

# GaN Power Amp Pallet

# SMPA5258-170V

## Product Features

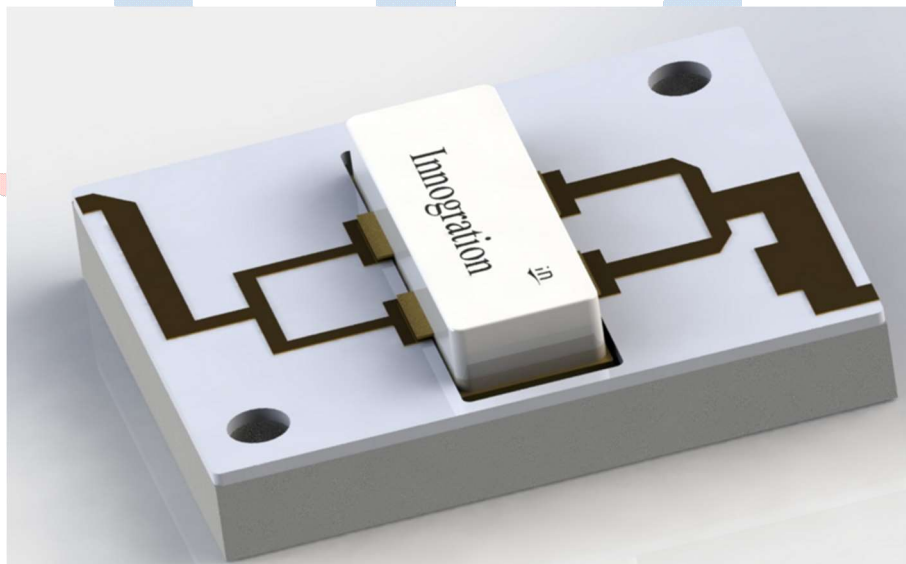
- 5.2-5.8GHz(C band)
- 170W(min) pulse CW
- 54% Drain Efficiency@50V
- 50ohm in and out, 20\*24mm, screw down

## Applications

- 5G Power amplifier
- C band communication
- ISM
- Pulsed or CW power amplifier

## Description

The SMPA5258-170V is designed for 5G communication, test and measurement and other ISM applications at 5200-5800MHz. This Amplifier pallet is suitable for use in linear and saturated applications. Featured by its tiny size 20\*24mm, 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=50V, T=25°C, 50Ωsystem**

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	MHz	5200	-	5800	fo
Operating Bandwidth	MHz	600		-	OBW
Pulse CW Output Power	W	170	180	-	Pout
Power Gain	dB		9	-	Gp
Gain Flatness	dB	-	-	±0.75	Gf
Input Return Loss	dB	-	-	-10	S11
Operating Voltage	V	-	50	60	VDS
Quiescent Current	mA	-	50	-	IdQ
Efficiency@P <sub>sat</sub>	%	50	55	-	Eff

**Environmental Characteristics**

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Case Temperature	°C	0	-	60	Ta
Storage Temperature	°C	-40		100	Tstg
Relative humidity w/o condensation	%	-	-	95	RH

**Mechanical Specifications**

PARAMETER	UNIT	VALUE
Dimensions(L × W × H)	mm	20×24×4
Weight	g	50
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

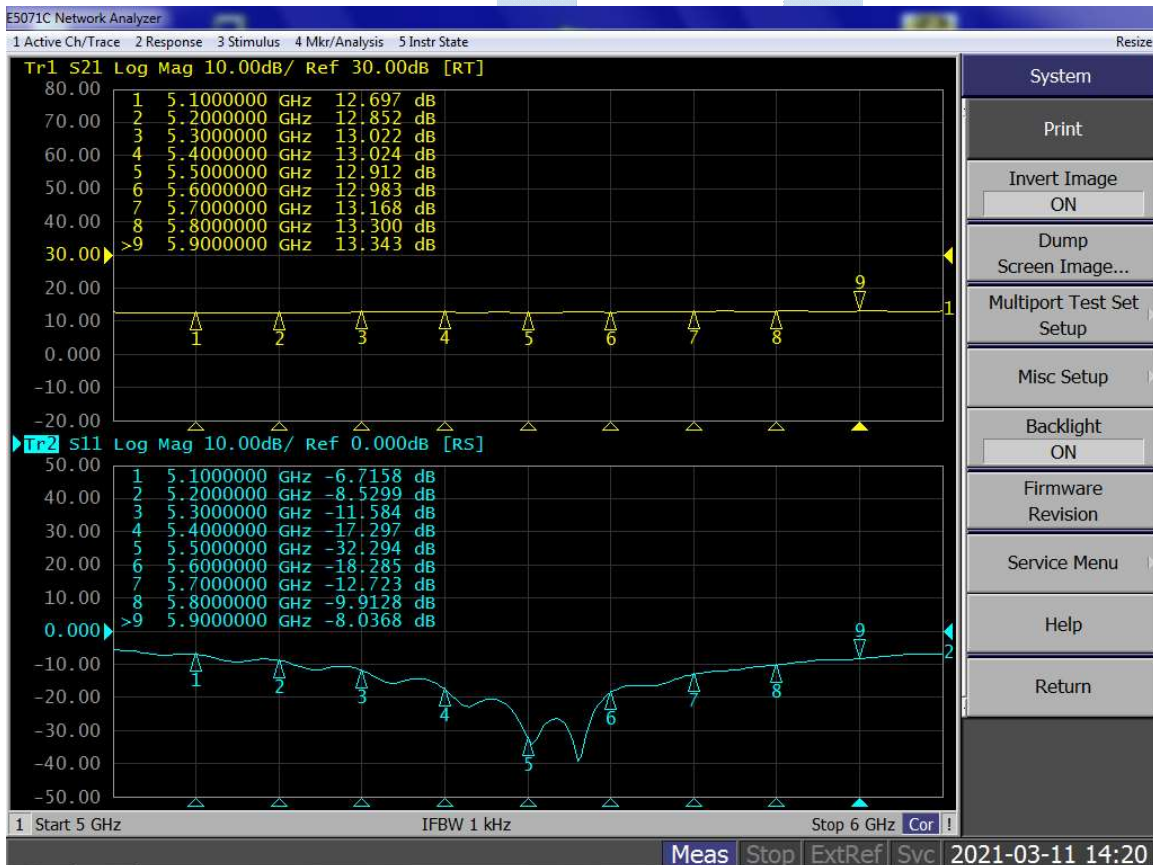


## Typical performance

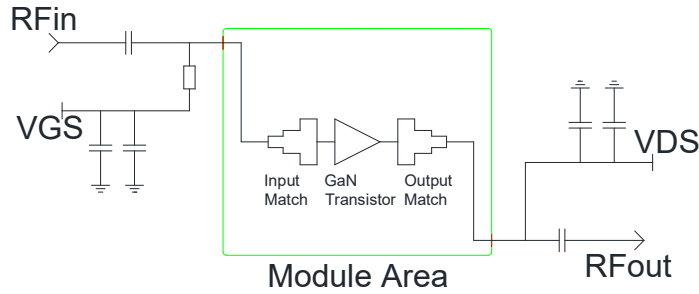
- Pulsed CW performance: VDS=50V VGS=-3.08V IDQ=100mA, Pulse: 100uS width, 10%;

Freq (MHz)	P1dB (dBm)	P1dB (W)	P1dB Eff(%)	P1dB Gain(dB)	P3dB (dBm)	P3dB (W)	P3dB Eff(%)
5100	51.18	131.3	51.0	11.39	52.5	177.8	52.9
5200	51.68	147.1	52.4	11.71	53.08	203.4	56.4
5300	51.77	150.2	53.2	12.27	53.25	211.4	57.8
5400	51.61	145.0	50.4	12.59	53.24	211.0	55.7
5500	51.49	141.0	47.2	12.7	53.43	220.3	54.2
5600	51.66	146.6	47.7	12.5	53.61	229.7	54.7
5700	51.66	146.7	49.1	12.61	53.34	215.7	54.7
5800	51.43	139.0	50.1	12.45	52.97	198.1	54.7
5900	50.89	122.7	49.7	12.32	52.43	175.0	54.1

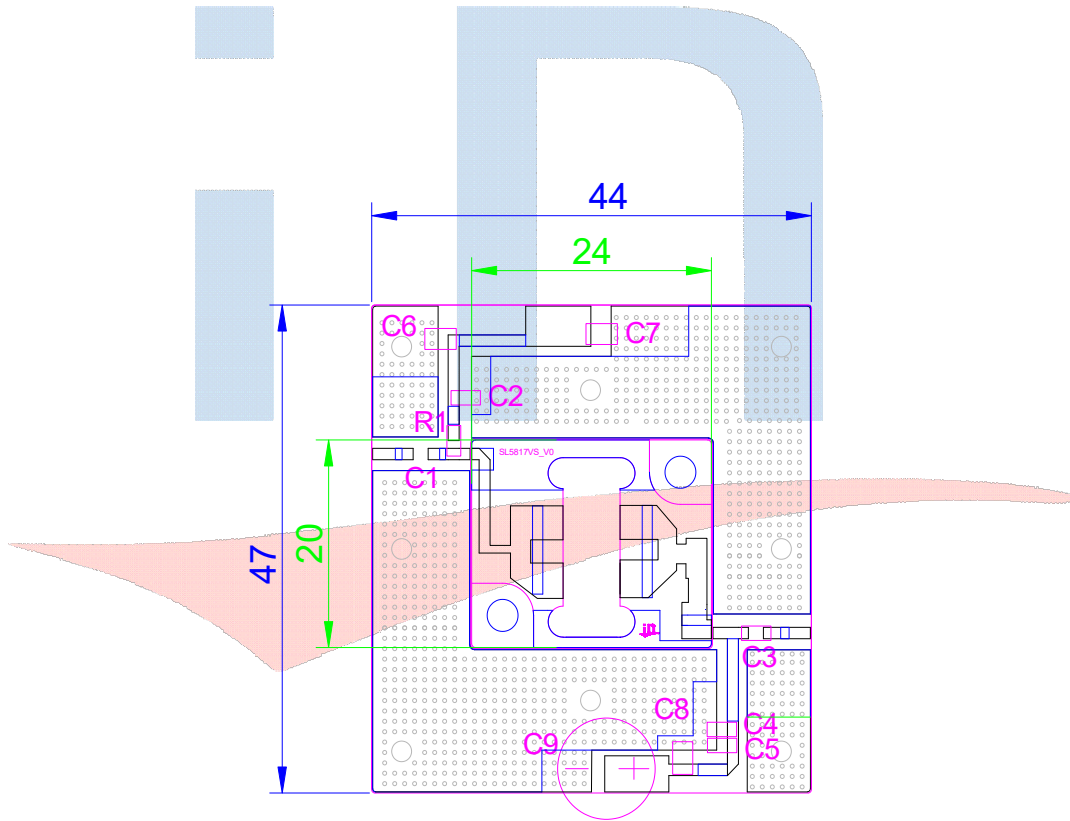
- S21/S11 from network analyzer VDS=50V VGS=-3.02V IDQ=250mA



Evaluation board Block Diagram



Evaluation board outline (DUT:SL5817VS)



Component	Description	Suggested Manufacturer
C1、 C2、 C3、 C4	3.3pF	DLC75D
C5、	100pF	DLC75D
C6、 C7、 C8	Ceramic multilayer capacitor, 10uF, 100V	10uF/100V
C9	470UF	63V/470UF
R1	Chip Resistor, 11 Ω ,0603	
PCB	0.508mm [0.020"] thick, εr=3.5, RF-35TC-A, Taconic	



**Revision History**

Document revision history

Date	Revision	Datasheet Status
2020/3/12	Rev 1.0	Preliminary Datasheet

Application data based on YHG-21-05



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