

# GaN Power Amp Pallet

# SMPA6064-160V

## Product Features

6-6.4GHz(C band)

160W(min) pulse CW

48% Drain Efficiency@50V

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

## Applications

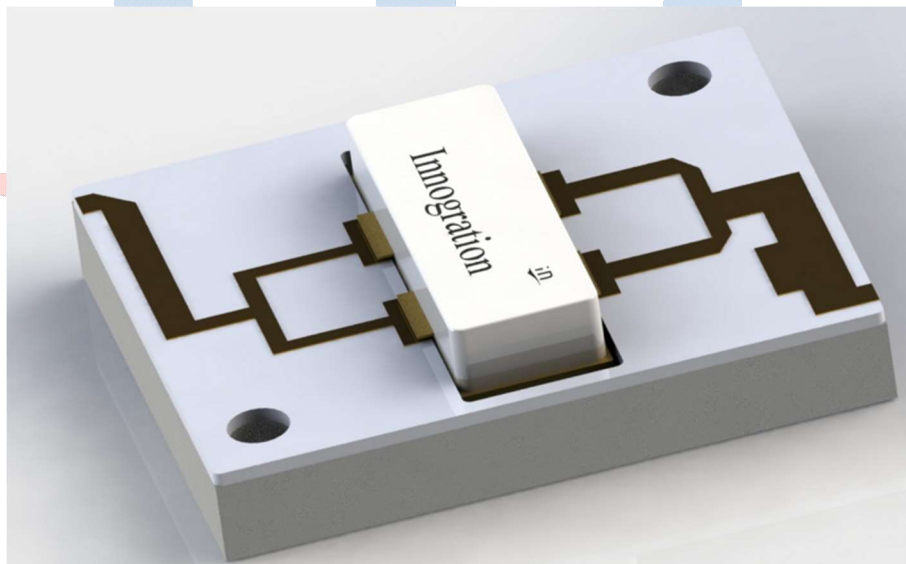
5G Power amplifier

C band communication

ISM

## Description

The SMPA6064-160V is designed for 5G communication, test and measurement and other ISM applications at 6000-6400MHz. 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	6000	-	6400	fo
Operating Bandwidth	MHz	400		-	OBW
Pulse CW Output Power	W	160	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@Psat	%	45	48	-	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



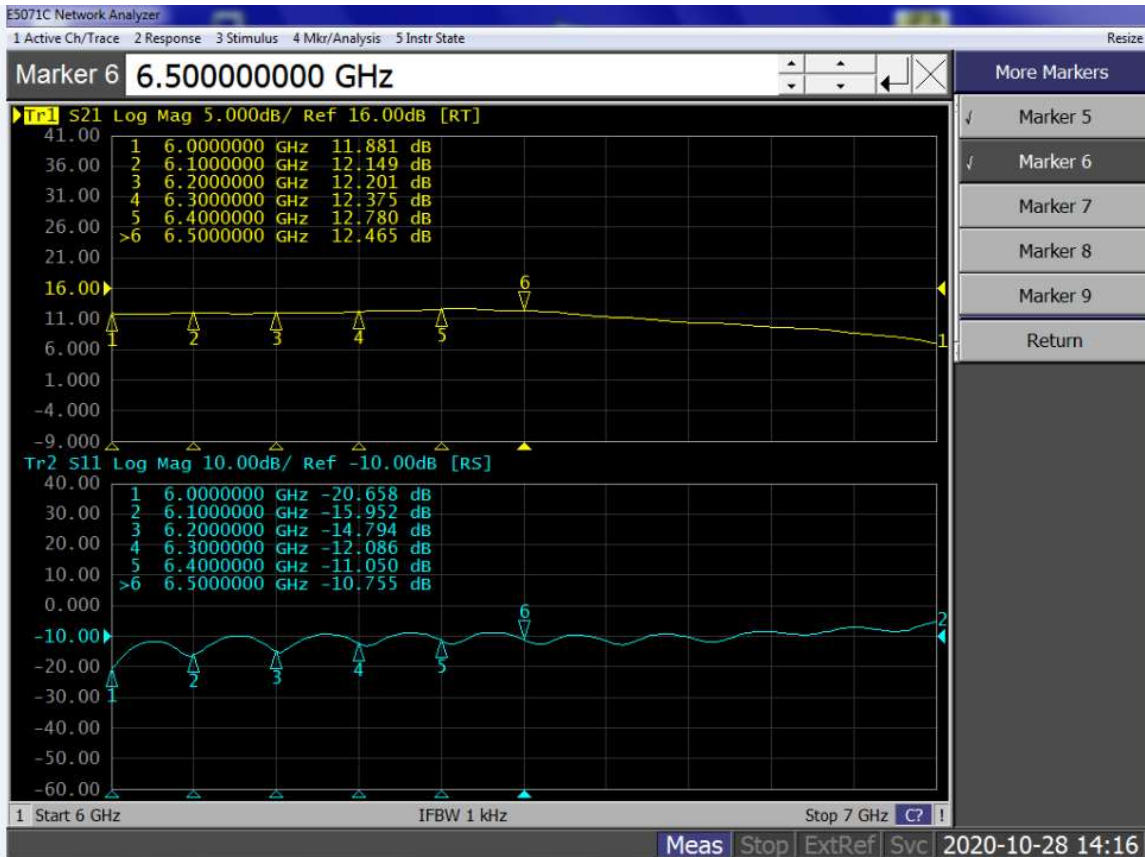
Typical performance

● Pulsed CW performance

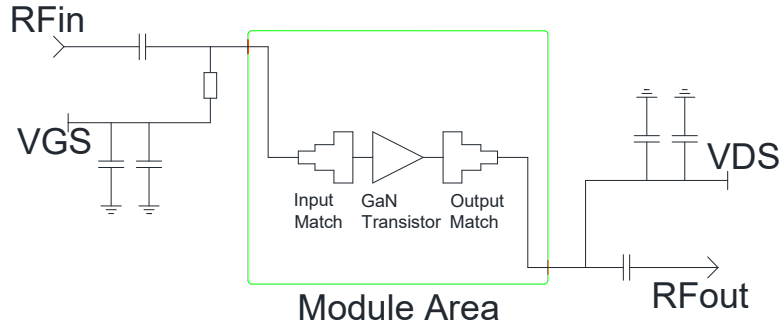
Test Condition: Vds=+50V, IDQ=50mA, T=25°C, pulse width 100us, duty cycle 10%,

Freq(MHz)	Pin(dBm)	Psat(dBm)	Psat(W)	IDS(A)	Gain(dB)	Eff(%)
6000	42.55	53.37	217	0.885	10.82	49
6100	42.76	53.23	210	0.836	10.47	50
6200	42.63	53.06	202	0.813	10.43	50
6300	43.95	53.18	208	0.848	9.23	49
6390	43.68	52.82	191	0.793	9.14	48
6400	43.6	52.72	187	0.78	9.12	48

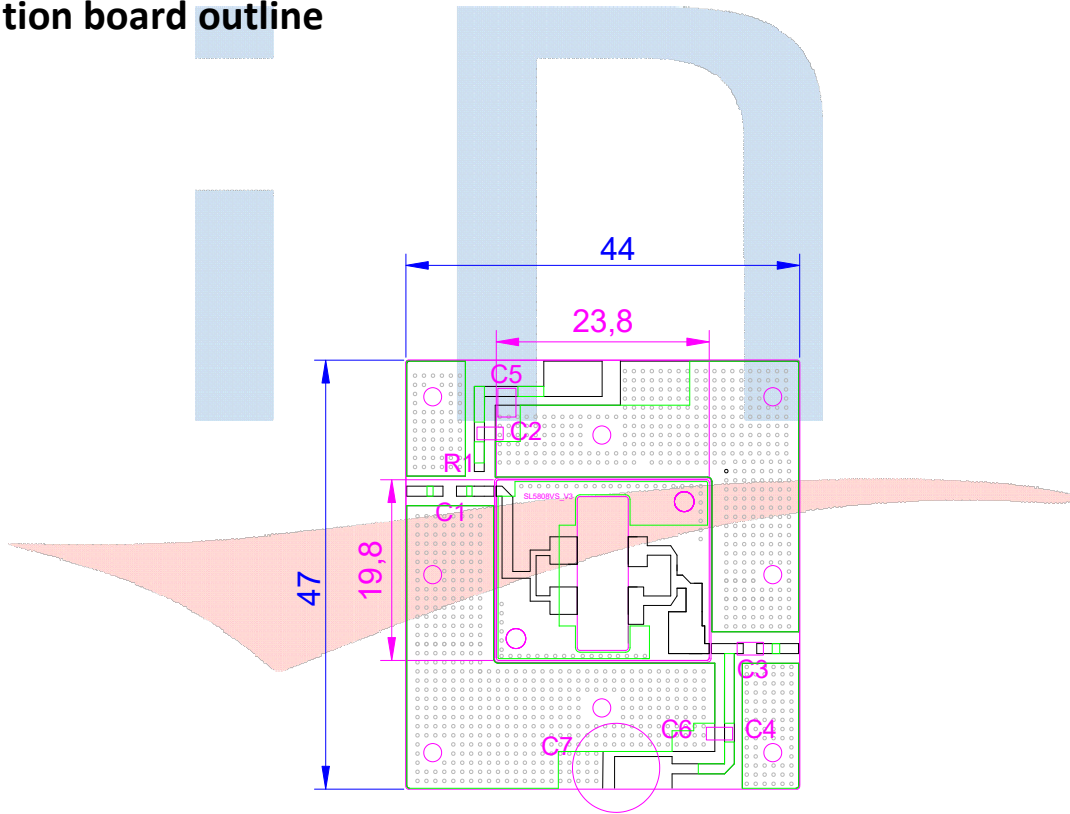
● S21/S11 from network analyzer VDS=50V VGS=-3.23V IDQ=220mA



Evaluation board Block Diagram



Evaluation board outline



Component	Description	Suggested Manufacturer
C1、C2、C4	2pF	DLC75D
C3	2.4pF	DLC75D
C5、C6	Ceramic multilayer capacitor, 10uF, 100V	10uF/100V
C7	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
2020/11/2	Rev 1.0	Preliminary Datasheet

Application data based on YHG-20-28



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