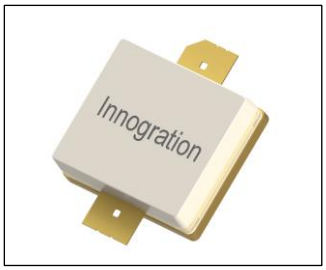
150W,L band 28V RF LDMOS Transistor



Description

The ITGH15150A2C is 100-watt, high performance, Input matched LDMOS transistor, designed for any general applications at frequencies within L band 1.3 to 1.8GHz, in new generation highly cost effective open cavity package.

- Typical 1.4-1.5GHz Class AB RF Performance (On Innogration fixture with device soldered).

V_{DS}= 28V, V_{peak}=2.66V, I_{DQ}=500mA,Pulsed CW 20us,10%					
Freq (MHz)	P-1(dBm)	P-1Gain（dB）	P-3(dBm)	P-3(W)	EFF (%)
1420	51.40	17.3	52.39	173	53.6
1475	51.22	17.4	52.13	163	56.1
1530	50.75	16.9	51.60	145	58.0

VDS= 24V, Vpeak=2.66V, IDQ=500mA, Pulsed CW 20us,10%					
Freq (MHz)	P-1(dBm)	P-1Gain（dB）	P-3(dBm)	P-3(W)	EFF (%)
1420	50.22	17.0	51.17	130	53.8
1475	49.99	17.1	50.84	121	56.2
1530	49.38	16.7	50.22	105	58.2

Features

- High Efficiency and Linear Gain Operations
- Integrated ESD Protection
- Excellent thermal stability, low HCI drift
- Large Positive and Negative Gate/Source Voltage Range for Improved Class C Operation
- Pb-free, RoHS-compliant

Suitable Applications

- L band power amplifier

Table 1. Maximum Ratings

Rating	Symbol	Value	Unit
Drain--Source Voltage	V_{DSS}	+65	Vdc
Gate--Source Voltage	V_{GS}	-10 to +10	Vdc
Operating Voltage	V_{DD}	+28	Vdc
Storage Temperature Range	Tstg	-65 to +150	°C
Case Operating Temperature	T_C	+150	°C
Operating Junction Temperature	T_J	+225	°C

Table 2. Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Case T_C= 85°C, DC test, **device soldered on heatsink directly**	RθJC	0.45	°C/W

Table 3. ESD Protection Characteristics

Test Methodology	Class
Human Body Model (per JESD22--A114)	Class 2

Table 4. Electrical Characteristics (TA = 25 ℃ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
DC Characteristics DC Characteristics					
Drain-Source Voltage V_{GS}=0, I_{DS}=100uA	$V_{(BR)DSS}$		65		V
Zero Gate Voltage Drain Leakage Current (V_{DS} = 28V, V_{GS} = 0 V)	I_{DSS}	——	——	1	μA
Gate--Source Leakage Current (V_{GS} = 11 V, V_{DS} = 0 V)	I_{GSS}	——	——	1	μA
Gate Threshold Voltage (V_{DS} = 28V, I_D = 600 μA)	$V_{GS}(th)$	——	2	——	V
Gate Quiescent Voltage (V_{DD} = 28V, I_D = 500mA, Measured in Functional Test)	$V_{GS(Q)}$	——	2.7	——	V

Load Mismatch (In Innogration Test Fixture, 50 ohm system): V_{DD} = 28Vdc, I_{DQ} = 500 mA, f = 1400 MHz

VSWR 10:1 at 150W pulse CW Output Power	No Device Degradation

1.4-1.5GHz application board

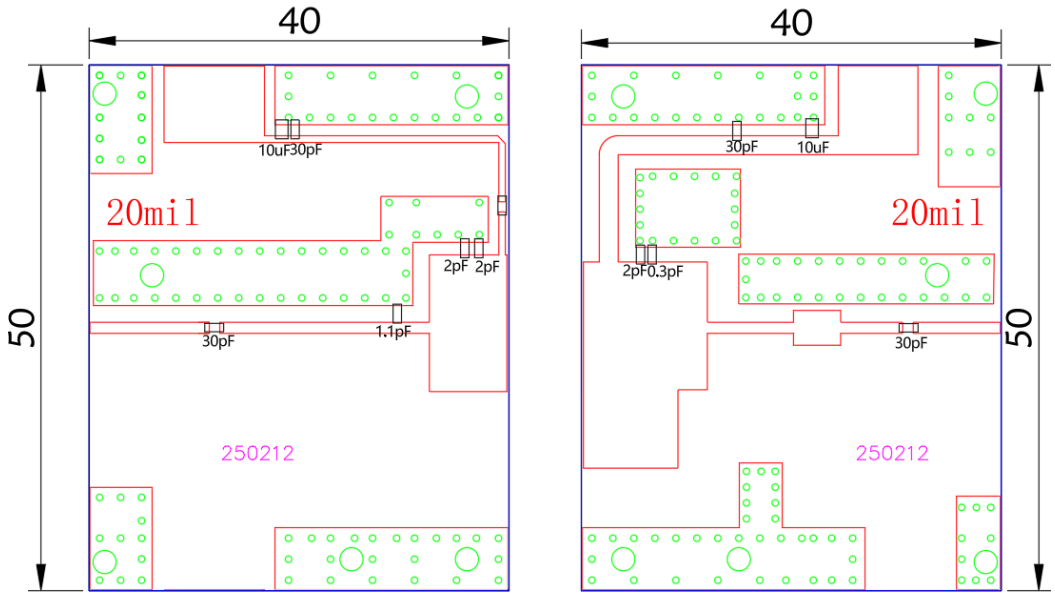


Figure 2. Test Circuit Component Layout, 20mils RO4350B

TYPICAL CHARACTERISTICS

Figure 3. Power Gain and Drain Efficiency as function of Power Output

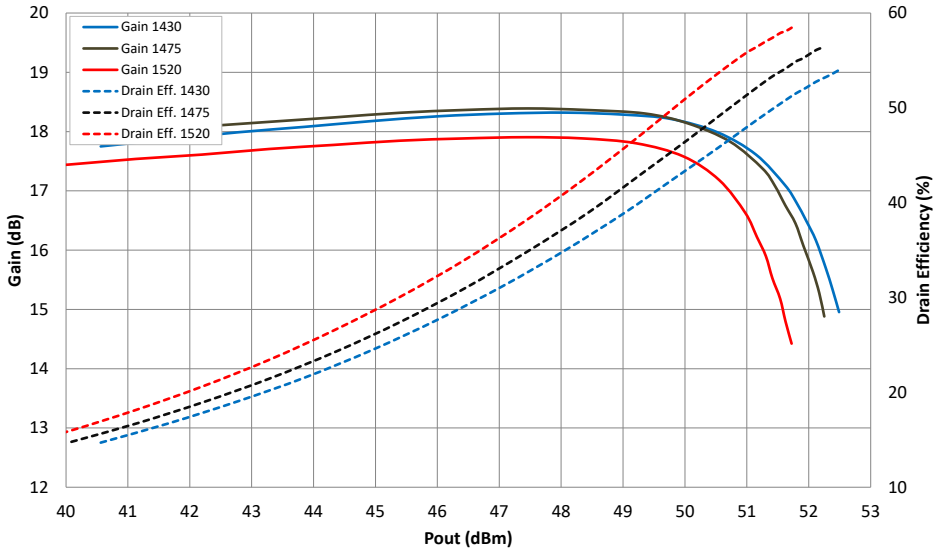
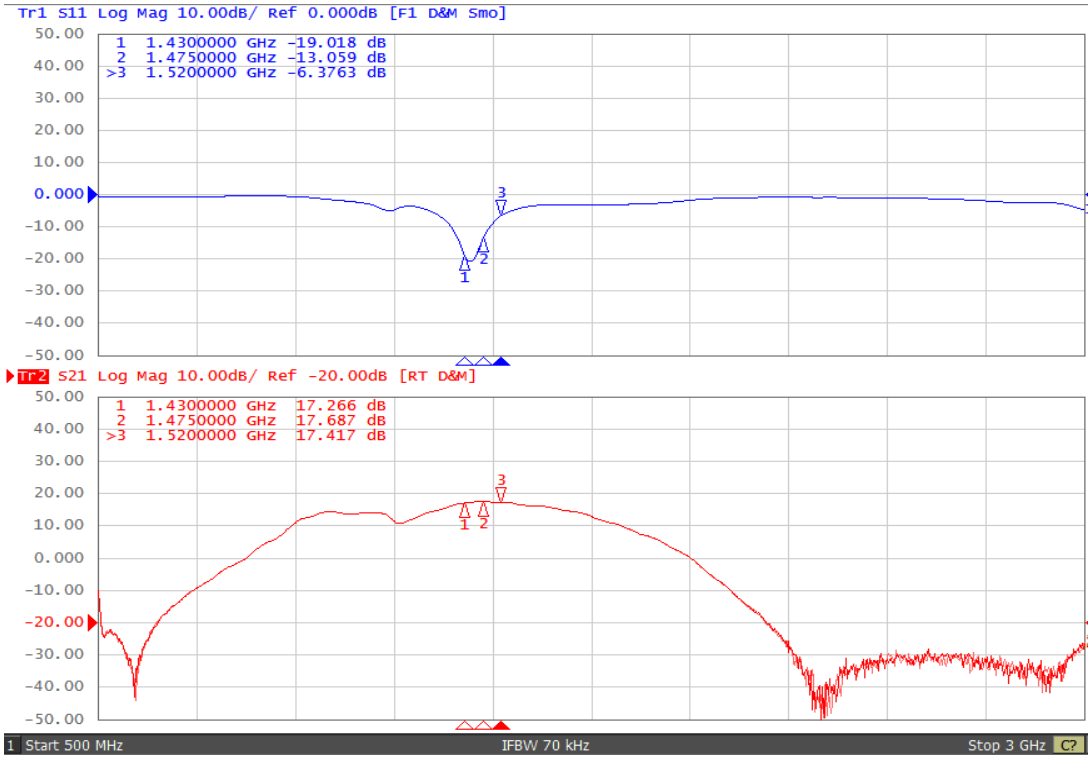
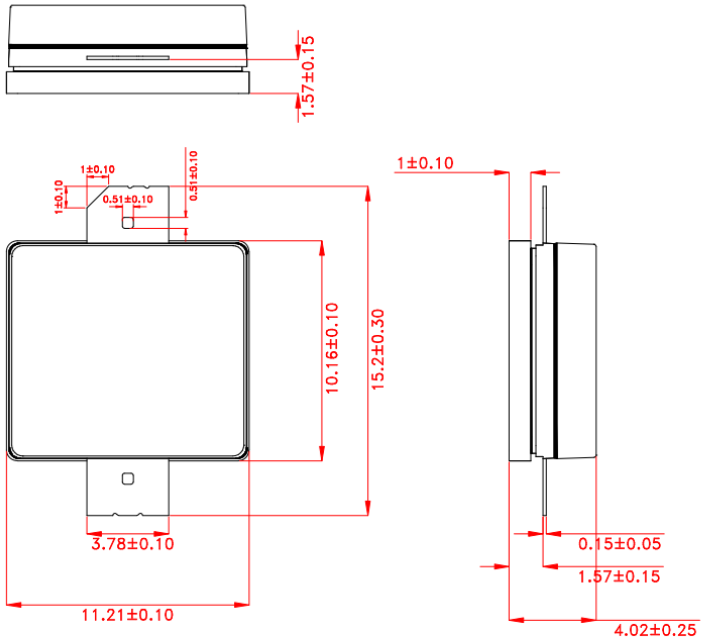
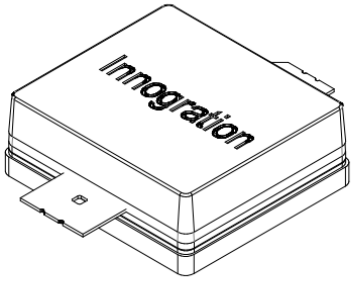


Figure 4： Network analyzer Output S11/S21



Package Dimensions





Unit:mm

Tolerance ±0.10mm,Except as Noted.

Revision history

Table 7. Document revision history

Date	Revision	Datasheet Status
2025/8/14	Rev 1.0	Preliminary Datasheet

Application data based on HJ-25-10

Disclaimers

Specifications are subject to change without notice. Innogration believes the information contained within this data sheet to be accurate and reliable. However, no responsibility is assumed by Innogration for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Innogration . Innogration makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose.“Typical” parameters are the average values expected by Innogration in large quantities and are provided for information purposes only. These values can and do vary in different applications and actual performance can vary over time. All operating parameters should be validated by customer’s technical experts for each application. Innogration products are not designed, intended or authorized for use as components in applications intended for surgical implant into the body or to support or sustain life, in applications in which the failure of the Innogration product could result in personal injury or death or in applications for planning, construction, maintenance or direct operation of a nuclear facility. For any concerns or questions related to terms or conditions, pls check with Innogration and authorized distributors