

Description

The HTN8G36S015P is an unmatched discrete LDMOS Power Amplifier with 15W saturated output power covering frequency range from 3300 - 3600 MHz.

Features

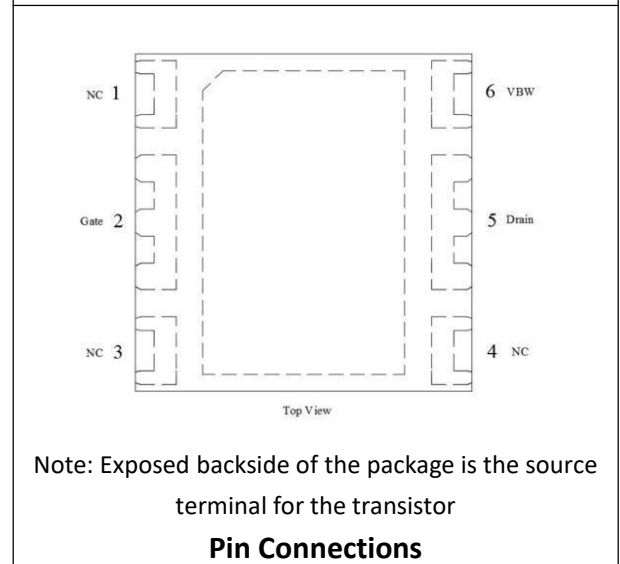
- Operating Frequency Range: 3300 - 3600 MHz
- Operating Drain Voltage: +28V
- Saturation Output Power: 15W
- Power Average: 1.0W
- Excellent thermal stability due to low thermal resistance package
- Enhanced robustness design without device degradation
- Efficiency: 13.1%@3450MHz, LTE
- Gain: 17.5dB@3450MHz,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

Applications

- mMIMO Driver stage
- Small Base station Final stage

Ordering Information

Part Number	Description
HTN8G36S015P	Reel Package
HTN8G36S015PEVB	3300 - 3600 MHz EVB



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 HOTLO 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}	V _{gs} =0V, I _{ds} =17uA	65	-	-	V
Gate-Source Threshold Voltage V _{GS(th)}	V _{gs} =V _{ds} , I _{ds} =17uA	-	1.5	-	V
Drain Leakage Current I _{DSS1}	V _{gs} =0V, V _{ds} =65V	-	-	500	nA
Drain Leakage Current I _{DSS2}	V _{gs} =0V, V _{ds} =28V	-	-	100	nA
Gate Leakage Current I _{GSS1}	V _{gs} =0V, V _{ds} =10V	-	-	1	uA
Gate Leakage Current I _{GSS2}	V _{gs} =0V, V _{ds} =-6V	-	-	200	uA

DC Characteristics

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

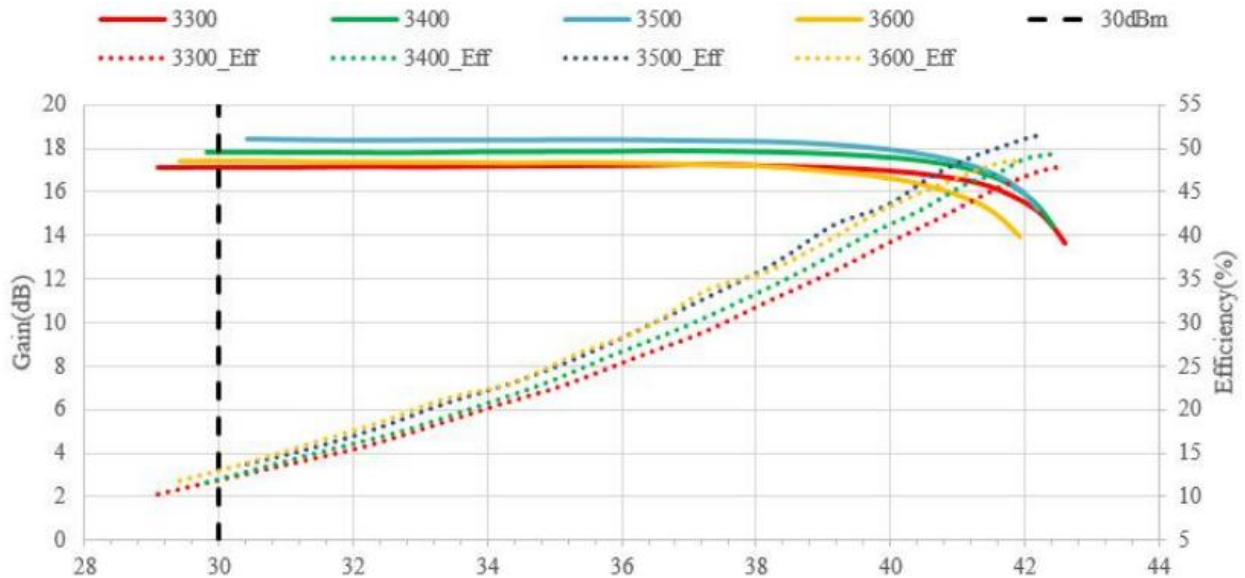
Load Mismatch Test

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

Thermal Information

Parameter	Condition	Value (Typ)	Unit
Thermal Resistance Junction to Case (R_{TH})	$T_{CASE}= 50^{\circ}C, CW 15W$	2.5	$^{\circ}C/W$

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

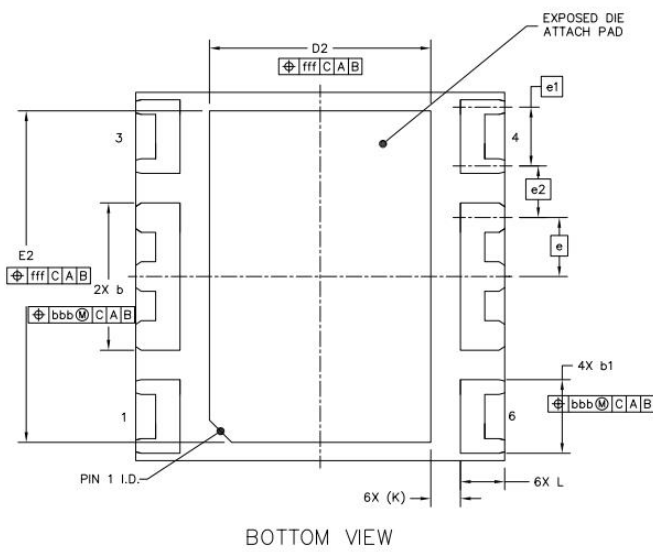
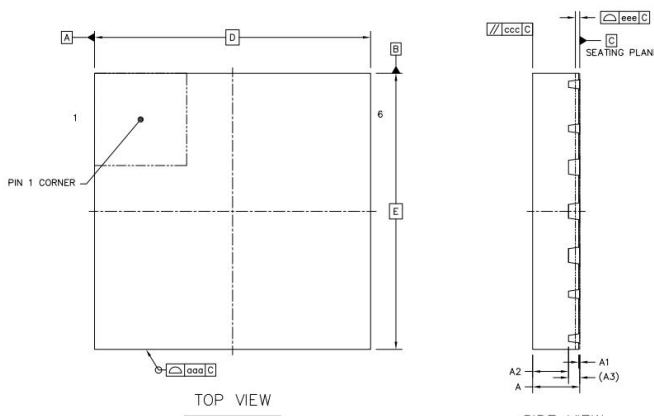
Test conditions unless otherwise noted: 25 °C, VDD = +28Vdc, IDQ= 180mA, PW = 1ms, DC= 10% test on HOTLO Application Board

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 "Holto Product Printing Specification"

Marking

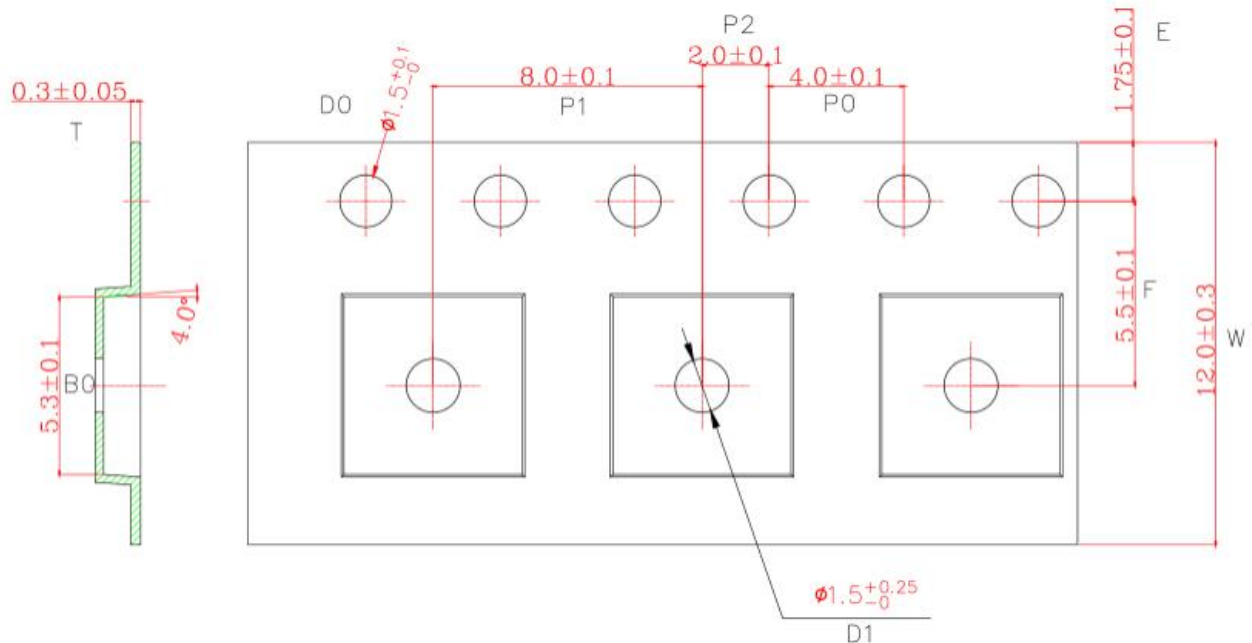


	SYMBOL	MIN	NOM	MAX
TOTAL THICKNESS	A	0.8	0.85	0.9
STAND OFF	A1	0	0.02	0.05
MOLD THICKNESS	A2	---	0.65	---
L/F THICKNESS	A3	0.203 REF		
LEAD WIDTH	b	1.95	2	2.05
	b1	0.95	1	1.05
BODY SIZE	X	D 5 BSC		
	Y	E 5 BSC		
LEAD PITCH	e	0.8 BSC		
	e1	0.8 BSC		
	e2	0.7 BSC		
EP SIZE	X	D2	2.9	3
	Y	E2	4.4	4.5
LEAD LENGTH	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 2.2	Product	March 2023	New format based on English version datasheet
Rev 2.3	Product	January 2024	Update POD and package information

Contact Information

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

- Web: www.andesource.com
- Email: andehk@andesource.com

For technical questions and application information:

- Email: andetech@andesource.com

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