LDMOS 2 stages Power Amp Pallet I2MPA0510-50H

Product Features

500-1000MHz(UHF)

50W CW @28V, 40W CW@24V

>40% Drain Efficiency@28V

>27dB power gain

50ohm in and out, 45*60mm, screw down

Linear or saturated use

Device used：ITGV10020P3/ITEH16030P6*2

Applications

VHF/UHF Power amplifier

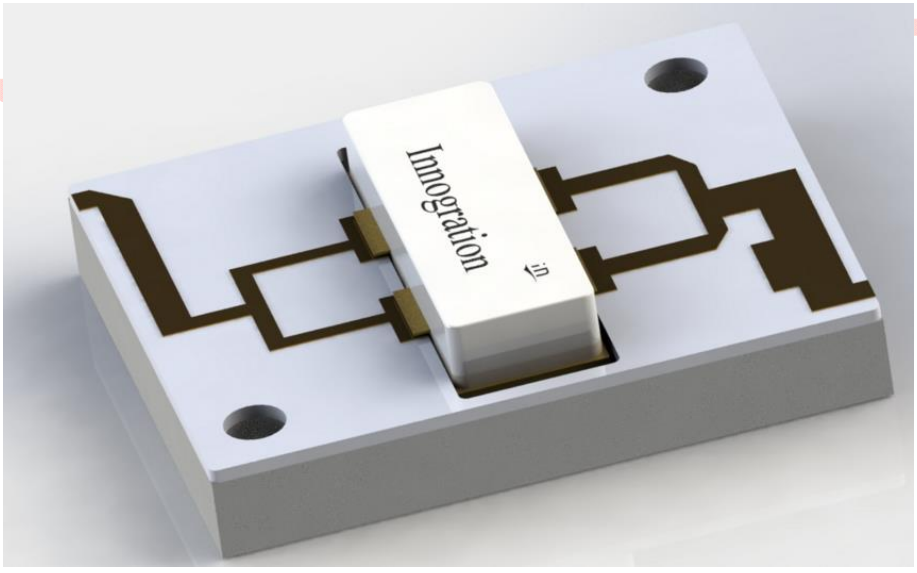
UAV Jammer

ISM

Land Mobile

Description

The I2MPA0510-50H is designed for UHF comm, test and measurement and other ISM applications at 500-1000MHz. This Amplifier pallet is suitable for use in linear and saturated applications. Featured by its tiny size 45*60mm, 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	500	-	1000	fo
Operating Bandwidth	MHz		500	-	OBW
CW Output Power	W	50		-	Pout
Power Gain	dB	27		-30	G_P
Gain Flatness	dB	-	±1	-	G_F
Input Return Loss	dB	-	-	-10	S_{11}
Operating Voltage	V	-	28		V_{DS}
Quiescent Current	mA	-	100/300	-	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

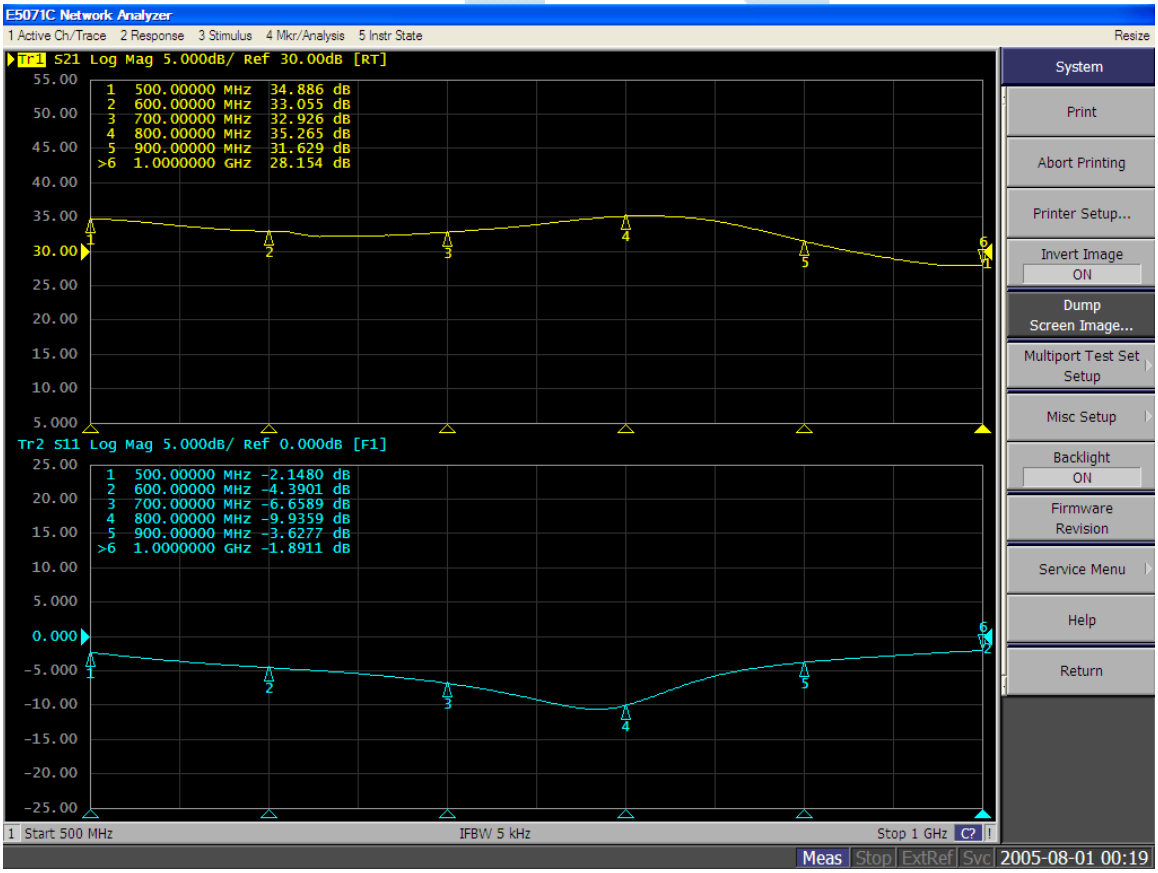
PARAMETER	UNIT	VALUE
Dimensions(L × W)	mm	45×60
Weight	g	250
RF Input Connector	-	N/A
RF Output Connector	-	N/A
Cooling	-	External Heat-sink

Typical performance

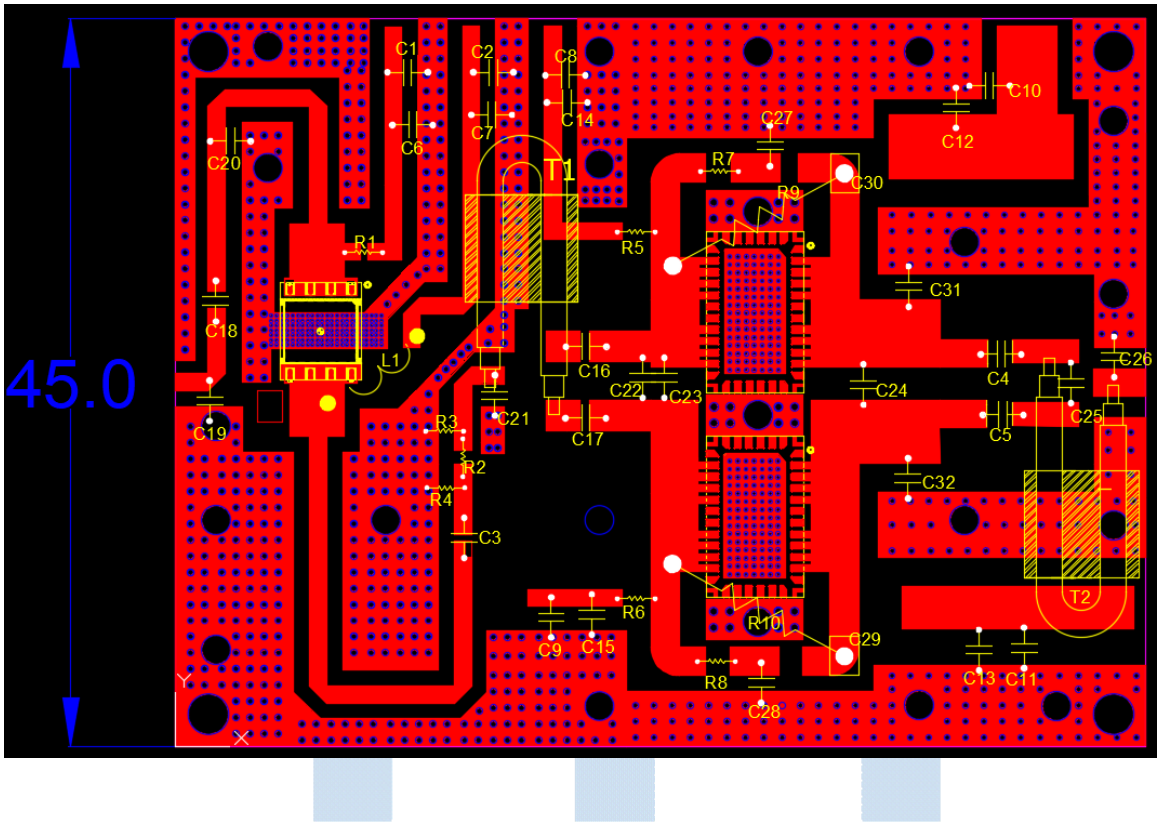
- CW performance: Vds=+28V, IDQ=100mA+150 mA *2, T=25℃

Freq(MHz)	Pout(dBm)	Pout(W)	IDS(A)	Pin(dBm)	Gain(dB)	Eff(%)
500	47.21	52.60	3.41	15.64	31.57	55.09
600	47.22	52.72	3.28	17.57	29.65	57.41
700	47.39	54.83	3.81	17.94	29.45	51.39
800	48.39	69.02	4.68	18.36	30.03	52.67
900	47.20	52.48	4.56	18.83	28.37	41.10
1000	47.38	54.70	4.60	19.92	27.46	42.47

- S21/S11 from network analyzer Vds=28V IDQ=180mA+250mA*2



Evaluation board outline



Component	Description	Component
C1~C5	1uF 0805	
C6,C7	1nF 0805	
C8~C11	10uF 1210	
C12,C13	10nF 1812	
C14,C15	47pF MQ300805	
C16,C17,C18	15pF MQ300805	
C19	0.8pF MQ301111	
C20,C22	6.8pF MQ301111	
C21,C31,C32	3pF MQ301111	
C23	8.2pF MQ301111	

C24	1pF MQ301111	
C25	4.7pF MQ301111	
C26	1.2pF MQ301111	
C27,C28	470pF MQ301111	
C29,C30	220pF MQ301111	
R1	10Ω Chip Resistor 0805	
R2,R7,R8	10Ω Chip Resistor 1206	
R3,R4	200Ω Chip Resistor 1206	
R5,R6	51Ω Chip Resistor 1206	
R9,R10	680Ω Pulg-in Resistor	
L1	Φ 0.8mm 0.5 turns BN-61-2402	DIY
T1	50ohm 50mm (RFSFBU-047-50)	/
T2	50ohm 45mm (RFSFBU-047-50)	/
PCB	20mil Rogers 4350B	

Revision History

Document revision history

Date	Revision	Datasheet Status
2025/8/20	**Rev 1.0**	**Preliminary Datasheet**

Application data based on HL-25-28

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