HTL7G06S011P

11W, 1.8 - 600 MHz LDMOS Amplifier

Product datasheet

Description

The HTL7G06S011P is an unmatched discrete LDMOS Power Amplifier with 11W saturated output power covering frequency range for VHF/UHF applications.

Features

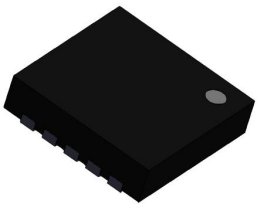
- Operating Frequency Range: VHF/UHF
- Operating Drain Voltage: +7.2V
- Saturation Output Power: 11W
- Enhanced robustness design without device degradation
- Internally integrated enhanced ESD design, using an internal monolithic Zener diode from Gate to Source

Freq (MHz)	Vdd (V)	Pin (W)	Pout (W)	Eff (%)
136 - 174	7.2	0.4	11	60
400 - 470	7.2	0.4	11	60

Test conditions unless otherwise noted: 25 °C,
V_{DD} = +7.2Vdc, I_{DQ}= 300mA, CW Signal

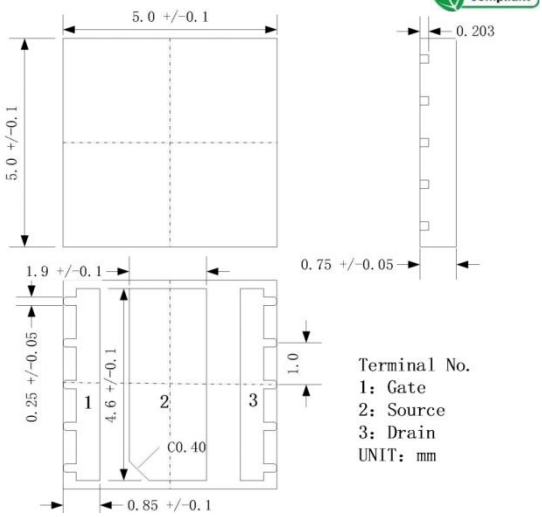
Applications

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



DFN5*5-10L

RoHS compliant



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

Pin Connections

Ordering Information

Part Number	Description
HTL7G06S011P	Reel Package
HTL7G06S011P EVB	136 - 174 MHz EVB
HTL7G06S011P EVB1	400 - 470 MHz EVB

Absolute Maximum Ratings

Parameter	Range/Value	Unit
Drain voltage (V_{DSS})	-0.5 to +25	V
Gate voltage (V_{GS})	-5 to +10	V
Operation voltage (V_{DD})	+9.0	V
Storage Temperature (T_{STG})	-55 to +150	°C
Junction Temperature (T_J)	-40 to +150	°C
Thermal Resistance Junction to Case (R_{TH})	2.8	°C /W

Electrical Specification

DC Characteristics

Parameter	Conditions	Min	Typ	Max	Unit
Breakdown Voltage $V_{(BR)DSS}$	Vgs=0V, Ids=500uA	25	-	-	V
Gate-Source Threshold Voltage $V_{GS(th)}$	Vds=Vgs, Ids=8uA	1.2	1.5	1.8	V
Drain Leakage Current I_{DSS}	Vgs=0V, Vds=17V	-	-	10	uA
Gate Leakage Current I_{GSS}	Vgs=10V, Vds=0V	-	-	1	uA

Load Mismatch Test

Condition	Test Result
VSWR=65:1, at all Phase Angles, V_{DD} = +8.4Vdc, I_{DQ}= 300mA, CW signal 40.5 dBm @156MHz test on HOTLO Application Board	No Device Degradation

RF Characteristics (CW)

Freq (MHz)	Vdd (V)@Idq (mA)	Pin (W)	Pout (W)	Eff (%)
156	7.2@300	0.4	11	60

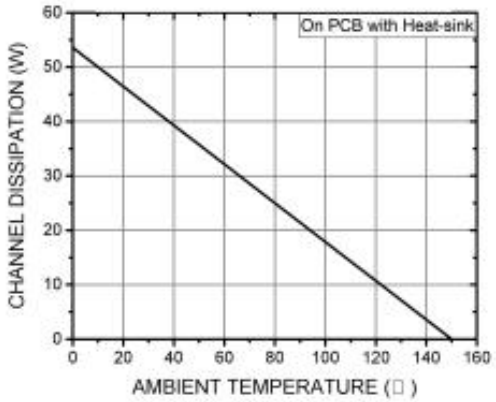
Test conditions unless otherwise noted: 25 °C test on HOTLO Application Board

Freq (MHz)	Vdd (V)@Idq (mA)	Pin (W)	Pout (W)	Eff (%)
435	7.2@300	0.4	10	60

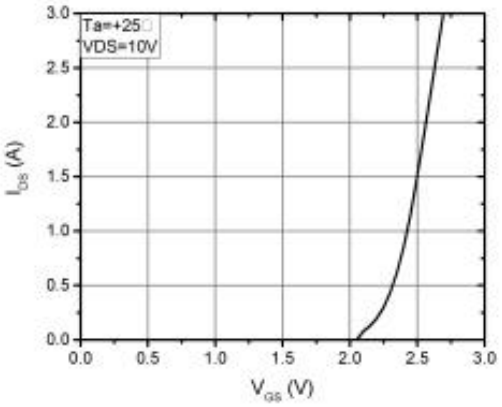
Test conditions unless otherwise noted: 25 °C test on HOTLO Application Board

DC Performance

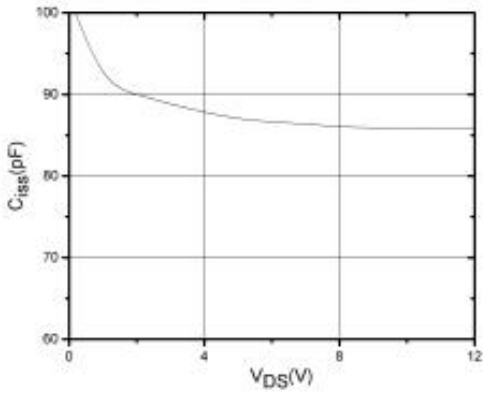
CHANNEL DISSIPATION VS. AMBIENT TEMPERATURE



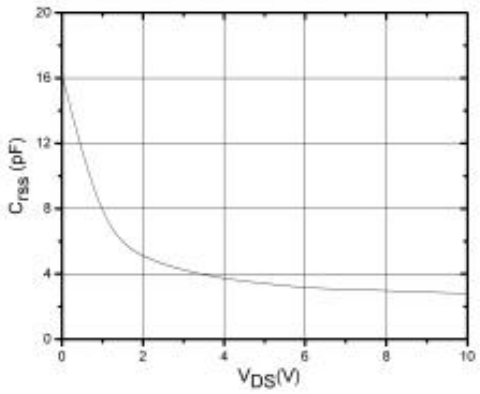
I_{DS} VS. V_{GS}



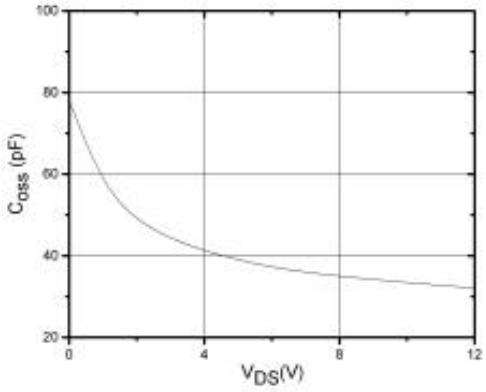
C_{iss} VS.V_{GS}



C_{rss} VS. V_{DG}

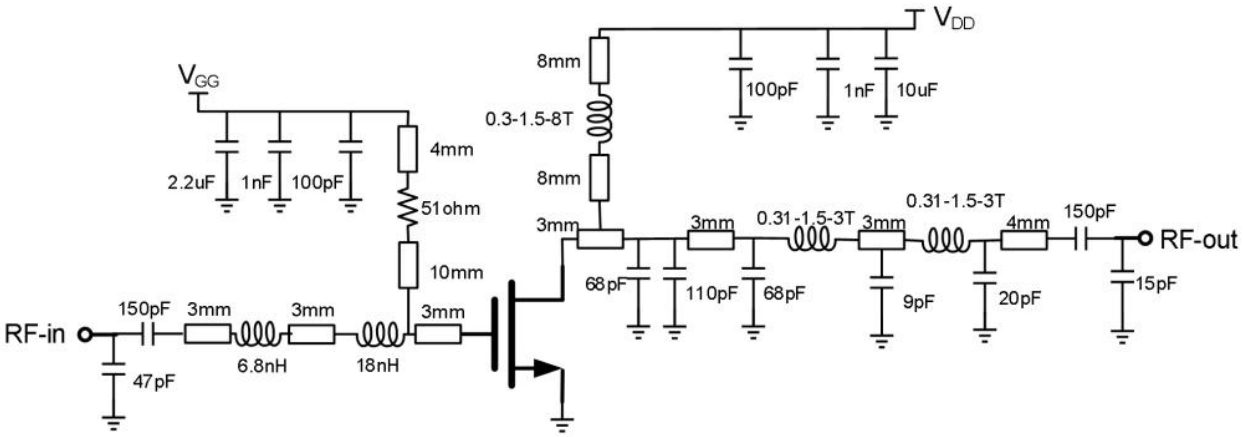


C_{oss} VS. V_{DS}



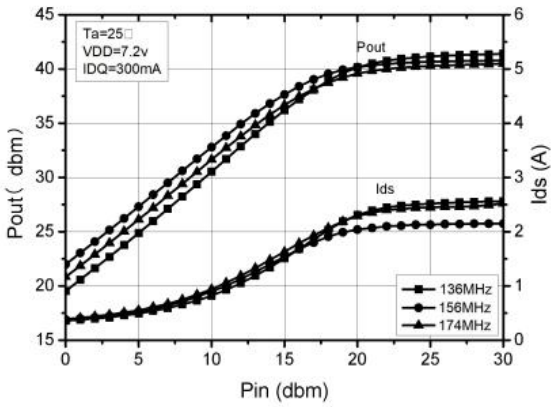
Test conditions unless otherwise noted: 25 °C

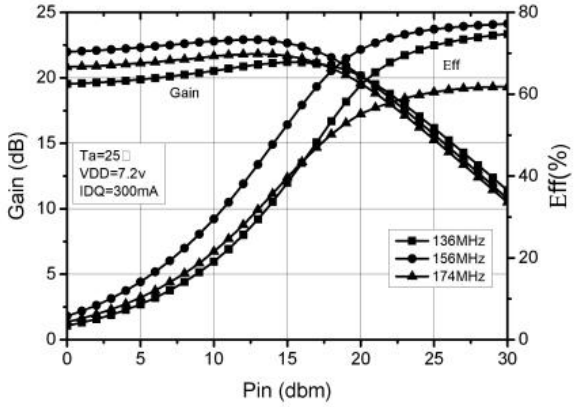
HTL7G06S011P 136 - 174 MHz Reference Design, 7.2V@300mA



EVB Layout

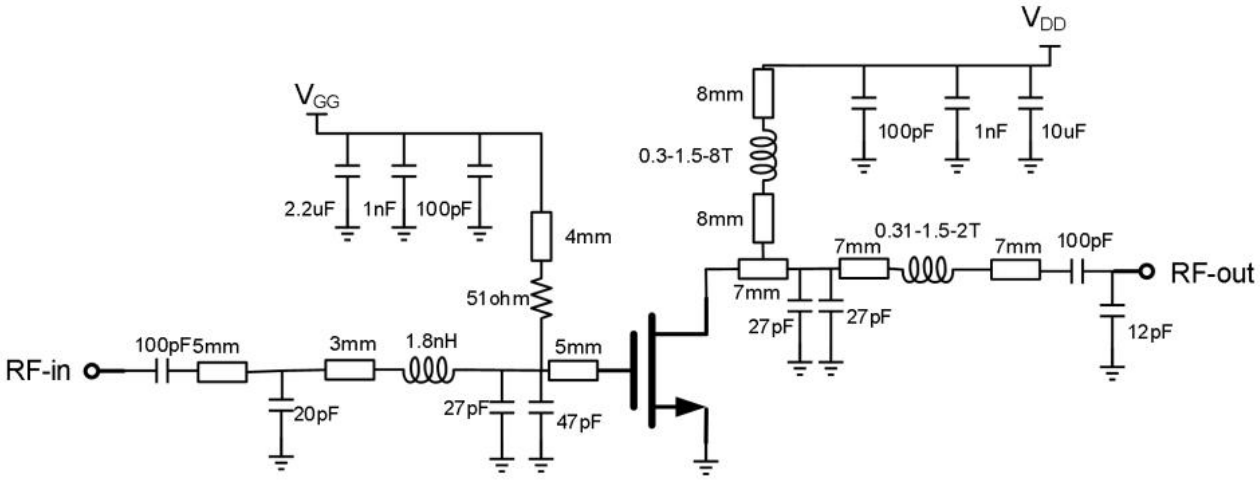
Performance Plots 136 - 174 MHz Reference Design, 7.2V@300mA





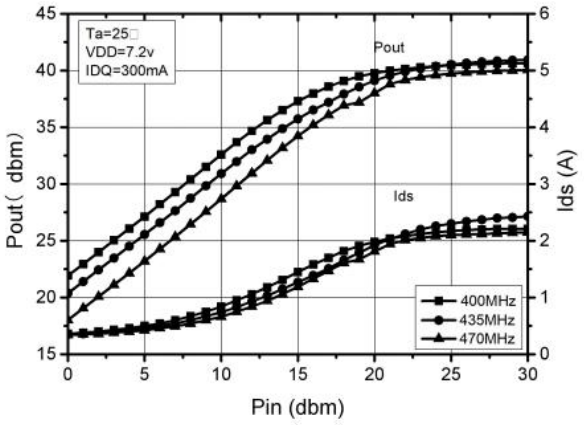
Test conditions unless otherwise noted: 25 °C, VDD = +7.2Vdc, IDQ=300mA, CW test on HOTLO Application Board

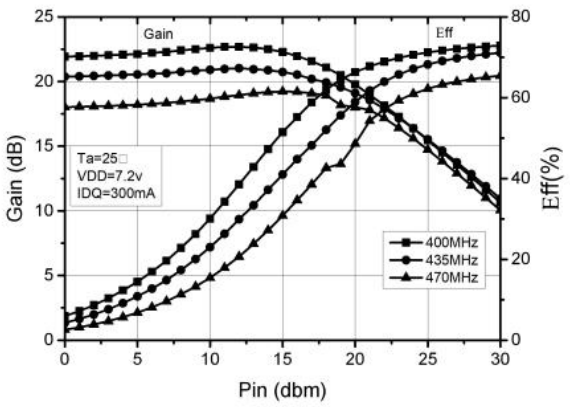
HTL7G06S011P 400 - 470 MHz Reference Design, 7.2V@300mA



EVB Layout

Performance Plots 400 - 470 MHz Reference Design, 7.2V@300mA





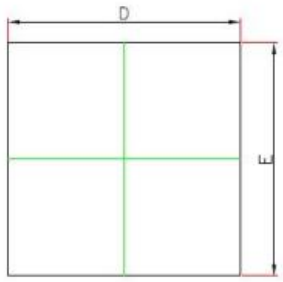
Test conditions unless otherwise noted: 25 °C, VDD = +7.2Vdc, IDQ=300mA, CW test on HOTLO Application Board

Package Marking and Dimensions

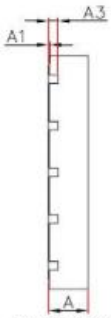
- Line1 (fixed): Device name in W/O
- Line2 (unfixed): Take the last 8 digits of Marking Lot No in W/O
(Sample: E596-20140001, just take "20140001")
- Line3 (unfixed): Date Code + JY

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"

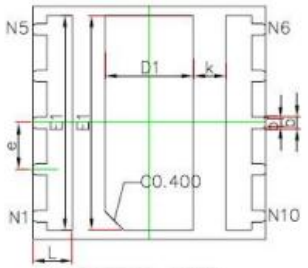
Marking



TOP VIEW



SIDE VIEW



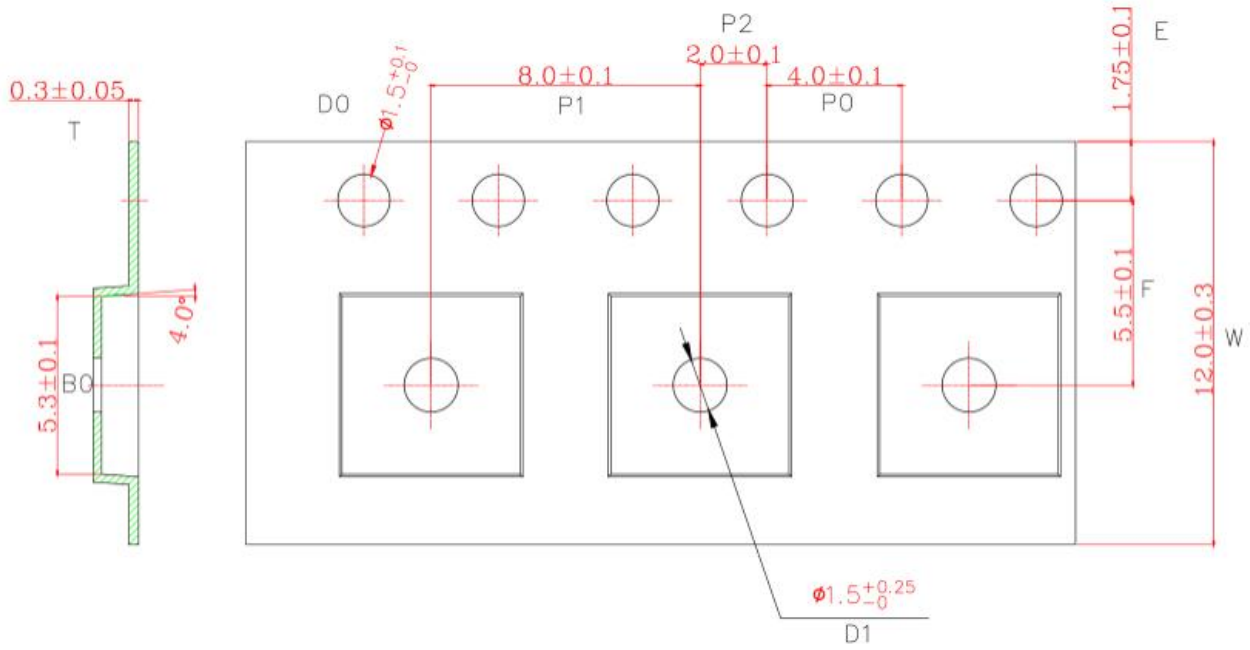
BOTTOM VIEW

Symbol	Dimesions in Milimeters		Dimesions in Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.027	0.032
A1	0.000	0.050	0.000	0.002
A3	0.203REF.		0.008REF.	
D	4.900	5.100	0.193	0.201
E	4.900	5.100	0.193	0.201
D1	1.800	2.000	0.071	0.079
E1	4.500	4.700	0.177	0.185
k	0.700REF.		0.028REF.	
b	0.200	0.300	0.008	0.012
b1	0.180REF.		0.028REF.	
e	1.000BSC.		0.039BSC.	
L	0.750	0.950	0.030	0.037

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	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 1.7	Product	March 2023	New format based on English version datasheet
Rev 1.8	Product	March 2024	Version released after re review

Contact Information

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

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