

Product Features

4.4-5GHz(C band)

210W(min) pulse CW

55% Drain Efficiency@50V

50ohm in and out, 20*24mm, screw down

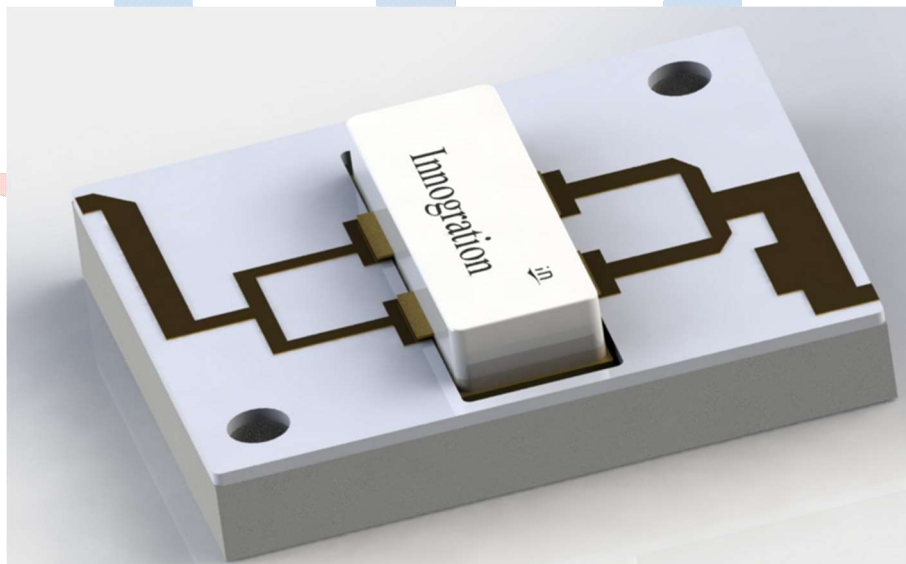
Applications

5G Power amplifier

C band communication

Description

The SMPA4450-200V is designed for 5G and communication, test and measurement at 4400-5000MHz. 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	4400	-	5000	fo
Operating Bandwidth	MHz	-	600	-	OBW
Pulse CW Output Power	W	210	240	-	Pout
Power Gain	dB		13	-	Gp
Gain Flatness	dB	-	-	±0.75	Gf
Input Return Loss	dB	-	-	-10	S11
Operating Voltage	V	-	50	-	VDS
Quiescent Current	mA	-	100	-	IdQ
Efficiency@210W Psat	%		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

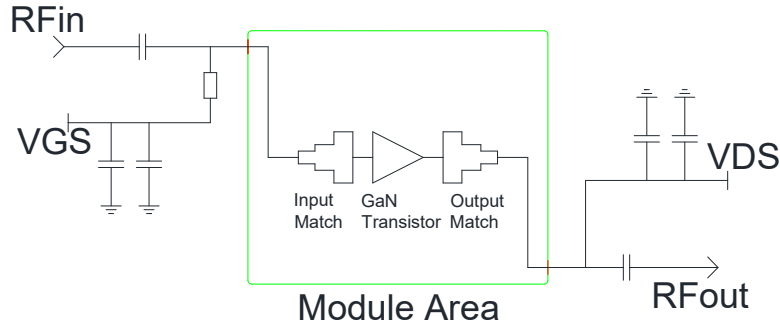
Test Condition: $V_{ds}=+50V$, $I_{DQ}=100mA$, $T=25^{\circ}C$, pulse width 100us, duty cycle 10%,

Freq(MHz)	P_1dB(dBm)	P_1dB(W)	P_1dBEff(%)	Gain(p_1dB)	P_3dB(dBm)	P_3dB(W)	P_3dB Eff(%)
4400	51.81	151.73	56.15	15.73	53.37	217.32	60.96
4500	52.68	185.21	56.13	14.52	53.83	241.5	59.12
4600	52.82	191.29	52.36	14.66	54.08	255.96	56.48
4700	52.77	189.11	50.26	14.79	54.19	262.47	55.15
4800	52.98	198.41	52.09	15.02	54.2	262.82	56.37
4900	52.69	185.58	53.48	15.39	53.87	243.6	57.22
5000	52.23	167.15	55.38	16.16	53.33	215.14	58.99

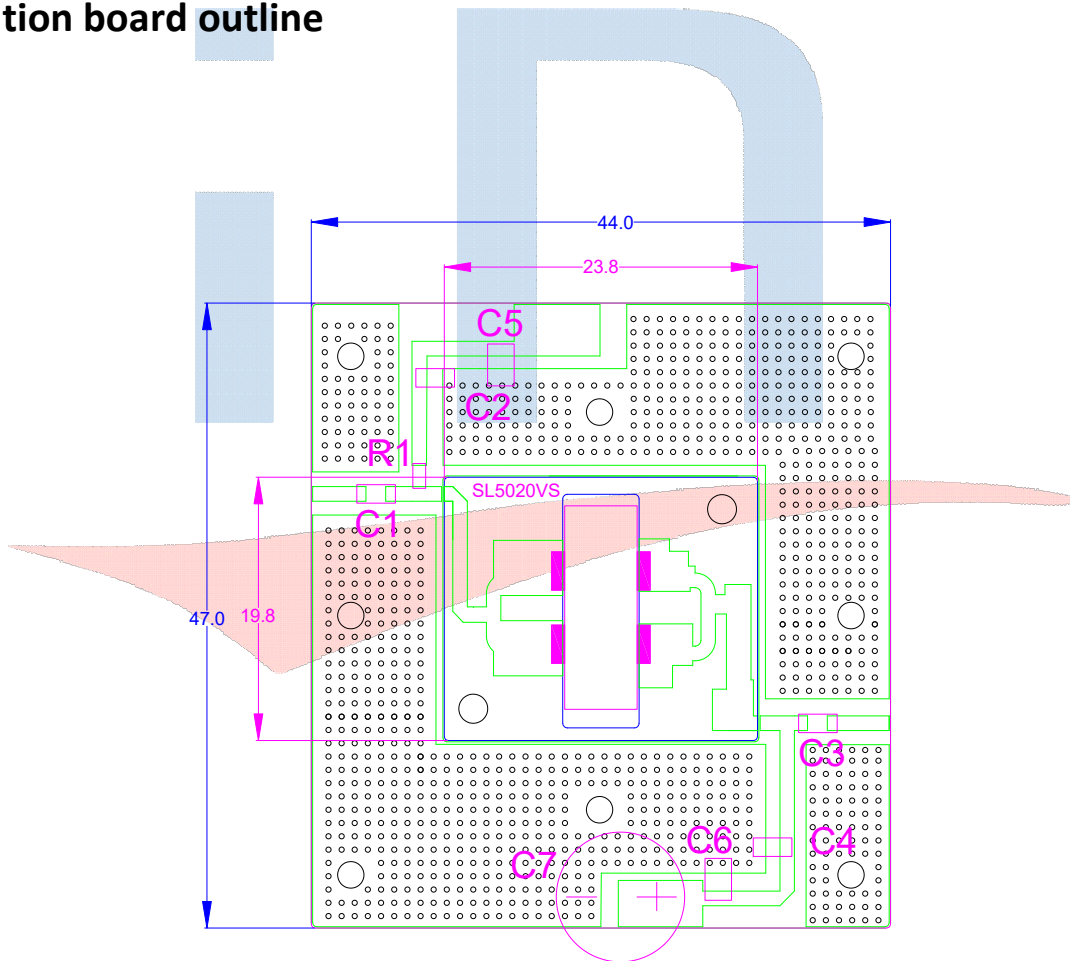
● S21/S11 from network analyzer VDS=50V VGS=-2.97V IDQ=200mA



Evaluation board Block Diagram



Evaluation board outline





Revision History

Document revision history

Date	Revision	Datasheet Status
2020/6/23	Rev 1.0	Preliminary Datasheet

Application data based on YHG-20-15



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