

Product Features

- GaN on SiC Broadband High Power Amplifier
- 500 ~ 2500MHz Operation Bandwidth
- 40W Typical Psat
- 35% typical Power Efficiency at Psat

Applications

- General Purpose

**Description**

The power amplifier module is designed for general purpose.

Operating frequency range is from 500 ~ 2500MHz.

Gallium Nitride on SiC Technology is used and attached on a copper sub carrier.

Improved thermal handling by patented technology.

Electrical Specifications @ VDD=28VDC, T=25°C, 50Ω System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency Range	MHz	500	-	2500	BW
Power Output CW	Watt	35	40	-	P _{sat}
Power Gain @46dBm	dB	-	56	-	G _P
Gain Flatness @P _{sat}	dB	-	±1.5	±2.0	ΔG
Gain Variation	dB	-	±1.5	±2.0	ΔG _{TEMP}
Input Return Loss	dB	-	-8	-5	S11
Power Added Efficiency @P _{SAT}	%	26	35	-	η
Operating Voltage	Volt	27.5	28	30	VDC
Current Consumption @P _{SAT} , VDC=28V	Amp	-	6	8	I _{SAT}

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	°C	-30	-	85	T _c
Storage Temperature	°C	-45	-	105	T _{stg}
Relative humidity w/o condensation	%	-	-	95	RH
Altitude	Feet	10,000	30,000	-	ALT
Shock & Vibration	Per Mil Std 810E				SH / VI

Mechanical Specifications

PARAMETER	UNIT	VALUE	LIMIT
Dimensions	Inch mm	6.7 x 3.4 x 0.9 172 x 88 x 24	-
Weight	lb. g	1.43 650	-
RF Connectors In/Out	-	SMA female	-
DC & Control Signals Connector	-	D-sub, 9-Pin	-
Cooling	-	External Heat-sink	-

Performance Data

(1) Spectrum Analyzer Test Results

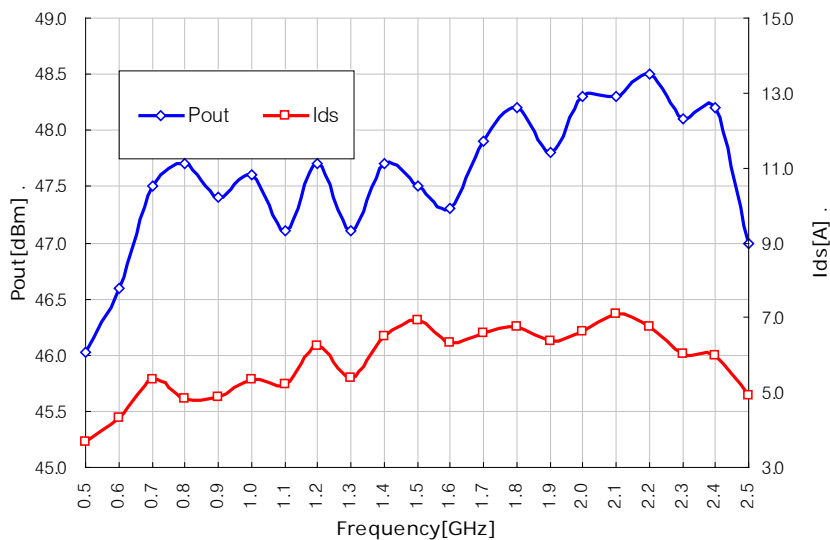
1) Summary Table

Test Condition : Ta=25 °C, Tc=50 °C

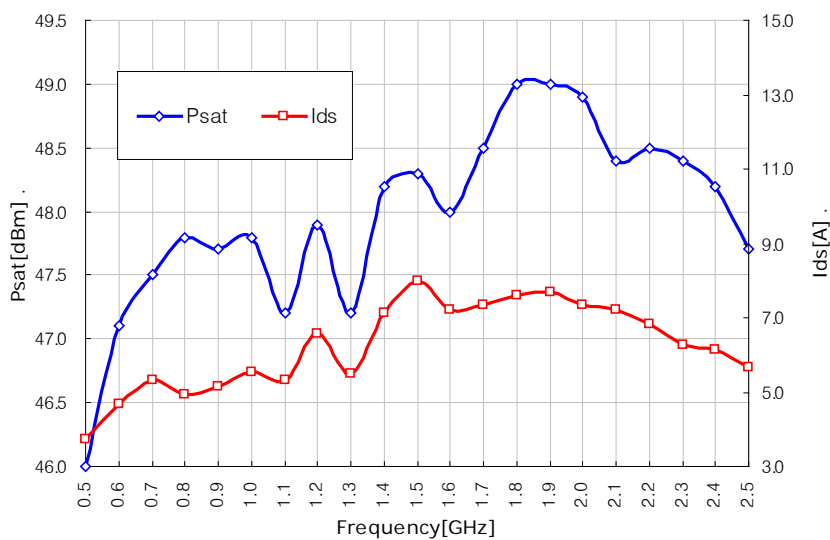
Frequency	Test Condition : Fixed Input Power=-10dBm				Test Condition : Maximum Output Power		
	Pout	Ids@Pout	Power Gain @Pout	Drain Efficiency @Pout	Psat	Ids @Psat	Drain Efficiency @Psat
	MHz	A	dB	%	dBm	A	%
500	46.0	3.7	56.0	38.8	46.0	3.7	38.2
600	46.6	4.3	56.6	37.9	47.1	4.7	39.0
700	47.5	5.3	57.5	37.7	47.5	5.3	37.6
800	47.7	4.8	57.7	43.4	47.8	4.9	43.7
900	47.4	4.9	57.4	40.1	47.7	5.2	40.7
1000	47.6	5.3	57.6	38.5	47.8	5.6	38.7
1100	47.1	5.2	57.1	35.0	47.2	5.3	35.3
1200	47.7	6.2	57.7	33.8	47.9	6.6	33.5
1300	47.1	5.4	57.1	33.9	47.2	5.5	34.0
1400	47.7	6.5	57.7	32.3	48.2	7.1	33.0
1500	47.5	6.9	57.5	29.1	48.3	8.0	30.2
1600	47.3	6.3	57.3	30.3	48.0	7.2	31.3
1700	47.9	6.6	57.9	33.5	48.5	7.4	34.4
1800	48.2	6.7	58.2	35.0	49.0	7.6	37.4
1900	47.8	6.4	57.8	33.7	49.0	7.7	37.0
2000	48.3	6.6	58.3	36.3	48.9	7.4	37.7
2100	48.3	7.1	58.3	34.0	48.4	7.2	34.3
2200	48.5	6.7	58.5	37.5	48.5	6.8	37.1
2300	48.1	6.0	58.1	38.1	48.4	6.3	39.4
2400	48.2	6.0	58.2	39.3	48.2	6.2	38.3
2500	47.0	4.9	57.0	36.3	47.7	5.7	37.0

2) Performance Graph

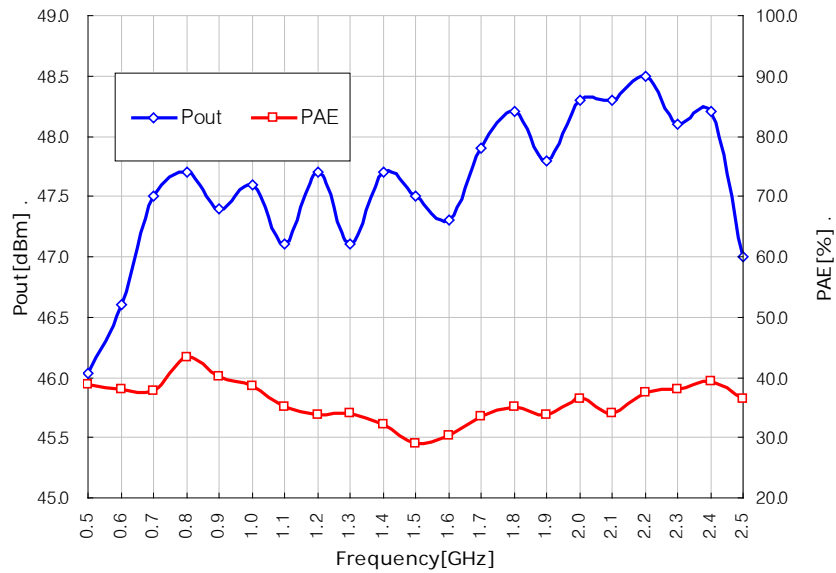
Output Power @ Pin=-10dBm & I_{ds} vs. Frequency



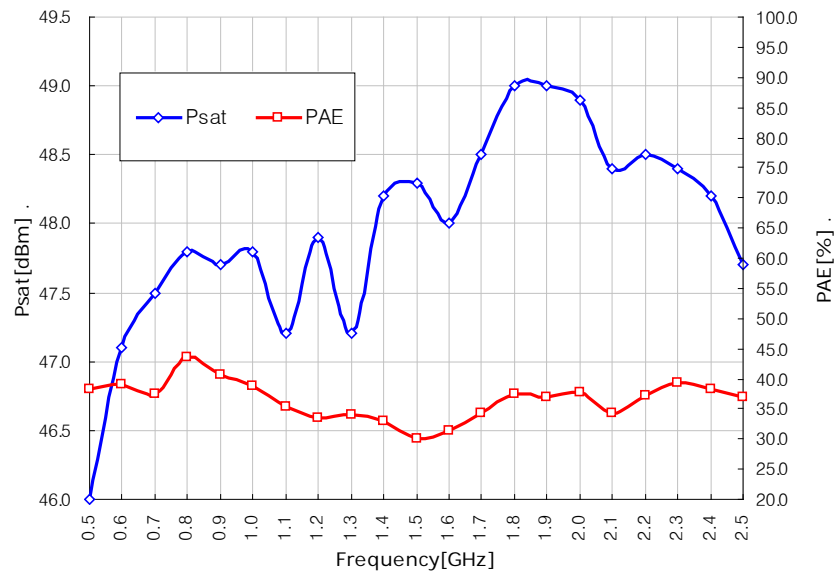
Saturation Power & I_{ds} vs. Frequency



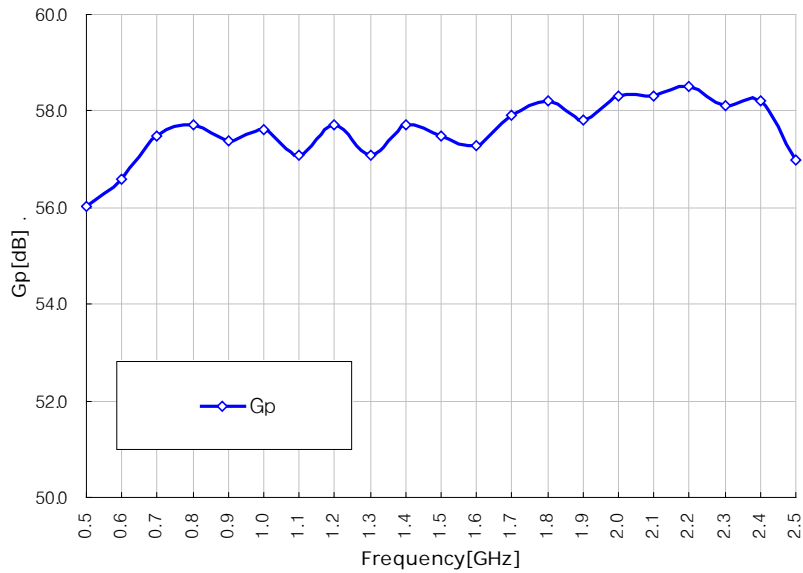
Output Power @ Pin=-10dBm & PAE vs. Frequency



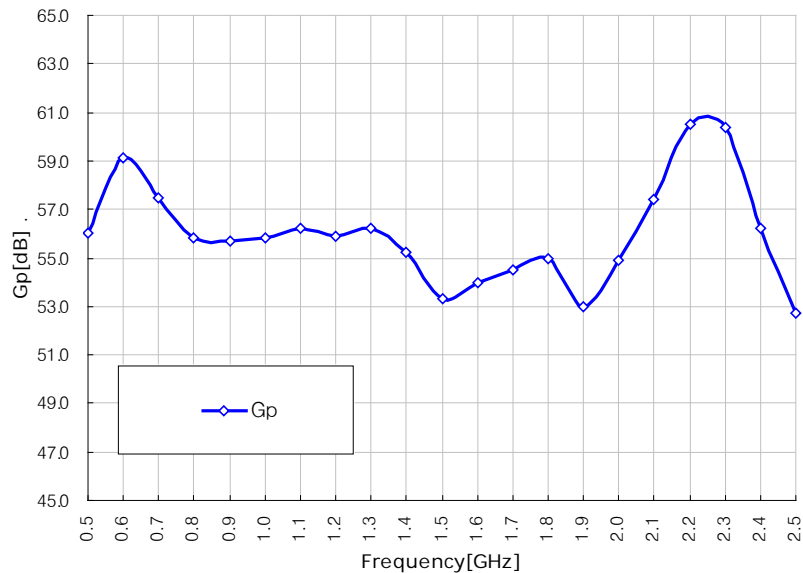
Saturation Power & PAE vs. Frequency



Power Gain @ Pin=-10dBm vs. Frequency

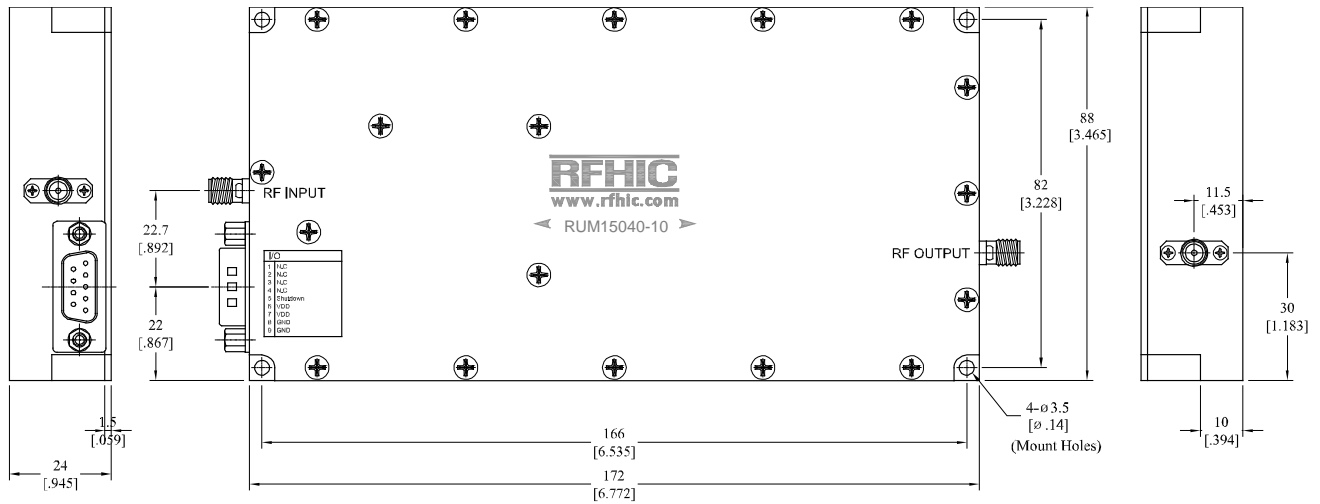


Power Gain @ Psat vs. Frequency



Outline Drawing

* Unit: mm[inch] | Tolerance ±0.2[.008]



Note
Cover screw holes and Module Mount Holes would be changed.

Pin Description

D-Sub, 9-Pin, male

Pin No	Description	I/O	Specifications
1	N.C.	-	Reserved
2	N.C.	-	Reserved
3	N.C.	-	Reserved
4	N.C.	-	Reserved
5	Shutdown	I	Enable =0V or Open, Disable =5V(Idq=100mA)
6	VDD	I	28 VDC
7	VDD	I	28 VDC
8	GND	I	Ground
9	GND	I	Ground

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
RUM15040-10	2014.07.10	1.1	Modify Power Gain	-
RUM15040-10	2012.9.28	1.0	-	-

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