

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

Device used: NL7507HS

Applications

5G Power amplifier

C band Satcom

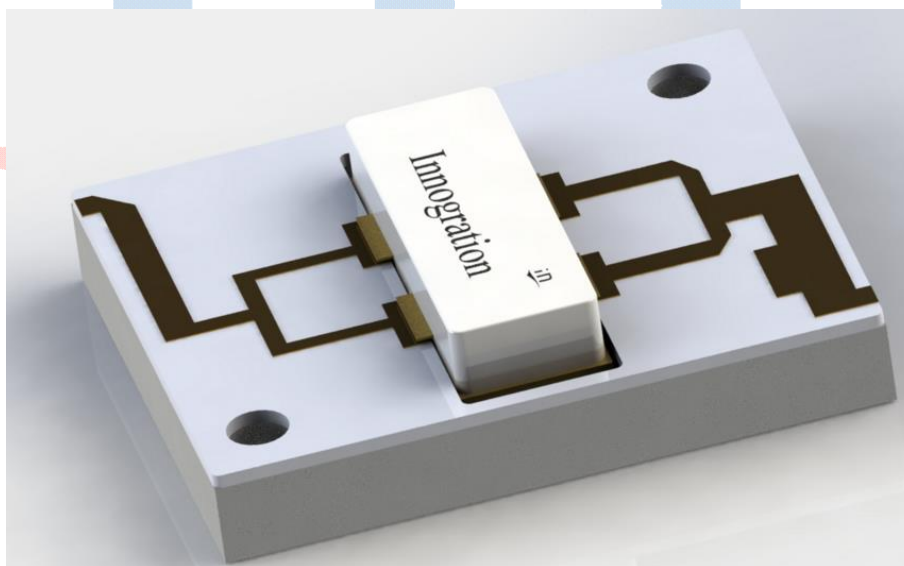
ISM

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.



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

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	6000	-	8000	fo
Operating Bandwidth	MHz	2000		-	OBW
Pulse CW Output Power	W	50	60	-	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	°C	-20	-	85	Ta
Storage Temperature	°C	-40		100	Tstg
Relative humidity w/o condensation	%	-	-	95	RH

Mechanical Specifications

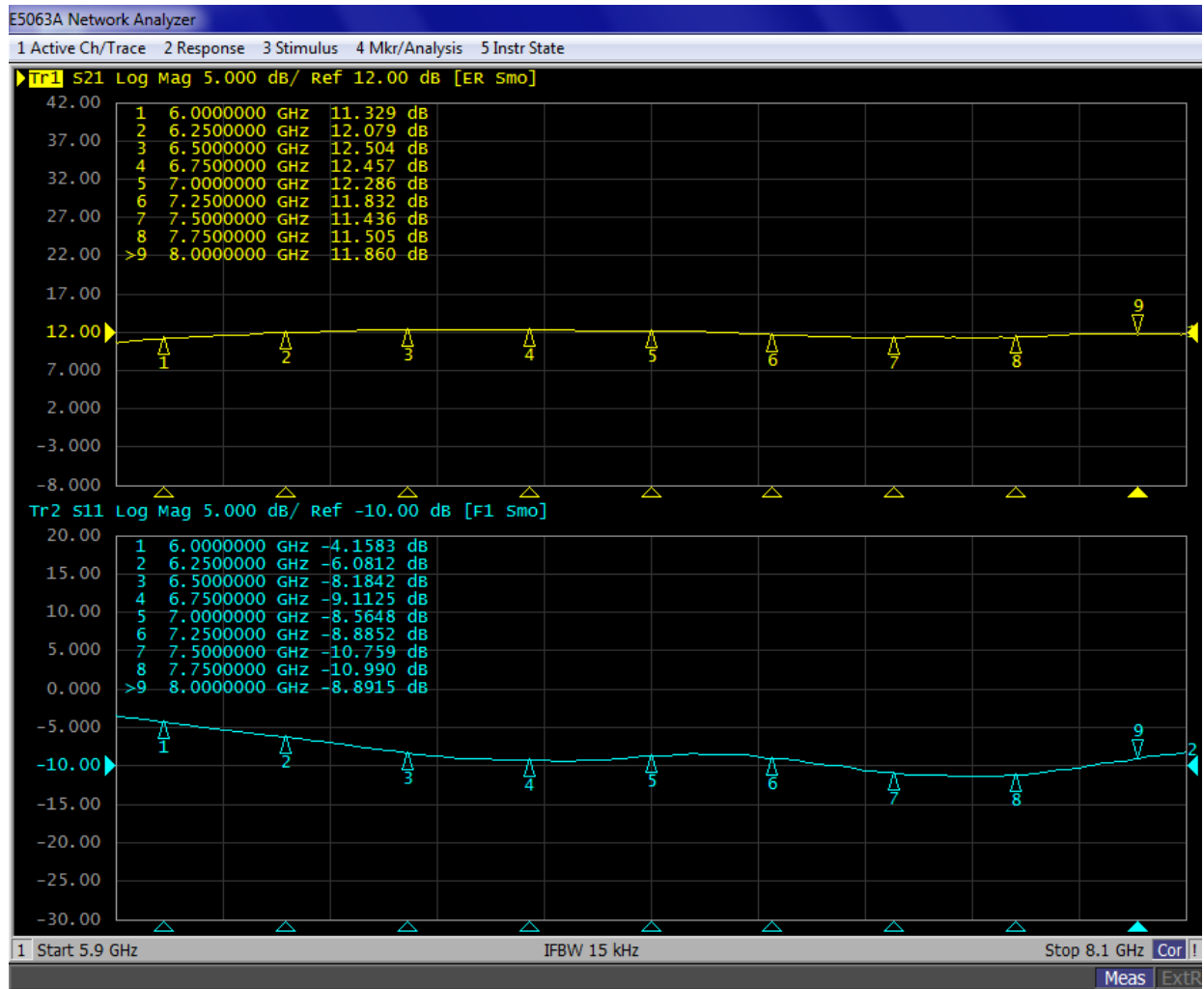
PARAMETER	UNIT	VALUE
Dimensions(L × W × H)	mm	20×40×6 (including device soldered)
Weight	g	50
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

Typical performance

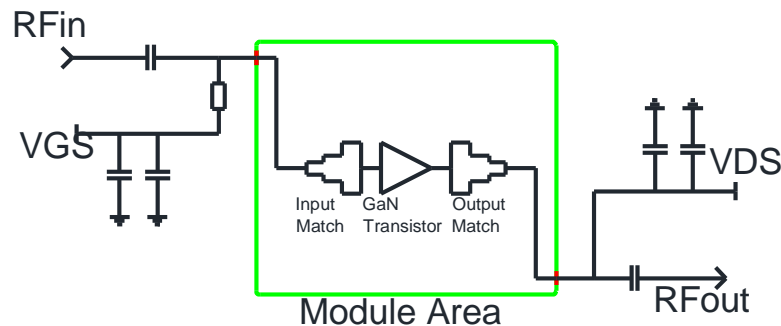
- CW performance: $V_{ds}=+28V$, $I_{DQ}=100mA$, $T=25^{\circ}C$

Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	Ids(A)	Gain(dB)	Eff(%)
6000	41.9	48.4	69.2	4.45	6.6	55.5
6100	42.0	49.0	78.5	5.07	7.0	55.3
6200	42.1	49.0	79.6	5.01	7.0	56.8
6300	41.8	49.0	78.5	4.95	7.2	56.7
6400	41.6	48.9	76.7	4.88	7.3	56.2
6500	42.0	48.8	75.3	4.81	6.8	55.9
6600	41.0	48.6	71.6	4.61	7.6	55.5
6700	41.0	48.5	70.8	4.81	7.5	52.6
6800	40.8	48.3	66.8	4.61	7.5	51.8
6900	40.5	48.4	69.2	4.85	7.9	50.9
7000	40.9	48.4	69.2	4.97	7.6	49.7
7100	41.4	48.2	65.3	4.83	6.8	48.3
7200	40.2	48.0	63.1	4.82	7.9	46.8
7300	40.5	48.0	63.1	4.88	7.6	46.2
7400	41.0	48.4	69.2	5.37	7.4	46.0
7500	40.4	48.6	71.6	5.50	8.2	46.5
7600	40.2	48.2	66.1	5.09	8.0	46.4
7700	41.3	48.3	67.6	5.54	7.0	43.6
7800	40.8	48.3	66.8	5.50	7.5	43.4
7900	41.4	48.6	72.4	5.60	7.2	46.2
8000	40.7	48.4	69.2	5.40	7.7	45.8

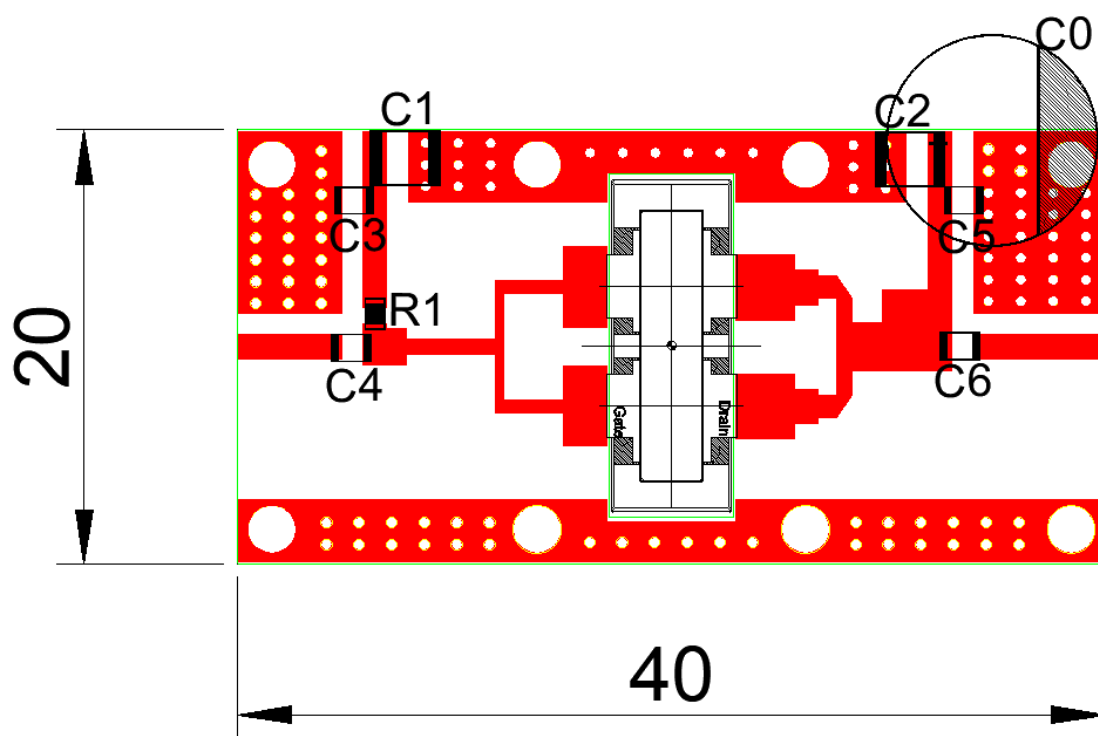
- S21/S11 from network analyzer VDS=28V VGS=-3.23V IDQ=400mA



Evaluation board Block Diagram



Evaluation board outline

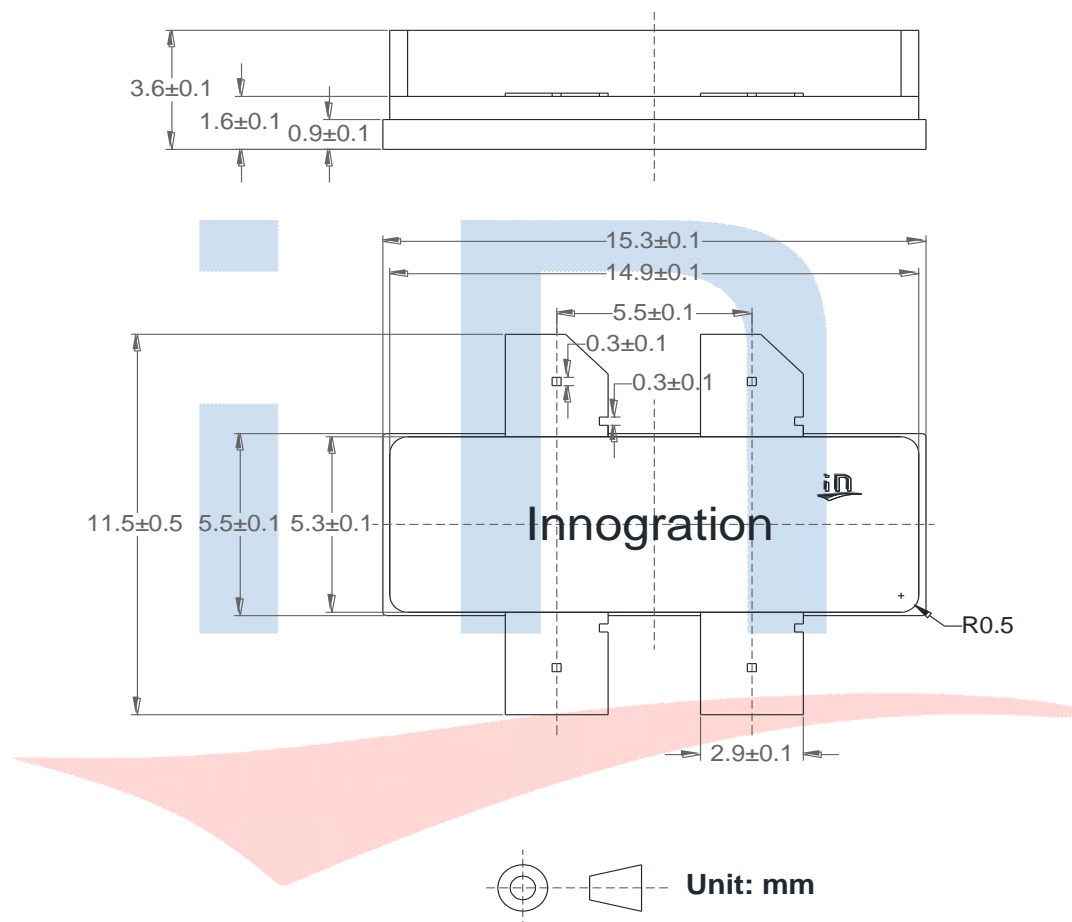


Component	Description	Suggestion
C0	470uF/63V	Electrolytic Capacitor
C1, C2	10uF	1210
C3, C4, C5, C6	2.4pF	Beijing YuanLu HongYuan Electronic Technology CO., LTD MQ200805
R1	Chip Resistor,10Ω	0603
PCB	Rogers TC350, thickness 20 mils, 1oz copper	

Transistor information: NL7507HS



Earless Flanged Ceramic Package; 4 leads





Revision History

Document revision history

Date	Revision	Datasheet Status
2023/4/6	Rev 1.0	Preliminary Datasheet
2023/11/15	Rev 1.1	Generate transistor information, datasheet combined
2024/12/25	Rev 2.0	Modify the input and output position to the middle of design

Application data based on RXT-23-10 (NL7507HS)/RXT-24-56



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