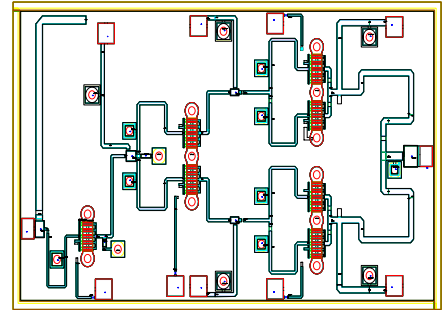


## Features:

- Frequency Range: 12-16 GHz
- P1dB: +31 dBm
- Gain: 26 dB
- Bias Condition: 8V, 560 mA
- MTTF > 100 years @ 85°C ambient temperature
- Chip Size: 2.57 X 1.50 X 0.10 mm



## Applications:

- VSAT Power Amplifier
- Point-to-Point Radio

## Description:

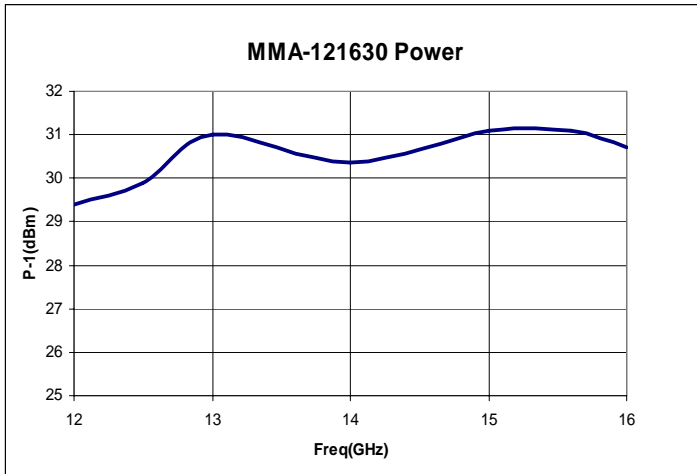
The MMA-121630 is a 12-16 GHz GaAs MMIC amplifier. Small signal gain is typically 26.0 dB across band. It typically provides 31 dBm power at P-1dB. This part can be used in VSAT, point to point, and defense applications, Hi-rel and space screening is available.

## Electrical Specifications: (Vds = 8.0V, Vgs = -0.65V, Ids=560mA, Zo=50 ohm, TA=25 °C )

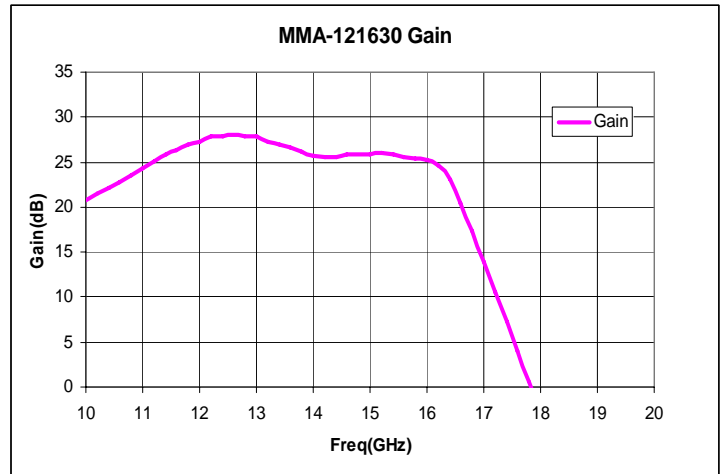
Parameter	Units	Min.	Typ.	Max.
Frequency Range (Min/Max)	GHz	12		16
Small Signal Gain	dB	24	26	
Gain Flatness	+/-dB		2.0	
Input Return Loss	dB		-7	
Output Return Loss	dB		-8	
Output P1dB	dBm	+29.0	+31.0	
Output Saturation Power	dBm		+32.0	
Noise Figure	dB		5.5	6.5
Operating Current Range (Min/Max)	mA	500	560	650
Thermal Resistance	°C/W		12	

**Typical RF Performance:** ( $V_{ds} = 8.0V$ ,  $I_{ds}=560mA$ ,  $T_A=25^\circ C$ , 50 Ohm system unless stated otherwise)

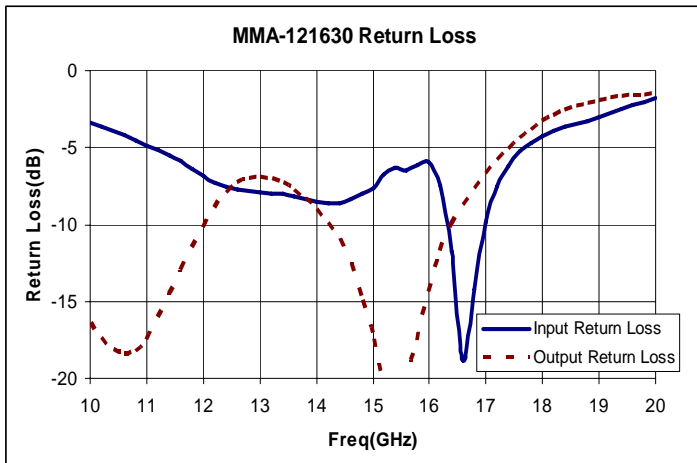
### Output Power



### Gain



### Input and Output Return Loss



**S-parameter:** ( $V_{ds} = 8.0V$ ,  $I_{ds}=560mA$ ,  $T_A=25\text{ }^\circ C$ , 50 Ohm system)

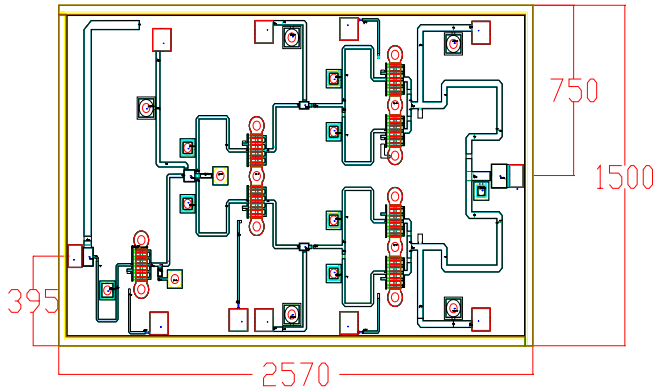
Freq(GHz)	magS11	angS11	magS21	angS21	magS12	angS12	magS22	angS22
10.0	0.68	94.9	11.0	24.4	0.0034	-10.9	0.15	-119.0
10.5	0.63	47.4	13.2	-33.8	0.0031	-41.2	0.12	159.0
11.0	0.57	-2.0	16.4	-95.5	0.0031	-75.3	0.13	76.2
11.5	0.52	-52.7	20.2	-163.0	0.0027	-109.0	0.21	-3.2
12.0	0.45	-101.0	23.3	125.0	0.0018	-112.0	0.31	-68.7
12.5	0.41	-144.0	25.4	47.2	0.0015	-149.0	0.42	-133.0
13.0	0.40	173.0	24.5	-29.3	0.0014	-161.0	0.45	163.0
13.5	0.40	124.0	21.2	-100.0	0.0005	176.0	0.42	97.1
14.0	0.37	67.1	19.3	-169.0	0.0007	-117.0	0.36	29.0
14.5	0.37	-1.0	19.1	122.0	0.0019	-110.0	0.26	-44.5
15.0	0.42	-76.0	19.6	44.5	0.0020	-156.0	0.14	-120.0
15.5	0.48	-151.0	19.5	-40.9	0.0035	153.0	0.07	22.4
16.0	0.50	144.0	18.3	-133.0	0.0008	179.0	0.19	-61.6
16.5	0.17	82.0	12.3	114.0	0.0017	168.0	0.34	-111.0
17.0	0.32	122.0	5.0	17.7	0.0032	148.0	0.46	-156.0
17.5	0.52	63.9	1.9	-60.5	0.0040	110.0	0.58	157.0
18.0	0.62	5.3	0.8	-130.0	0.0037	72.0	0.68	111.0
18.5	0.66	-53.2	0.3	163.0	0.0023	65.7	0.76	65.4
19.0	0.71	-109.0	0.1	102.0	0.0031	57.5	0.80	18.5
19.5	0.76	-160.0	0.0	53.6	0.0024	39.5	0.83	-29.2
20.0	0.81	154.0	0.0	18.8	0.0036	69.4	0.84	-75.0

**Absolute Maximum Ratings (\*):**

SYMBOL	PARAMETER	UNITS	ABSOLUTE MAXIMUM
Vds	Drain-Source Voltage	V	9.0
Vgs	Gate-Source Voltage	V	-2.0 to +0.8
I <sub>ds</sub>	Drain Current	mA	700
I <sub>gs</sub>	Gate Current	mA	10.0
P <sub>diss</sub>	DC Power Dissipation	W	6.3
P <sub>in max</sub>	RF Input Power	dBm	+20
T <sub>ch</sub>	Channel Temperature	°C	150
T <sub>stg</sub>	Storage Temperature	°C	-60 to 150

(\*) Operation of this device above any one of these parameters may cause permanent damage.

**Mechanical Diagram:**



**Application Information:**

