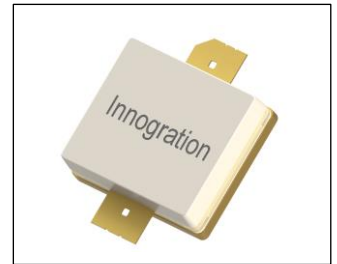




60W,28V RF LDMOS Transistor

Description

The ITEH16060A2C is 60-watt, high performance, input matched LDMOS transistor, designed for any general applications at frequencies from UHF up to 1.6GHz, in new generation highly cost effective open cavity package.



- Typical 1.4GHz Class AB RF Performance (On Innegration fixture with device soldered).
V_{ds}=28V, I_{dq}=100mA

Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff (%)	P1dB Gain (dB)	P3dB (dBm)	P3dB (W)	P3dB Eff (%)
1400	47.16	52.0	66.0	17	48.05	64	69

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

- P band power amplifier
- 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	T _{stg}	-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	R _{θJC}	1.1	°C/W

Table 3. ESD Protection Characteristics

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

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

Characteristic	Symbol	Min	Typ	Max	Unit
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DC Characteristics

Drain-Source Voltage V _{GS} =0, I _{DS} =100uA	V _{(BR)DSS}		65		V
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Zero Gate Voltage Drain Leakage Current ($V_{DS} = 28V$, $V_{GS} = 0V$)	I_{loss}	—	—	1	μA
Gate--Source Leakage Current ($V_{GS} = 11V$, $V_{DS} = 0V$)	I_{loss}	—	—	1	μA
Gate Threshold Voltage ($V_{DS} = 28V$, $I_D = 600\mu A$)	$V_{GS(th)}$	—	2	—	V
Gate Quiescent Voltage ($V_{DD} = 28V$, $I_D = 100mA$, Measured in Functional Test)	$V_{GS(Q)}$	—	2.6	—	V

Load Mismatch (In Innegration Test Fixture, 50 ohm system): $V_{DD} = 28Vdc$, $I_{DQ} = 100mA$, $f = 1400MHz$

VSWR 10:1 at 60W pulse CW Output Power	No Device Degradation
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1400MHz application board

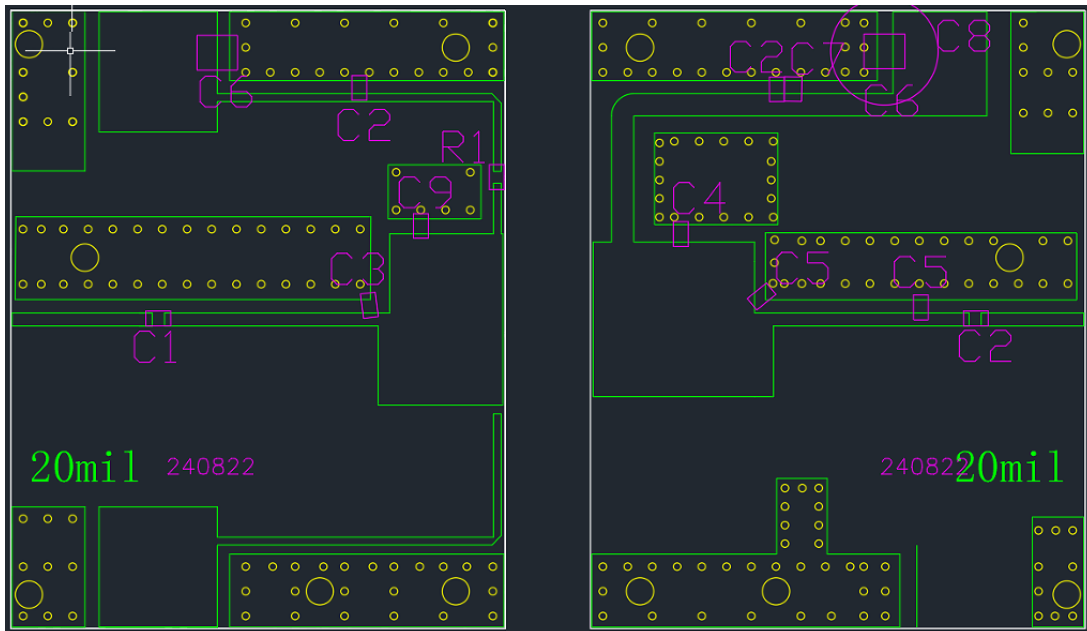


Figure 2. Test Circuit Component Layout, 20mils RO4350B

Note:

Table 5. Test Circuit Component Designations and Values

Component	Value	Quantity
C1	3pF	1
C2	30pF	3
R1	10 ohm	1
C3	3pF	1
C4	5.1pF	1
C5	2pF	2
C6	10uF	2
C7	1uF	1
C8	470uF	1
C9	4.7pF	1



TYPICAL CHARACTERISTICS

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

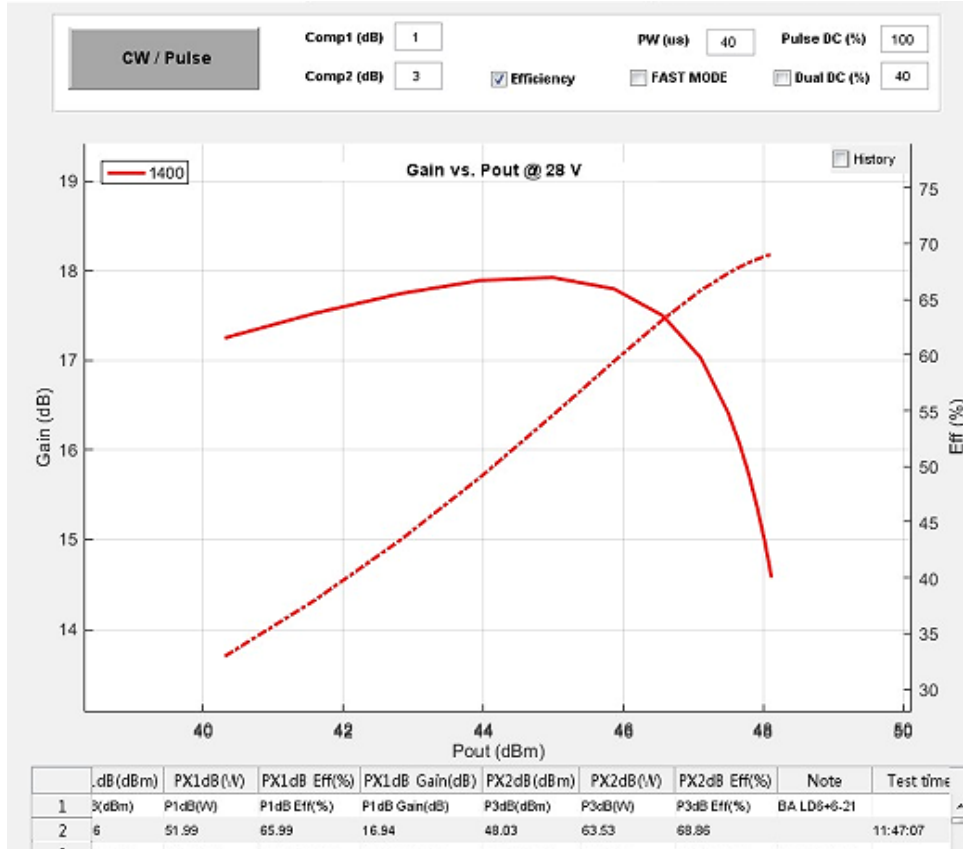
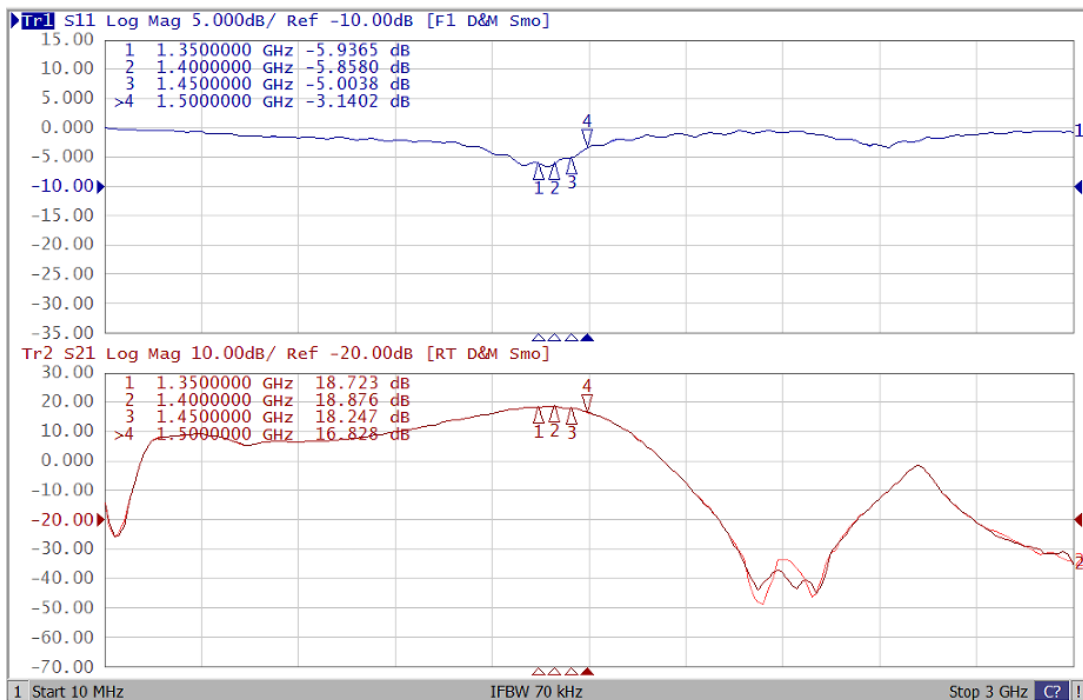
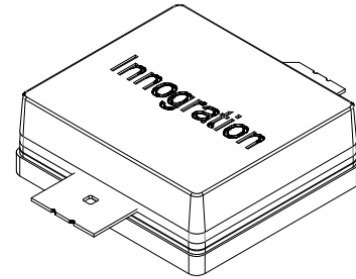
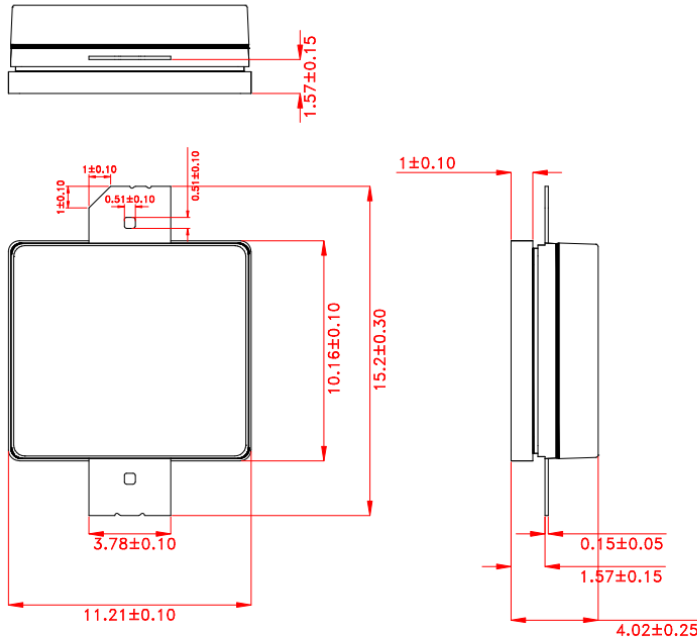


Figure 4: Network analyzer Output S11/S21





Package Dimensions



Unit:mm

Tolerance ±0.10mm,Except as Noted.

Revision history

Table 7. Document revision history

Date	Revision	Datasheet Status
2024/8/27	Rev 1.0	Preliminary Datasheet

Application data based on ZXY-24-27

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