

WP482P45130UH

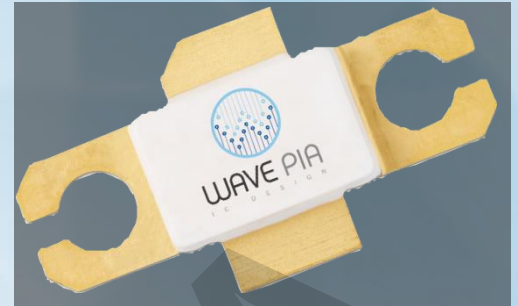
130W RF GaN Power Transistor



WAVEPIA
I C D E S I G N

Product Features

- Up to 3.5 GHz Operation
- 15.4 dB Small Signal Gain at 2.45 GHz
- 147 W Typical Psat at 2.45 GHz
- 69 % Efficiency at Psat at 2.45 GHz
- 48 V Operation



Applications

- Broadband Amplifiers
- Cellular Infrastructure
- Test Instrumentation
- WiMAX, LTE, WCDMA, GSM
- Radar application

DC Characteristics (TC = 25°C)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Gate Threshold Voltage	$V_{GS(th)}$		-3.1		V_{DC}	$V_{DS} = 48 V$
Gate Quiescent Voltage	$V_{GS(Q)}$		-2.79		V_{DC}	$V_{DS} = 48 V, I_D = 200 mA$

RF Characteristics (TC = 25°C, F0 = 2.45GHz unless otherwise noted)

Parameter	Symbol	MIN	TYP	MAX	Units	Conditions
Saturated Output Power	P_{SAT}		165		W	$V_{DD} = 48 V, I_{DQ} = 200 mA, \text{Pulse Width} = 100 \mu\text{sec}, \text{Duty Cycle} = 10\%$
Pulsed Drain Efficiency ¹	η		71		%	$V_{DD} = 48 V, I_{DQ} = 200 mA, \text{Pulse Width} = 100 \mu\text{sec}, \text{Duty Cycle} = 10\% @ P_{sat}$

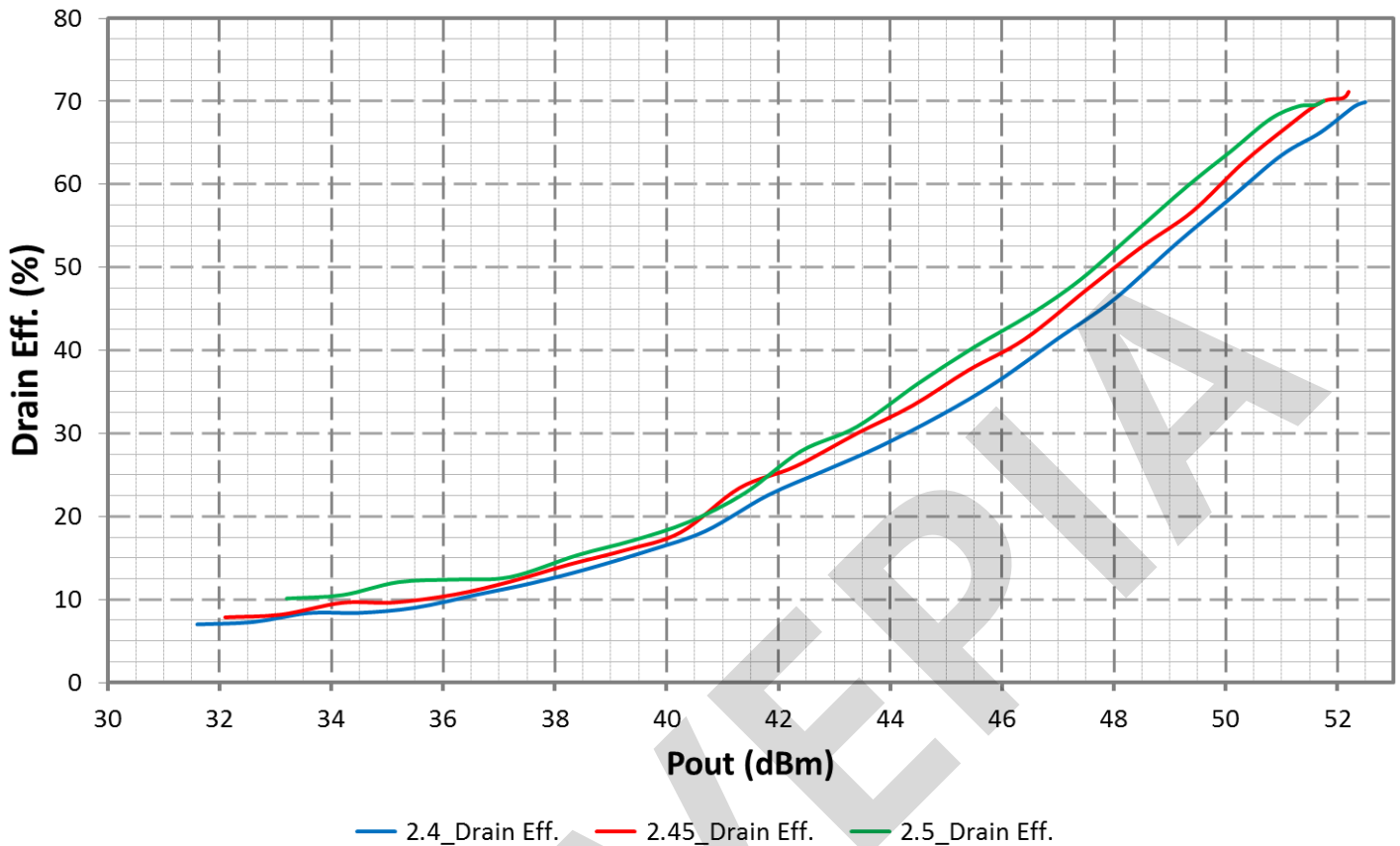
Note:

1. Drain Efficiency = P_{OUT}/P_{DC}

Pulse Signal Performance (Tc=25°C, Measured in the test board amplifier circuit)

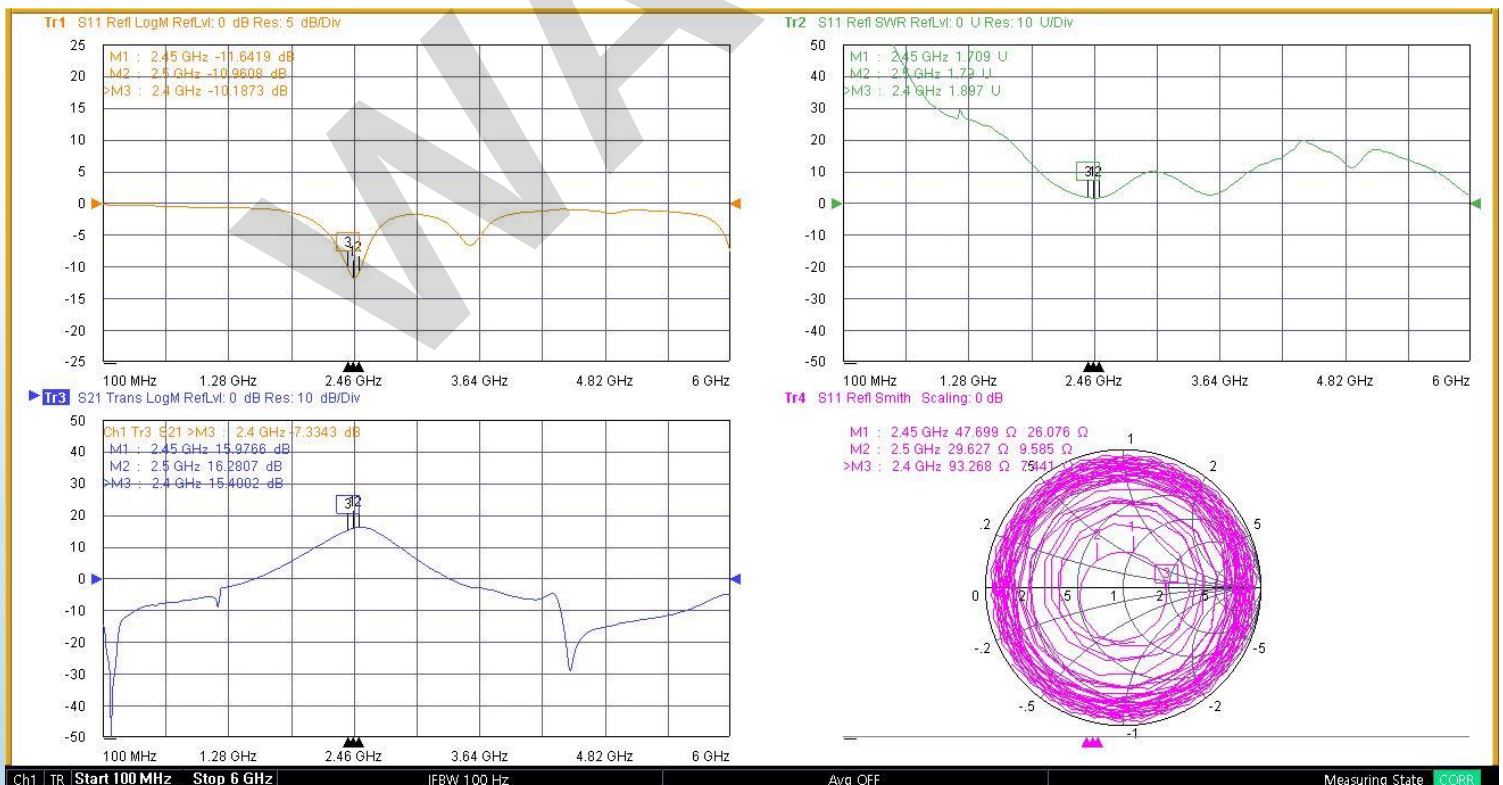
VDD = 48V, IDQ = 200 mA, PulseWidth = 100µsec, Duty Cycle = 10%

Drain Efficiency vs. Pout

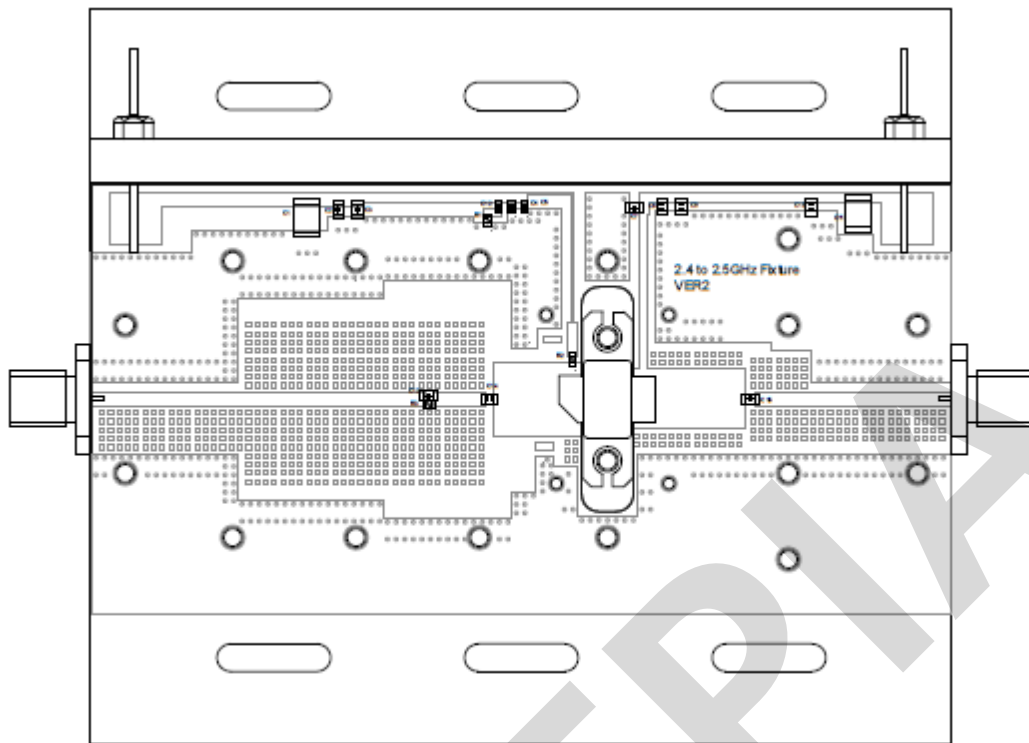


Small Signal Performance (Tc=25°C, Measured in the test board amplifier circuit)

VDD = 48V, IDQ = 200 mA



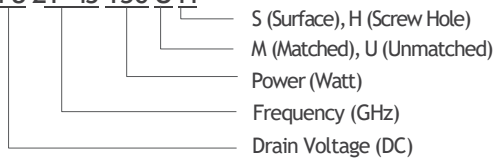
Demonstration board



Reference	Value	Description	Package	Manufacturer
C14	1.2pF	High Q Capacitor	CHA	TEMEX
C15	1.3pF	High Q Capacitor	CHA	TEMEX
C13	9.1pF	High Q Capacitor	CHA	TEMEX
C3	100pF	Ceramic Capacitor	2012	Murata
C2	100nF	Ceramic Capacitor	2012	Murata
C6	10pF	Ceramic Capacitor	1608	Murata
C4	100pF	Ceramic Capacitor	1608	Murata
C5	10F	Ceramic Capacitor	1608	Murata
C12	1nF	Ceramic Capacitor	1608	Murata
C1	20uF/16V	Tantalum Capacitor	-	-
C8,C9	100pF	High Q Capacitor	CHA	TEMEX
C7,C10	10pF	High Q Capacitor	CHA	TEMEX
C11	470nF	High V Capacitor	3528	Johanson Dielectrics
R1	50Ω	Chip Resistor	1608	Walsin
R2	10Ω	Chip Resistor	1608	Walsin
R3	100Ω	Chip Resistor	1608	Walsin

Part numbercode

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Package Dimensions

