HTN8G36S015P
15W, 3300 - 3600 MHz LDMOS Amplifier

Product datasheet

Description

The HTN8G36S015P is an unmatched discrete LDMOS Power Amplifier with 40W saturated output power covering frequency range from 3300 - 3600 MHz.

Features

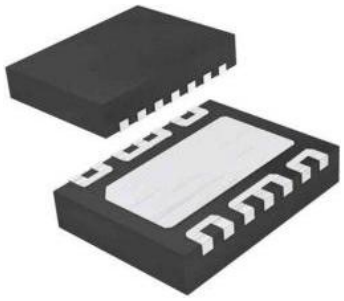
- Operating Frequency Range: 3300 - 3600 MHz
- Operating Drain Voltage: +28V
- Saturation Output Power: 15W
- Power Average: 1.0W
- Excellent thermal stability due to low thermal resistance package
- Enhanced robustness design without device degradation
- Efficiency: 13.1%@3450MHz, LTE
- Gain: 17.5dB@3450MHz, LTE

Applications

- mMIMO Driver stage
- Small Base station Final stage

Ordering Information

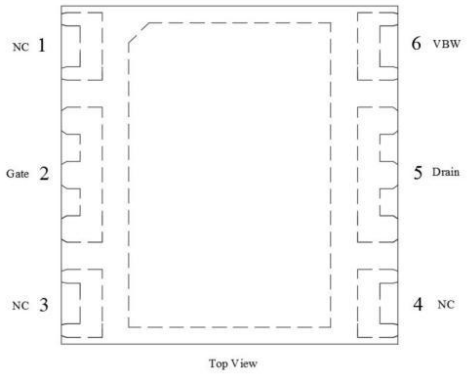
Part Number	Description
HTN8G36S015P	Reel Package
HTN8G36S015PEVB	xx - xx MHz EVB



DFN 5x5 mm RoHS compliant

Dual-Flat No-Lead plastic Package

HTN8G36S015P



Note: Exposed backside of the package is the source terminal for the transistor

Pin Connections

Typical Performance

RF Characteristics (LTE)

Freq (MHz)	Gain (dB)	Eff (%)	ACPR (dBc)*
3450	17.5	13.1	-47.4

Test conditions unless otherwise noted: 25 °C, VDD = +28Vdc, PAVG = 30 dBm (1W), FDD LTE 20MHz DL Signal, 9.6 dB PAR @ 0.01% CCDF test on WATECH Application Board

**Uncorrected DPD*

Absolute Maximum Ratings

Parameter	Range/Value	Unit
Drain voltage (V_{DSS})	-0.5 to +65	V
Gate voltage (V_{GS})	-6 to +10	V
Drain voltage (V_{DD})	0 to +32	V
Storage Temperature (T_{STG})	-65 to +150	°C
Junction Temperature (T_J)	-40 to +225	°C

Electrical Specification

DC Characteristics (Main)

Parameter	Conditions	Min	Typ	Max	Unit
Breakdown Voltage $V_{(BR)DSS}$	Vgs=0V, Ids=17uA	65	-	-	V
Gate-Source Threshold Voltage $V_{GS(th)}$	Vgs=Vds, Ids=17uA	-	1.5	-	V
Drain Leakage Current I_{DSS1}	Vgs=0V, Vds=65V	-	-	500	nA
Drain Leakage Current I_{DSS2}	Vgs=0V, Vds=28V	-	-	100	nA
Gate Leakage Current I_{GSS1}	Vgs=0V, Vds=10V	-	-	1	uA
Gate Leakage Current I_{GSS2}	Vgs=0V, Vds=-6V	-	-	200	uA

DC Characteristics

Parameter	Conditions	Min	Typ	Max	Unit
Breakdown Voltage $V_{(BR)DSS}$	Vgs=0V, Ids=17uA	65	-	-	V
Gate-Source Threshold Voltage $V_{GS(th)}$	Vds=10V, Ids=17uA	1.3	-	1.7	V
Drain Leakage Current I_{DSS1}	Vgs=0V, Vds=65V	-	-	500	nA
Drain Leakage Current I_{DSS2}	Vgs=0V, Vds=28V	-	-	100	nA
Gate Leakage Current I_{GSS1}	Vgs=5V, Vds=5V	-	-	10	nA
Gate Leakage Current I_{GSS2}	Vgs=10V, Vds=0V	-	-	500	nA

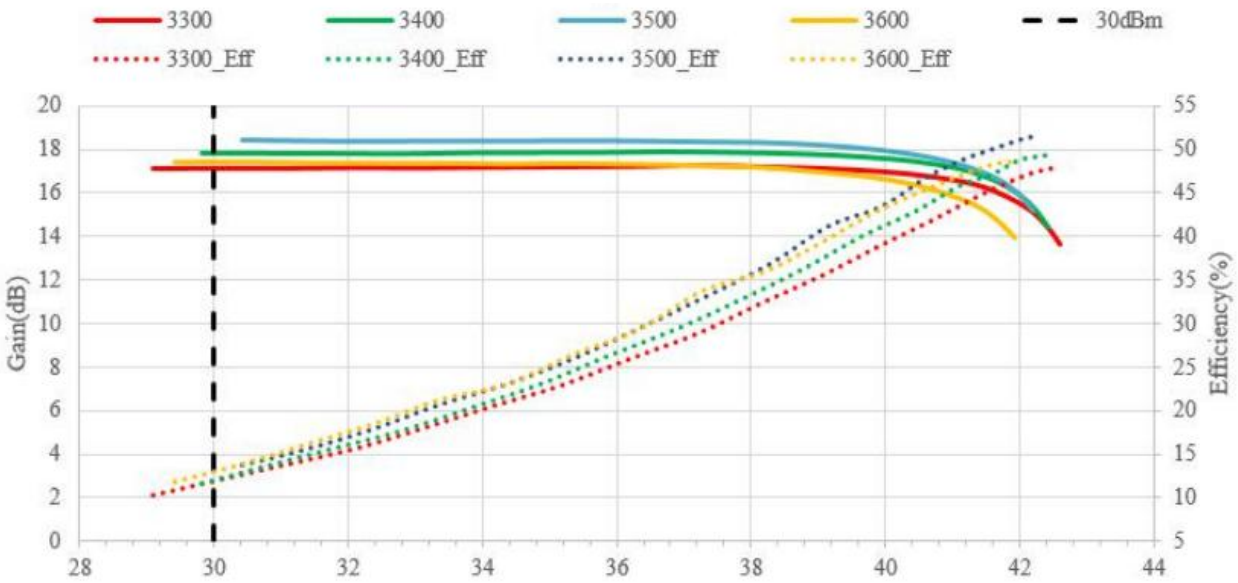
Load Mismatch Test

Condition	Test Result
VSWR=10:1, at all Phase Angles, VDD = +28Vdc, Pout = 30 dBm NR-100MHz @3450 MHz test on WATECH Application Board	No Device Degradation

Thermal Information

Parameter	Condition	Value (Typ)	Unit
Thermal Resistance Junction to Case (R_{TH})	T_{CASE}= 50°C, CW 15W	TBD	°C /W

Performance Plots 3300 - 3600 MHz Reference Design



Pulsed CW, Gain and Efficiency vs Pout

Freq (MHz)	Gain (dB)	P1dB (dBm)	Eff(%)@P1dB	P3dB (dBm)	Eff(%)@P3dB
3300	17.24	41.44	44.76	42.46	47.74
3400	17.89	41.32	46.36	42.32	49.19
3500	18.43	40.94	47.89	42.15	51.25
3600	17.44	40.31	44.34	41.75	48.35

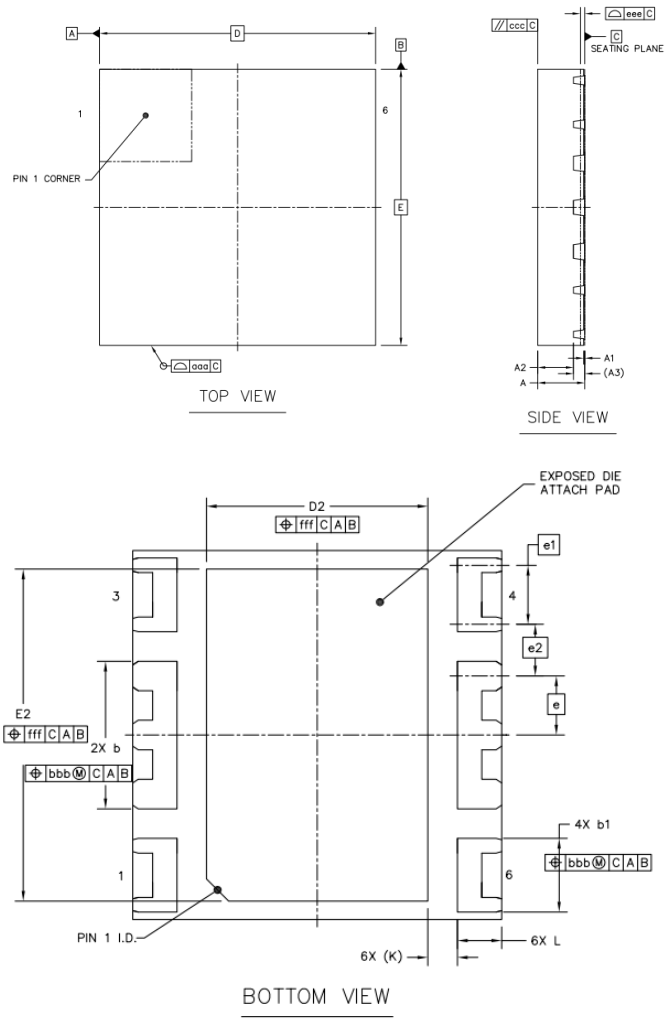
Test conditions unless otherwise noted: 25 °C, VDD = +28Vdc, IDQ= 180mA, PW = 1ms, DC= 10% test on WATECH Application Board

Package Marking and Dimensions

- Line1 (fixed): Device name in W/O
- Line2 (unfixed): Take the last 8 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

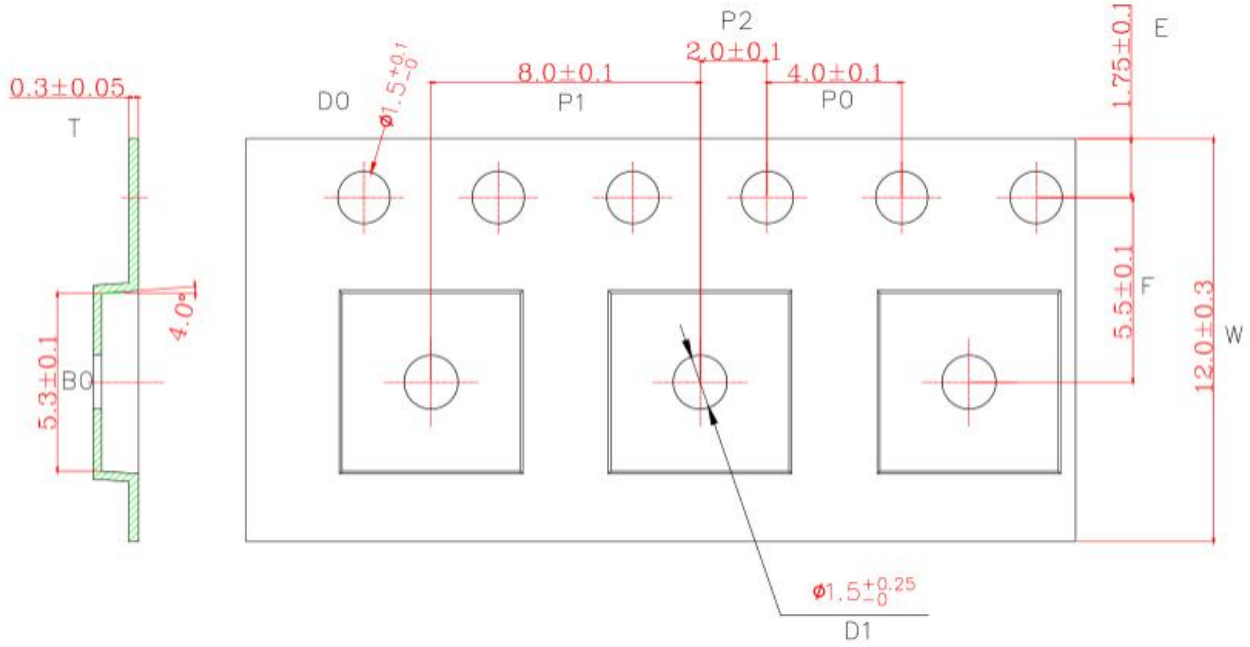


		SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS		A	0.8	0.85	0.9
STAND OFF		A1	0	0.02	0.05
MOLD THICKNESS		A2	---	0.65	---
L/F THICKNESS		A3		0.203 REF	
LEAD WIDTH		b	1.95	2	2.05
		b1	0.95	1	1.05
BODY SIZE	X	D		5 BSC	
	Y	E		5 BSC	
LEAD PITCH		e		0.8 BSC	
		e1		0.8 BSC	
		e2		0.7 BSC	
EP SIZE	X	D2	2.9	3	3.1
	Y	E2	4.4	4.5	4.6
LEAD LENGTH		L	0.5	0.6	0.7
LEAD TIP TO EXPOSED PAD EDGE		K		0.4 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)
DFN5*5	7inch	1000	8000	32000



Tape & Reel Packaging Descriptions

Handling Precautions

Parameter	Grade
Moisture Sensitivity Level MSL	3

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

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 2.1	Product	May 2021	XX
Rev 2.2	Product	March 2023	New format based on English version datasheet
Rev 2.3	Product	January 2024	Update POD and package information

Contact Information

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