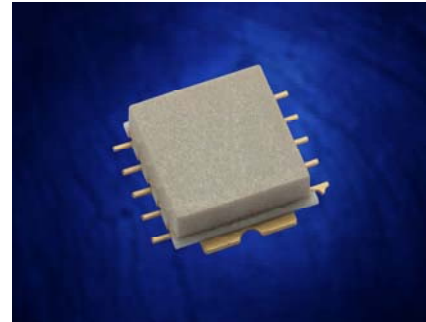


Features:

- **Frequency Range: 12-16 GHz**
- **Excellent RF Performance:**
 - 31 dBm P1dB
 - 26.0 dB Gain
 - Fully matched input and output
- **Bias Condition: 8V and 560mA**
- **Advanced 0.25 um AlGaAs / InGaAs PHEMT Technology with Excellent Reliability**
- **Surface Mount Package: 7.9 X 8.5 X 2.7 mm (Hermitical Version Available)**
- **MTTF > 100 years @ 85°C ambient temperature**



Description:

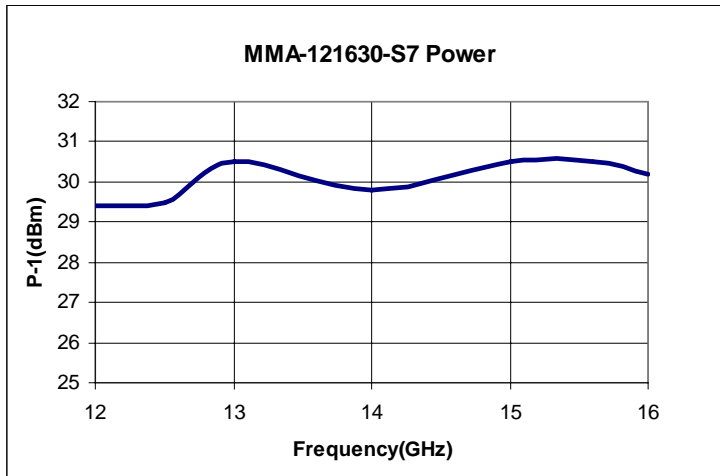
The MMA-121630-S7 is a 12-16 GHz MMIC power amplifier in a surface mount package. It is fabricated with advanced 0.25um AlGaAs / InGaAs PHEMT technology with excellent reliability. It provides over 1 watt output power at P1dB gain compression point and has a small signal gain of 26.0 dB across the band. This fully matched MMIC power amplifier is suitable for VSAT, point to point radio, and various military applications.

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

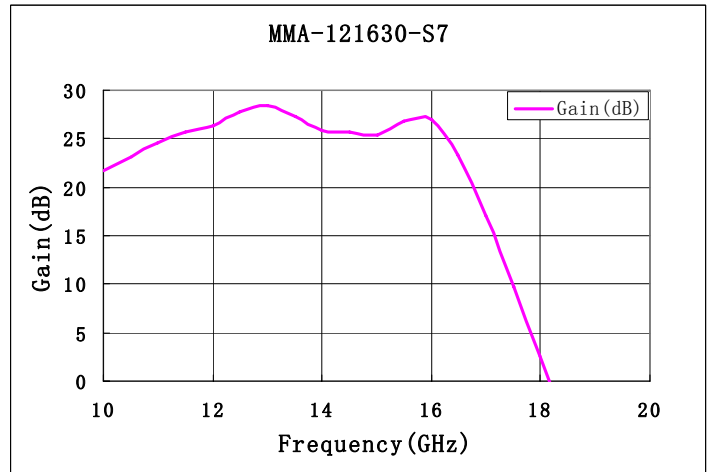
Parameter	Units	Min.	Typ.	Max.
Frequency Range (Min/Max)	GHz	12		16
Small Signal Gain	dB	24	26	
Gain Flatness	+/-dB		2.0	
Input Return Loss	dB		-7	
Output Return Loss	dB		-8	
Output P1dB	dBm	+29.0	+31.0	
Output Saturation Power	dBm		+32.0	
Noise Figure	dB	5.5	6.5	
Operating Current Range (Min/Max)	mA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

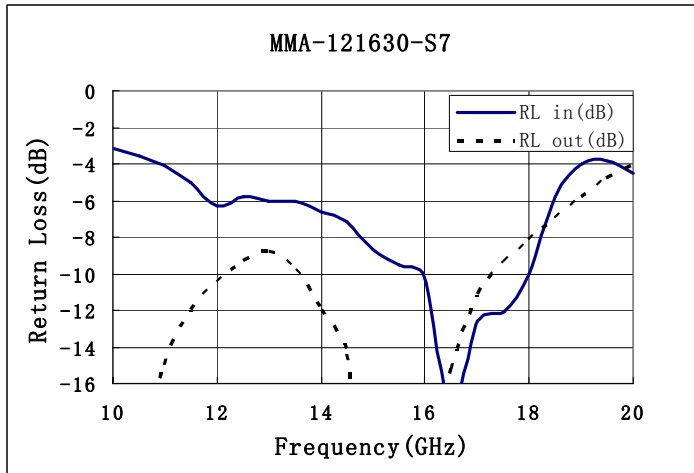
Output Power



Gain



Input and Output Return Loss



S-parameters: (V_{ds} = 8.0V, I_{ds}=560mA, T_A=25 °C, 50 Ohm system)

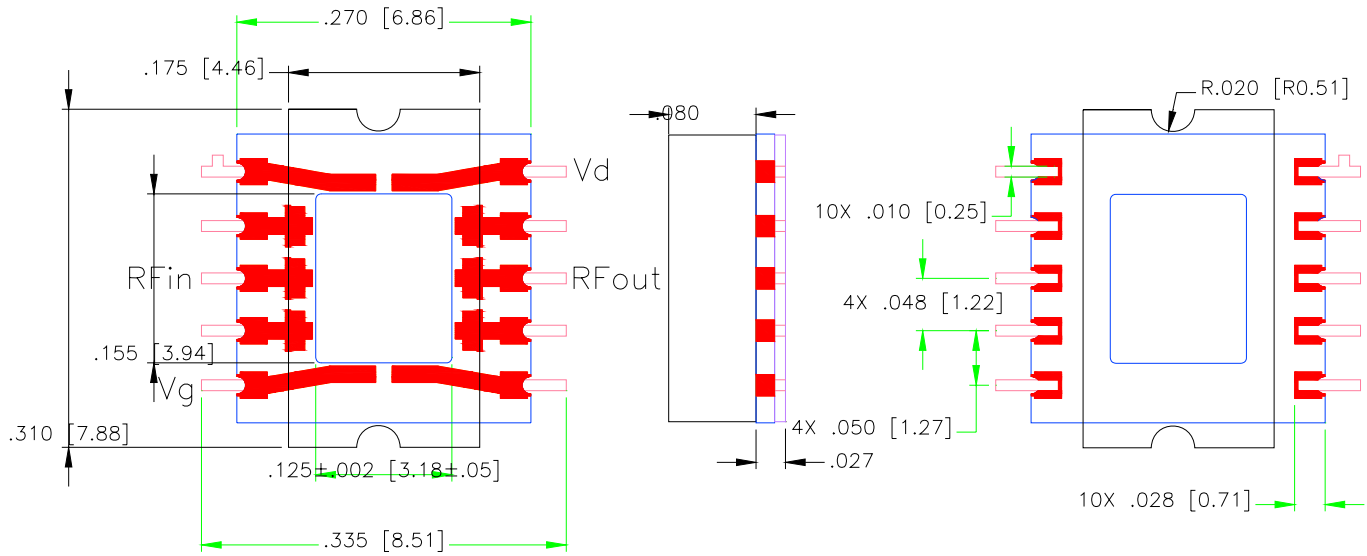
Freq(GHz)	magS11	angS11	magS21	angS21	magS12	angS12	magS22	angS22
10	-3.183	129.9	21.77	106.4	-50.59	-66.48	-21.49	-3.44
10.5	-3.534	61.48	23.15	29.5	-54.93	-114.7	-19.79	-139.8
11	-4.074	-8.173	24.57	-48.79	-55.28	-139.9	-14.94	136.3
11.5	-5.042	-81.01	25.69	-130.9	-67.62	-159.4	-12.03	63.98
12	-6.324	-148.8	26.4	147.1	-61.78	-142.5	-10.49	3.249
12.5	-5.829	149.3	27.83	63.05	-55.38	167.4	-9.235	-57.63
13	-6.014	89.76	28.33	-28.09	-53.96	130.6	-8.75	-131.2
13.5	-6.036	24.03	27.34	-121.2	-56.84	67.29	-9.764	146.8
14	-6.657	-44.87	25.93	155.9	-56.65	87.41	-12.04	67.03
14.5	-7.12	-117.9	25.75	73.34	-49.31	1.177	-14.37	-28.07
15	-8.703	151.5	25.35	-14.9	-49.87	-162.9	-27.84	108.2
15.5	-9.498	80.86	26.88	-104.8	-46.58	52.9	-18.3	-35.26
16	-10.22	-18.63	26.95	137.8	-47.15	-39.17	-19.61	-67.14
16.5	-17.42	154.8	23.33	15.68	-49.47	-112	-15.27	-98.47
17	-12.57	-16.29	17.03	-96.76	-57.36	-128.3	-11.16	-160.7
17.5	-12.12	-134.4	9.696	165.8	-47.96	-138.5	-9.335	126.1
18	-10.05	101.2	2.614	73.41	-42.58	159	-8.159	50.36
18.5	-5.787	8.08	-5.229	-16.27	-41.22	82.35	-7.004	-25.46
19	-3.997	-72.09	-13.79	-98.74	-41.52	10.19	-5.781	-96.91
19.5	-3.84	-148.7	-23.2	-179.1	-42.18	-66.11	-4.8	-162.9
20	-4.549	139.3	-34.44	116.1	-46.62	-133.6	-4.118	132.2

Absolute Maximum Ratings (*):

SYMBOL	PARAMETER	UNITS	ABSOLUTE MAXIMUM
V _{ds}	Drain-Source Voltage	V	9.0
V _{gs}	Gate-Source Voltage	V	-2.0 to +0.8
I _{ds}	Drain Current	mA	700
I _{gs}	Gate Current	mA	10.0
P _{diss}	DC Power Dissipation	W	6.3
P _{in max}	RF Input Power	dBm	+20
T _{ch}	Channel Temperature	°C	175
T _{stg}	Storage Temperature	°C	-60 to 150

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

Mechanical Diagram:



Package Size: 7.9 X 8.5 X 2.7 mm