board

Package Marking and Dimensions



- Line1 (fixed): fixed code H0604A
 - Line2 (unfixed): Take the last 7 digits of Marking Lot No in W/O
(Sample: E596-20140001, just take "20140001")
 - Line3 (unfixed): Date Code + JY
- This Marking SPEC only stipulates the content of Marking. For marking requirements such as font and size, please refer to the latest version of "Watech Product Printing Specification"

Marking

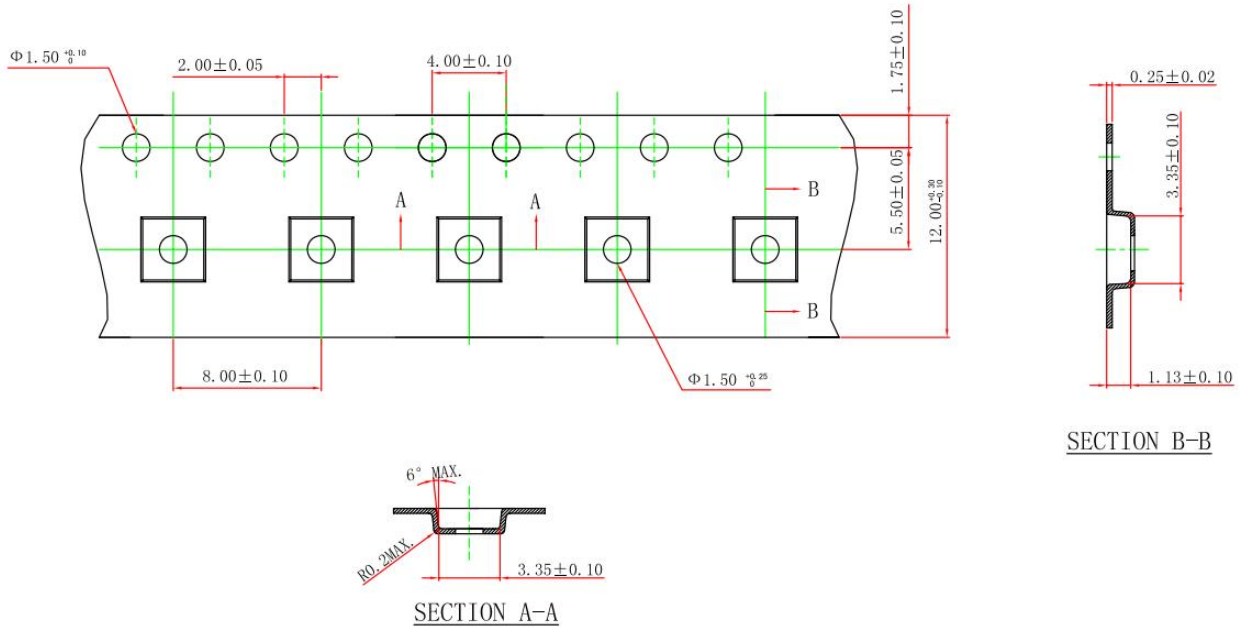


	SYMBOL	MIN	NOM	MAX	
TOTAL THICKNESS	A	0.7	0.75	0.8	
STAND OFF	A1	0	0.02	0.05	
MOLD THICKNESS	A2	---	0.55	---	
L/F THICKNESS	A3	0.203 REF			
LEAD WIDTH	b	0.2	0.25	0.3	
BODY SIZE	X	D	3 BSC		
	Y	E	3 BSC		
LEAD PITCH	e	0.65 BSC			
EP SIZE	X	D2	1.4	1.5	1.6
	Y	E2	2.2	2.3	2.4
LEAD LENGTH	L	0.375	0.475	0.575	
LEAD TIP TO EXPOSED PAD EDGE	K	0.275 REF			
PACKAGE EDGE TOLERANCE	aaa	0.1			
MOLD FLATNESS	ccc	0.1			
COPLANARITY	eee	0.08			
LEAD OFFSET	bbb	0.1			
EXPOSED PAD OFFSET	fff	0.1			

Package Dimensions

Tape and Reel Information

Package Type	Reel Size(inch)	Qty/Reel(pcs)	Qty/Box(pcs)	Qty/Carton(pcs)
QFN3*3	7inch	1000	8000	32000



Tape & Reel Packaging Descriptions

Handling Precautions

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	Class 1B	JESD22-A114
ESD – Human Body Model (MM)	Class A	EIA/JESD22-A115
ESD – Charged Device Model (CDM)	Class III	JESD22-C101

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE
DEVICES

RoHS Compliance

This product is compliant with the 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment), as amended by Directive 2015/863/EU.

Datasheet Status

Document status	Product status	Definition
Objective Datasheet	Design simulation	Product objective specification
Preliminary Datasheet	Customer sample	Engineering samples and first test results
Product Datasheet	Mass production	Final product specification

Abbreviations

Acronym	Definition
LDMOS	Laterally-Diffused Metal-Oxide Semiconductor
CW	Continuous Waveform

Revision history

Document ID	Datasheet Status	Release Date	Revision Version
Rev 1.1	Product	April 2020	TBD
Rev 1.2	Product	March 2023	New format based on English version datasheet
Rev 1.3	Product	March 2024	Version released after re review



HTU7G06S004P

4W, 1.8 - 600 MHz LDMOS Amplifier

Product datasheet

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations and information about WATECH:

- Web: www.watechelectronics.com
- Email: MKT@huatai-elec.com

For technical questions and application information:

- Email: MKT@huatai-elec.com

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