Product Features

6-8GHz(C band)

110W CW @28V

40% Drain Efficiency@28V

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

Linear or saturated use

Device used：NL7507HS*2

Recommended driver/pre-driver:

XMAH4080-31A2T/X2MAH5080-15

Applications

5G Power amplifier

C band Satcom

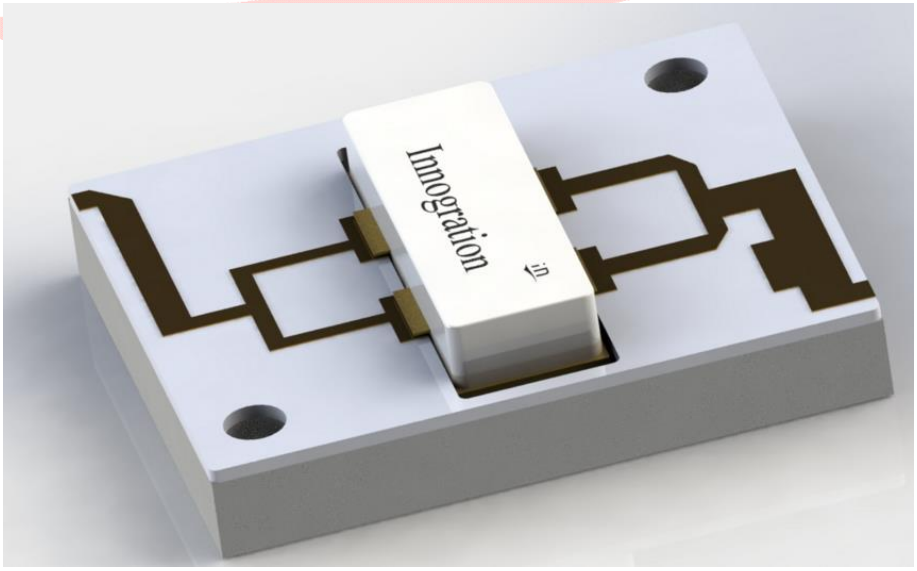
ISM

Point to point

Radio link

Description

The GMPA6080-100H 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 40*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℃, 50Ωsystem

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	6000	-	8000	fo
Operating Bandwidth	MHz	2000		-	OBW
Pulse CW Output Power	W		100	-	Pout
Power Gain	dB		7	-	G_P
Gain Flatness	dB	-	±0.6	-	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

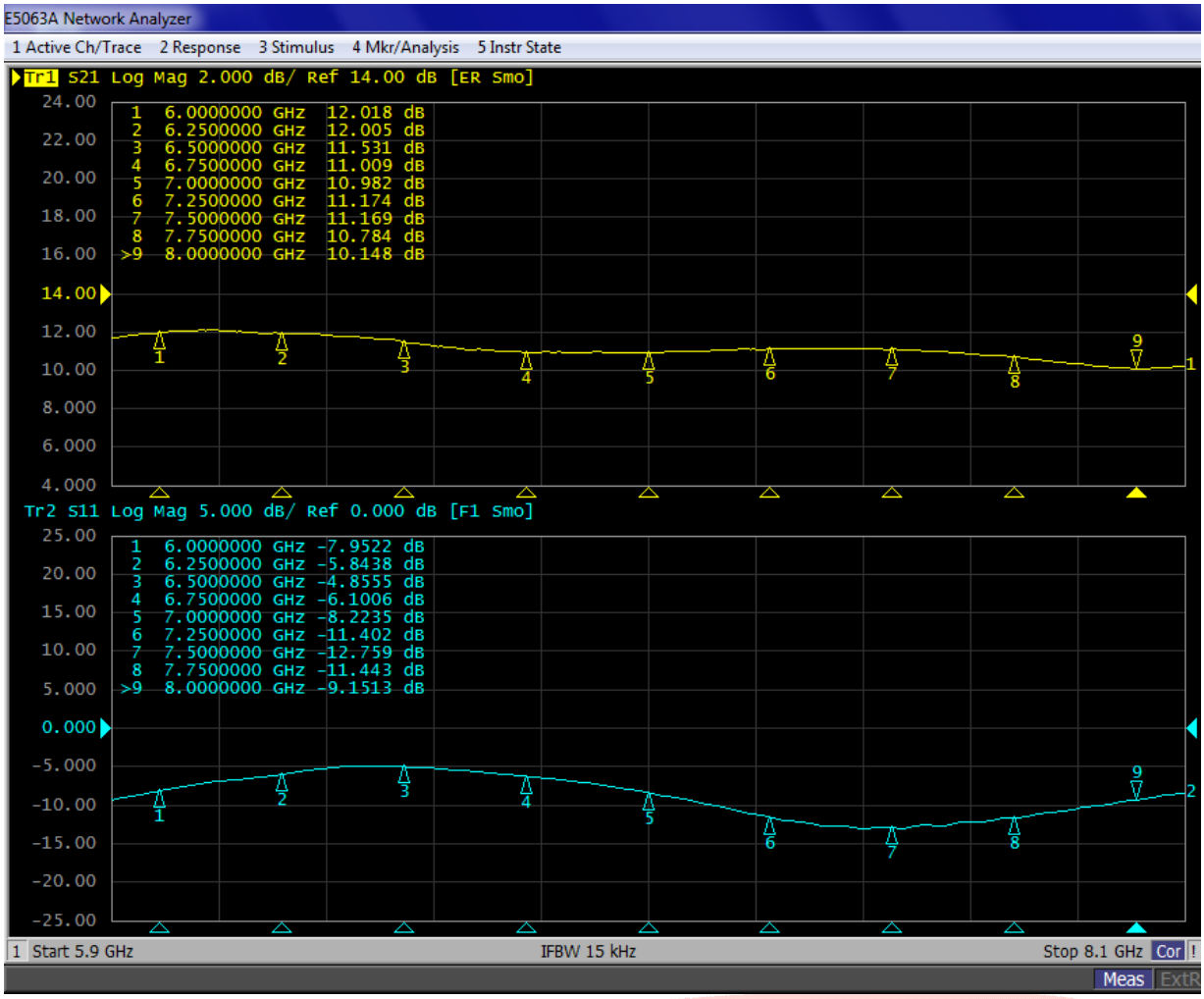
PARAMETER	UNIT	VALUE
Dimensions(L × W × H)	mm	40×40×6 （including device soldered）
Weight	g	100
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

Typical performance

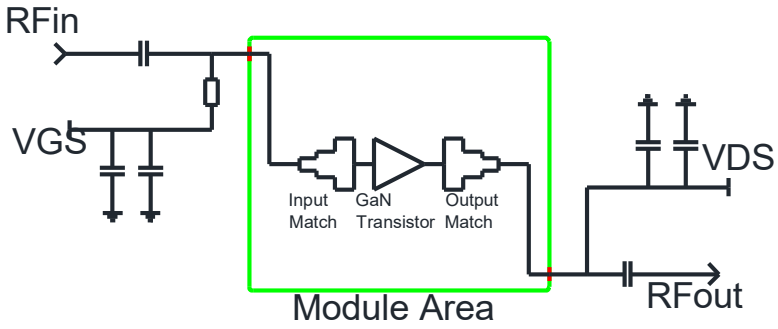
- CW performance: Vds=+28V, IDQ=100mA, T=25℃

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	Ids(A)	Gain(dB)	Eff(%)
6000	43.50	50.75	118.9	8.27	7.3	51.3
6100	43.50	50.45	110.9	7.92	7.0	50.0
6200	43.50	50.47	111.4	8.33	7.0	47.8
6300	43.50	50.75	118.9	8.82	7.3	48.1
6400	43.50	50.85	121.6	8.95	7.4	48.5
6500	43.50	51.00	125.9	9.25	7.5	48.6
6600	43.50	51.20	131.8	9.34	7.7	50.4
6700	43.50	51.44	139.3	10.27	7.9	48.4
6800	43.50	51.65	146.2	10.87	8.2	48.0
6900	43.50	51.70	147.9	11.06	8.2	47.8
7000	43.50	51.60	144.5	10.93	8.1	47.2
7100	43.50	51.85	153.1	11.00	8.3	49.7
7200	43.50	51.80	151.4	11.00	8.3	49.1
7300	43.50	51.70	147.9	10.90	8.2	48.5
7400	43.50	51.65	146.2	10.95	8.2	47.7
7500	43.50	51.45	139.6	11.00	8.0	45.3
7600	43.50	50.95	124.5	10.75	7.5	41.3
7700	43.50	50.80	120.2	10.46	7.3	41.0
7800	43.50	50.80	120.2	10.60	7.3	40.5
7900	43.50	50.90	123.0	11.25	7.4	39.1
8000	43.50	50.90	123.0	11.20	7.4	39.2

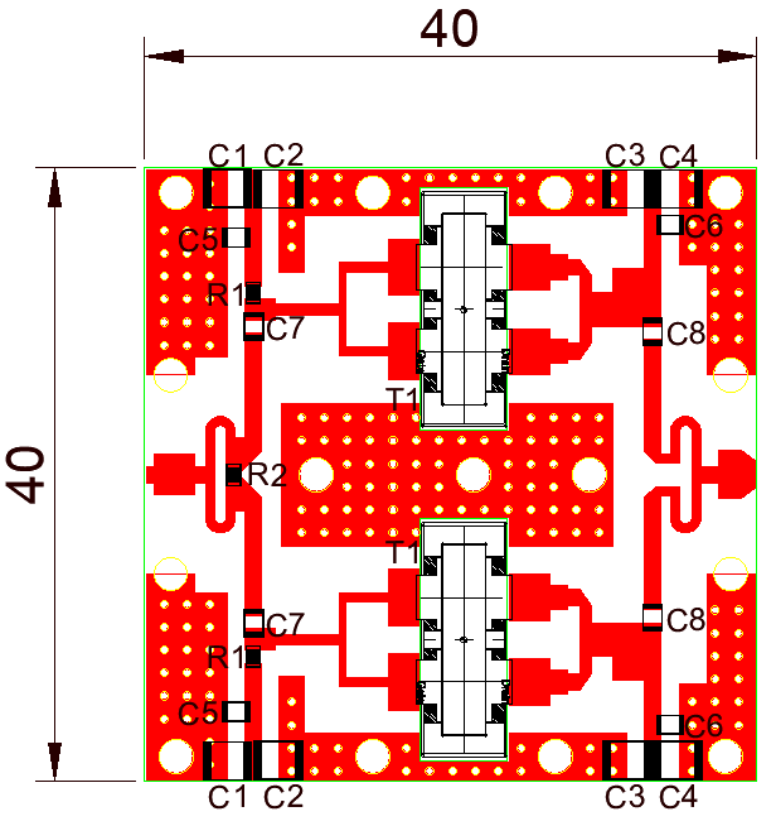
- **S21/S11 from network analyzer VDS=28V VGS=-3.23V IDQ=800mA**



Evaluation board Block Diagram

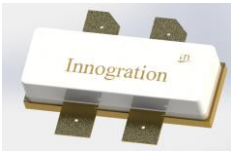


Evaluation board outline



Reference Designator	Description	Quantity	Suggestion
C1, C2, C3, C4	10uF/200V, 1210	8	
C5, C6, C7, C8	2.4 pF, 0603/0805	8	Beijing YuanLu HongYuan Electronic Technology CO., LTD
R1	10 Ω, 0603/0805	2	Murata
R2	100 Ω, 0603/0805	1	
T1	NL7507HS	2	Innogration
PCB	Rogers TC350, 20mil		-

Transistor information：NL7507HS



Earless Flanged Ceramic Package; 4 leads

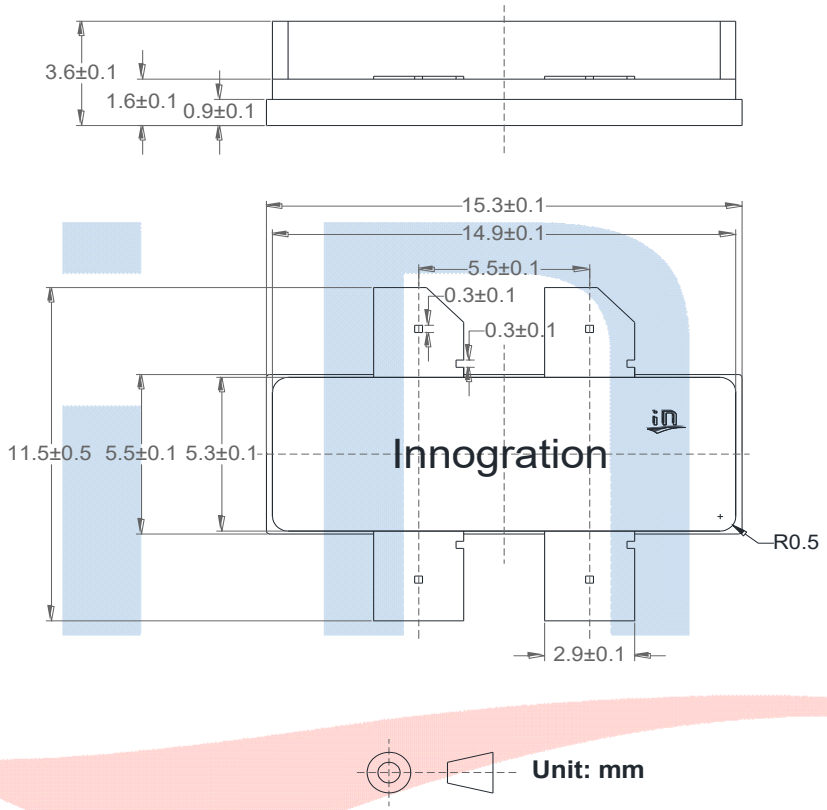
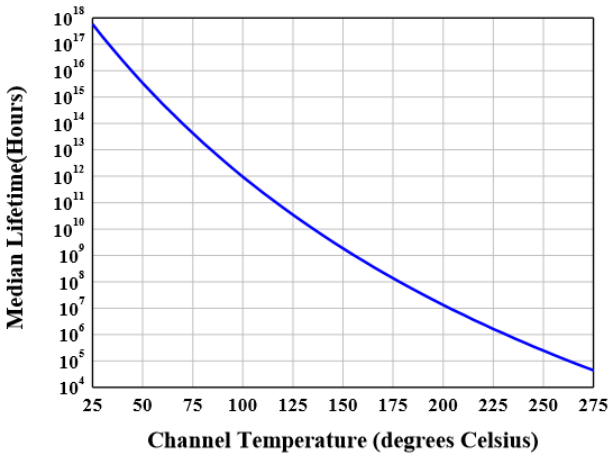


Figure 2: Median Lifetime vs. Channel Temperature of NL7507HS



Revision History

Document revision history

Date	Revision	Datasheet Status
2025/6/20	Rev 1.0	Preliminary Datasheet
2026/4/1	Rev 2.0	Performance optimized to be more marginal over 100W

Application data based on RXT-25-21/26-08

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