GaN Power Amp Pallet GMPA6080-50H

Product Features

6-8GHz(C band)

50W CW @28V, 60W CW@32V

40% Drain Efficiency@28V

50ohm in and out, 20*40mm, screw down

Linear or saturated use

Applications

5G Power amplifier

C band Satcom

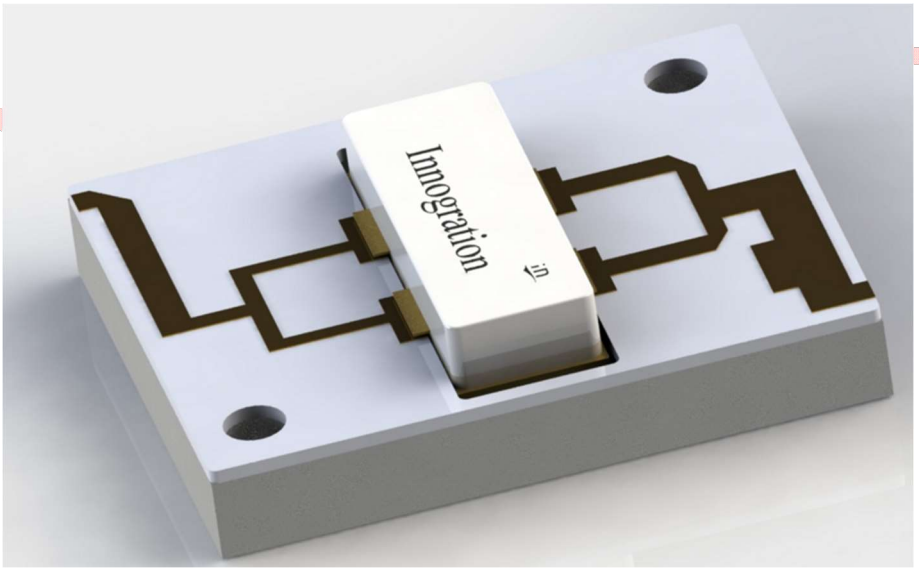
ISM

Point to point

Radio link

Description

The GMPA6080-50H is designed for 5G or satcom, test and measurement and other ISM applications at 6000-8000MHz. This Amplifier pallet is suitable for use in linear and saturated applications. Featured by its tiny size 20*40mm, and 50ohm fully matched at input and output, drop-in placement by screwing it down and 100% RF test, it enables easier power combination to reach higher power with high production yield as part of customer's power amplifier system.



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Electrical Specifications @VCC=28V, T=25℃, 50Ωsystem

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	6000	-	8000	fo
Operating Bandwidth	MHz	2000		-	OBW
Pulse CW Output Power	W	50		-	Pout
Power Gain	dB	7	8	-	G_P
Gain Flatness	dB	-	±0.75	-	G_F
Input Return Loss	dB	-	-	-10	S_{11}
Operating Voltage	V	-	28	36	V_{DS}
Quiescent Current	mA	-	100	-	I_{DQ}
Efficiency@Psat	%		40	-	Eff

Environmental Characteristics

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	℃	-20	-	85	Ta
Storage Temperature	℃	-40		100	Tstg
Relative humidity w/o condensation	%	-	-	95	RH

Mechanical Specifications

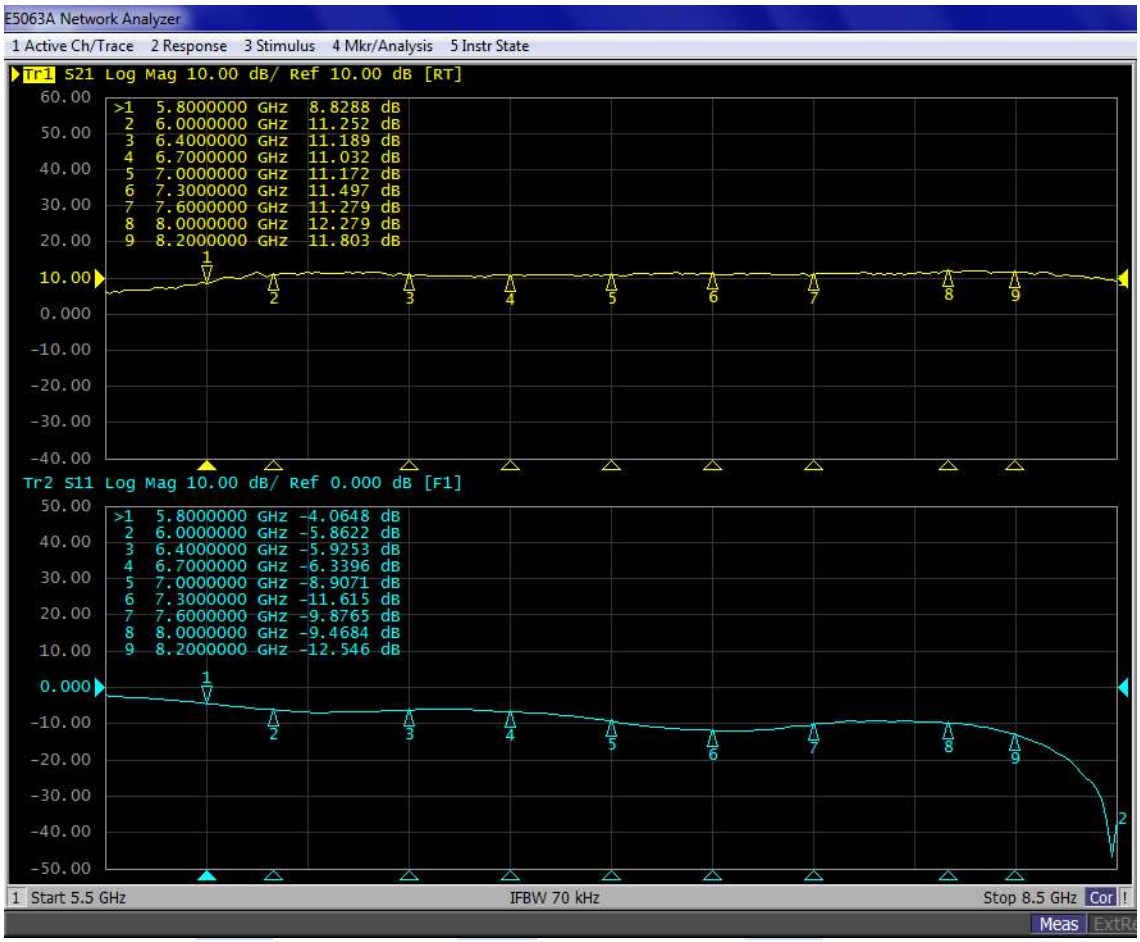
PARAMETER	UNIT	VALUE
Dimensions(L × W × H)	mm	20×40×4
Weight	g	50
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

Typical performance

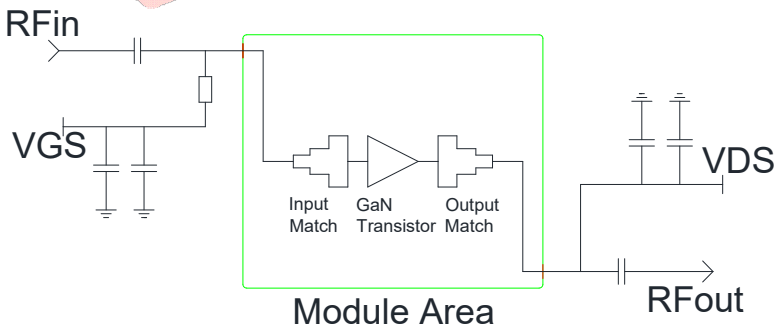
- CW performance: Vds=+28V, IDQ=100mA, T=25℃

Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	Ids(A)	Gain(dB)	Eff(%)
6000	40.3	48.2	65.8	4.52	7.9	52.0
6100	41.0	48.1	64.9	4.45	7.2	52.1
6200	39.6	47.4	55.5	4.05	7.8	48.9
6300	38.9	48.0	63.0	4.48	9.1	50.2
6400	40.8	47.8	60.1	4.52	7.0	47.5
6500	39.7	48.3	66.8	4.72	8.6	50.6
6600	39.7	47.9	61.0	4.70	8.2	46.3
6700	41.8	48.6	72.4	5.20	6.8	49.8
6800	38.9	48.3	67.5	4.82	9.4	50.0
6900	39.8	48.0	63.7	4.87	8.3	46.7
7000	40.8	47.8	59.7	4.53	7.0	47.1
7100	38.6	48.2	65.9	4.98	9.6	47.3
7200	39.0	48.3	67.8	5.11	9.3	47.4
7300	40.6	48.2	66.7	4.92	7.6	48.4
7400	38.7	48.1	64.9	5.14	9.4	45.1
7500	39.4	47.8	59.7	5.30	8.4	40.2
7600	39.6	47.8	60.0	5.34	8.2	40.1
7700	38.3	48.1	64.0	5.32	9.8	42.9
7800	39.4	47.9	62.1	5.12	8.5	43.3
7900	38.0	47.4	54.7	4.72	9.4	41.4
8000	39.0	47.6	58.1	5.02	8.7	41.3

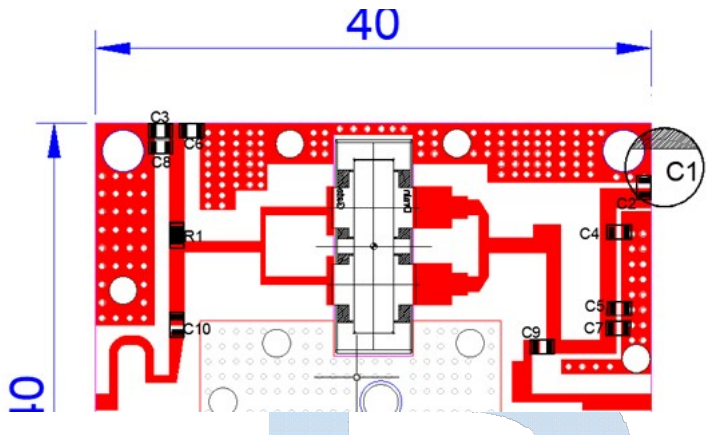
- **S21/S11 from network analyzer VDS=28V VGS=-3.23V IDQ=400mA**



Evaluation board Block Diagram



Evaluation board outline



Component	Description	Suggestion
C1	470uF/63V	
C2,C3,C4	100nF	0805
C5,C6	100pF	0805
C7,C8,C9,C10	2.4pF	0805
R1	Chip Resistor,10Ω	0805
PCB	Rogers tc350-plus, Er = 3.5, thickness 20 mils, 1oz copper	

Revision History

Document revision history

Date	Revision	Datasheet Status
2023/4/6	Rev 1.0	Preliminary Datasheet

Application data based on RXT-23-10 (NL7507HS)

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