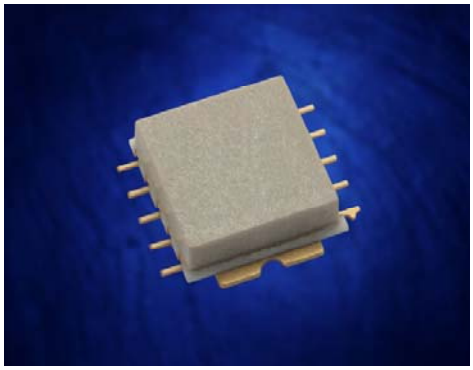
MMA-022028-S7

2 - 20 GHz GaAs MMIC
Medium Power Amplifier
New Product Data Sheet
March 2007

Features:

- **Frequency Range: 2 - 20 GHz**
- **P1dB: 28 dBm**
- **Psat: 29 dBm**
- **Gain: 8.0 dB**
- **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:

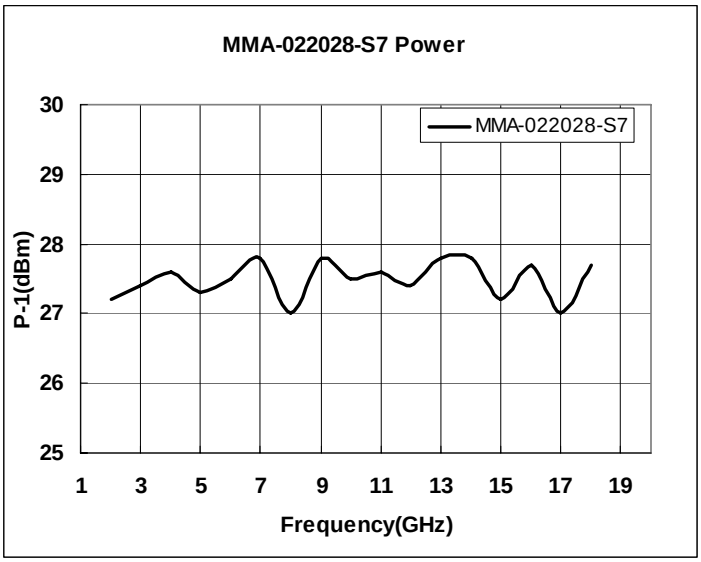
The MMA-022028-S7 is a 2-20 GHz wideband distributed MMIC amplifier fabricated with advanced 0.25um AlGaAs / InGaAs PHEMT technology with Excellent Reliability. Small signal gain is typically 8.0 dB across the band. Input / output return loss is typically better than 10 dB. It provides more than 28 dBm power at P1dB compression point and 29 dBm of saturated power across the band. This wide band MMIC power amplifier can be used in various broadband military EW, and communication applications, as well as well as commercial wireless applications. Hi-Rel and space screening services are available (Contact factory for details).

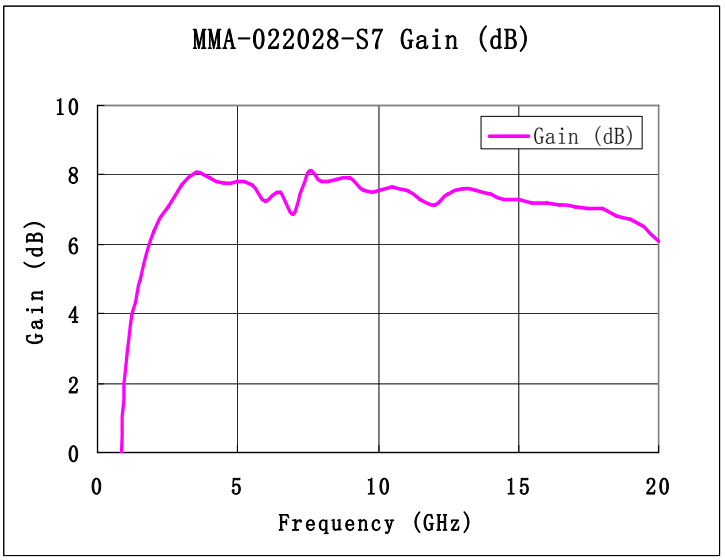
Electrical Specifications: (Vds = 8.0V, Vgs = -0.65V, Ids=380mA, Zo=50 ohm, T_A =25 °C)

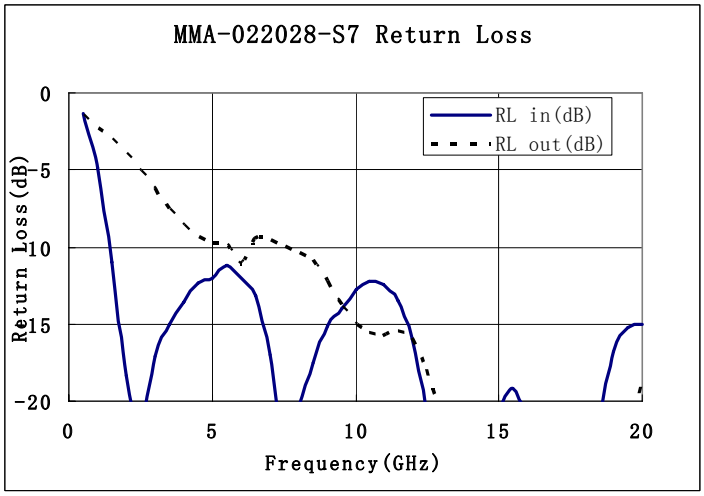
Parameter	Units	Min.	Typ.	Max.
Frequency Range (Min/Max)	GHz	2		20
Small Signal Gain	dB	6.0	8.0	
Gain Flatness	+/-dB		1.0	
Input Return Loss	dB		-10	
Output Return Loss	dB		-10	
Output P1dB	dBm	+26.0	+28.0	
Output Saturation Power	dBm		+29.0	
Noise Figure	dB		4.5	
Operating Current Range (Min/Max)	mA	300	380	500
Thermal Resistance	°C/W		20	

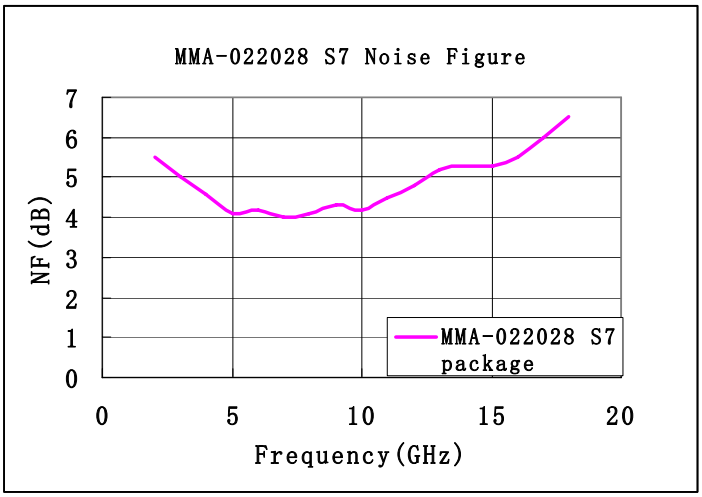
Data contained herein is subject to change without notice. All rights reserved © 2009
Please visit MwT website www.mwtinc.com for information on other MwT MMIC products.

Typical RF Performance: (Vds = 8.0V, Ids=380mA, T_A =25 °C, 50 Ohm system unless stated otherwise)









Data contained herein is subject to change without notice. All rights reserved © 2009
Please visit MwT website www.mwtinc.com for information on other MwT MMIC products.

S-parameters: (Vds = 8.0V, Ids=380mA, T_A =25 °C, 50 Ohm system)

Freq(GHz)	S11(dB)	S11(ang)	S21(dB)	S21(ang)	S12(dB)	S12(ang)	S22(dB)	S22(ang)
1	-4.907	38.39	2.389	157.3	-48.68	156.8	-2.258	86.13
2	-18.31	-101.3	6.338	27.01	-37.48	20.92	-3.92	-54.82
3	-17.07	-138.8	7.723	-92.5	-32.14	-134.2	-6.191	-174.4
4	-13.54	88.34	7.905	153.3	-29.33	113.7	-8.622	73.67
5	-12	-43.55	7.787	45.04	-29.36	5.259	-9.724	-34.98
6	-12.07	-179.7	7.237	-59.74	-29.05	-91.21	-11.05	-136.8
7	-16.97	-10.66	6.898	-157.6	-29.67	143.8	-9.501	117.4
8	-20.36	-165.5	7.792	93.02	-29.47	58.48	-10.32	22.92
9	-15.09	40.92	7.901	-14.35	-28.57	-36.55	-12.18	-85.94
10	-12.73	-87.94	7.558	-118.3	-27.06	-147.9	-15	163.9
11	-12.48	139.9	7.572	134	-26.8	101.2	-15.71	67.62
12	-15.94	7.335	7.14	29.53	-27.13	-7.511	-15.95	-32
13	-29.17	-165.9	7.625	-77.91	-26.01	-110.5	-20.74	-132.8
14	-25.2	-66.16	7.432	171.4	-24.77	139.3	-24.62	109.2
15	-20.82	122.9	7.268	61.89	-25.33	27.97	-26.06	-28.7
16	-21.03	-26.04	7.168	-49.41	-24.08	-77.23	-27.9	-107.1
17	-26.45	-138.2	7.099	-162.7	-23.79	168.7	-25.97	-91.08
18	-26.94	-163.9	7.012	80.64	-23.93	53.6	-26.72	-165
19	-16.74	58.34	6.705	-39.07	-24.23	-65.38	-25.43	166.4
20	-15.04	-73.99	6.087	-163.2	-24.51	171.3	-18.84	57.46

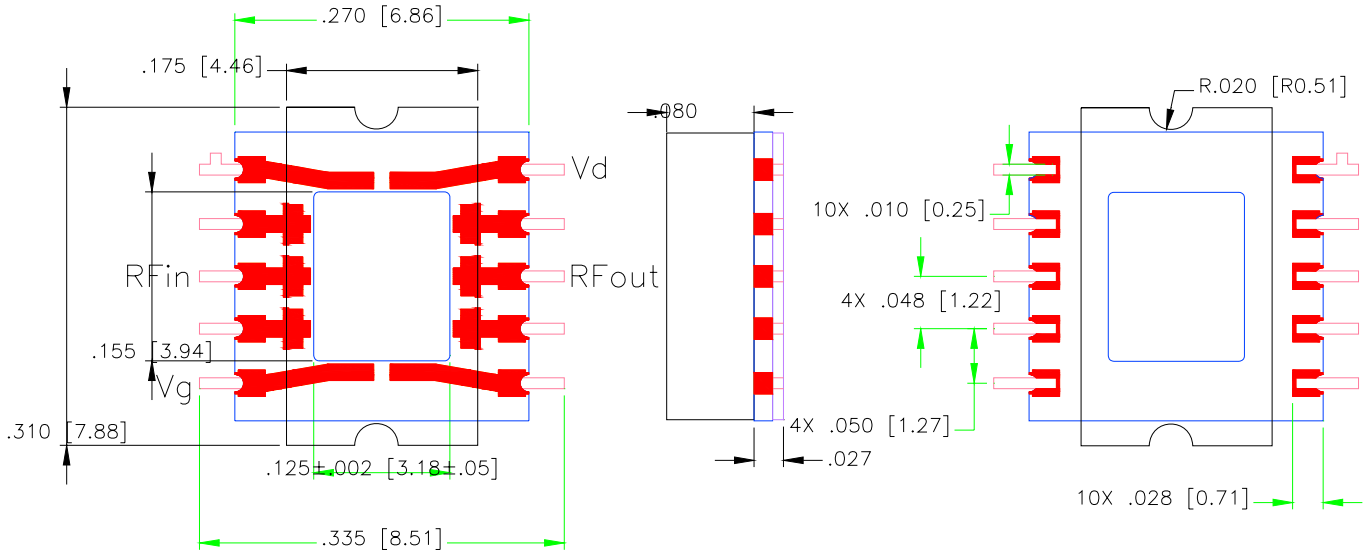
Absolute Maximum Ratings (*):

SYMBOL	PARAMETER	UNITS	ABSOLUTE MAXIMUM
Vds	Drain-Source Voltage	V	9.0
Vgs	Gate-Source Voltage	V	-2.0 to +0.8
Ids	Drain Current	mA	600
Igs	Gate Current	mA	3.0
Pdiss	DC Power Dissipation	W	5.0
Pin max	RF Input Power	dBm	+25
Tch	Channel Temperature	ºC	175
Tstg	Storage Temperature	ºC	-60 to 150

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

Data contained herein is subject to change without notice. All rights reserved © 2009
Please visit MwT website www.mwtinc.com for information on other MwT MMIC products.

Mechanical Diagram:



Package Size: 7.9 X 8.5 X 2.7 mm

Data contained herein is subject to change without notice. All rights reserved © 2009
Please visit MwT website www.mwtinc.com for information on other MwT MMIC products.