



MMA-011015-C3

1 - 10 GHz Fully Matched Driver Amplifier

Data Sheet

Features:

- Frequency Range: 1 – 10 GHz
- P-1dB: 16dBm
- Gain: 15dB
- Single Positive Bias: + 6V
- Fully Matched Input/Output to 50 ohms
- Advanced 0.25 um AlGaAs / InGaAs PHEMT Technology with Excellent Reliability
- Surface Mount 3.0 X 3.0 X 0.8 mm Package

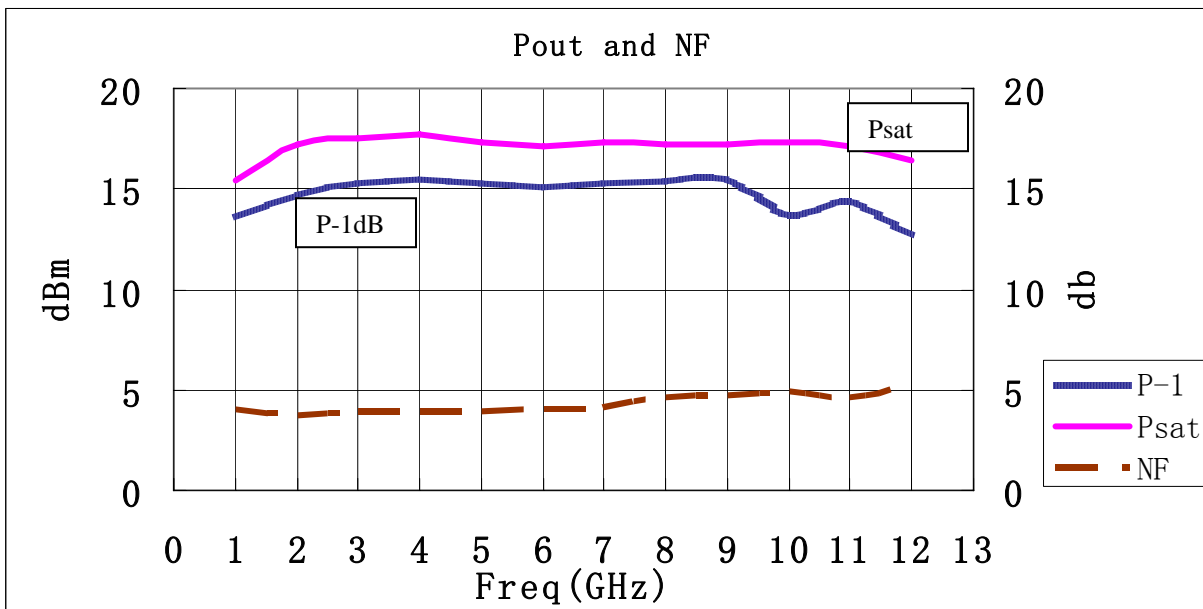
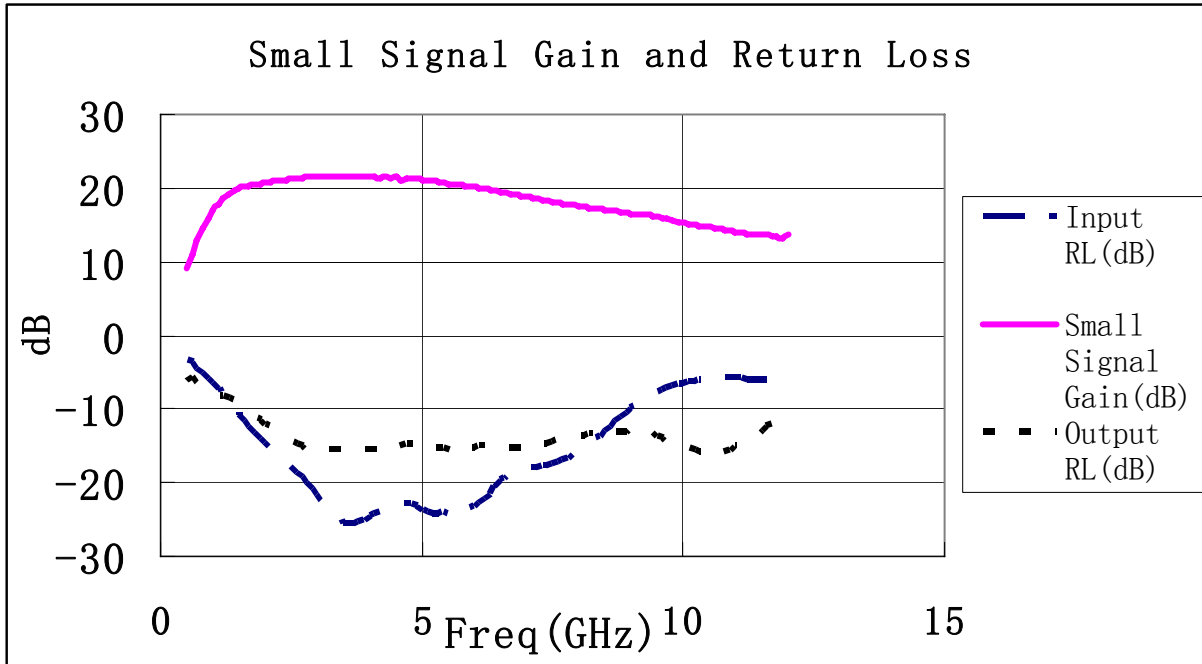
Description:

The MMA-011015-C3 is a 1-10 GHz broadband MMIC driver amplifier fabricated with advanced 0.25 um AlGaAs / InGaAs PHEMT technology with excellent reliability. The fully matched MMIC amplifier is easy to cascade with other stages and is unconditionally stable. The typical applications include test instrumentation, and commercial wireless equipment, etc.

Electrical Specifications: (Vds = 6.0V, Ids=75mA, Zo=50 ohm, TA=25 °C)

Parameter	Units	Min.	Typ.	Max.
Frequency Range (Min/Max)	GHz	1		10
Small Signal Gain	dB	10	15	
Gain Flatness	+/-dB		2.5	
Input Return Loss	dB		-10	
Output Return Loss	dB		-10	
Output P1dB	dBm		+16	
Noise Figure	dB		4.5	
Quiescent Current	mA		75	
Thermal Resistance	°C/W		120	

Typical RF Performance: ($V_{ds} = 6.0V$, $I_{ds} = 75mA$, $T_A = 25^\circ C$, 50 Ohm system unless stated otherwise)



S-parameters: (V_{ds} = 6.0V, I_{ds}=75mA, T_A=25 °C, 50 Ohm system)

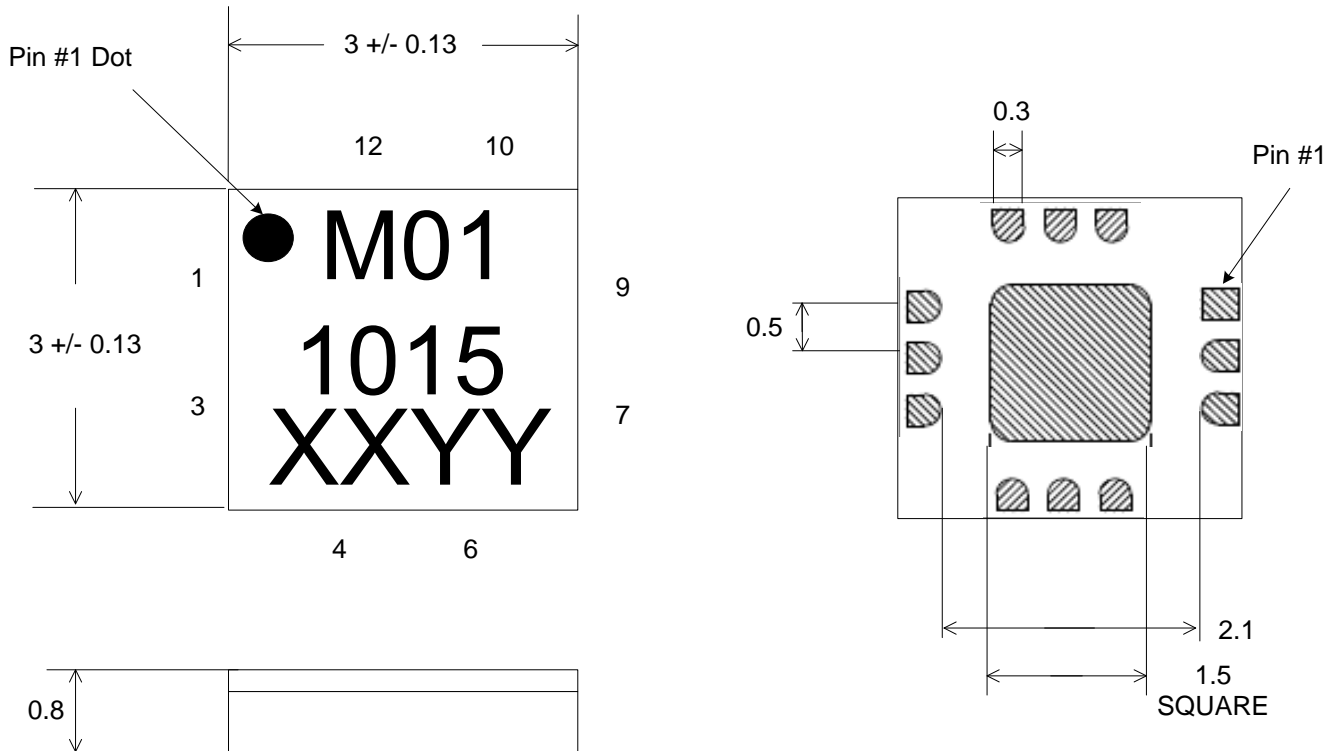
Freq(GHz)	magS11	angS11	magS21	angS21	magS12	angS12	magS22	angS22
1.0	0.47	-174.2	7.00	-9.38	0.006	84.91	0.42	18.93
1.5	0.29	120.5	9.87	-74.03	0.014	-18.02	0.33	-81.20
2.0	0.19	71.2	10.91	-131.30	0.018	-85.27	0.25	-156.30
2.5	0.13	25.7	11.51	178.00	0.018	-138.30	0.19	148.70
3.0	0.08	-11.0	11.88	127.60	0.017	175.00	0.17	102.60
3.5	0.05	-27.3	11.83	78.99	0.016	129.50	0.17	65.33
4.0	0.06	-41.8	11.93	31.65	0.014	84.32	0.17	29.09
4.5	0.07	-82.0	11.89	-16.77	0.013	40.10	0.18	-12.11
5.0	0.07	-145.3	11.31	-64.18	0.013	-5.37	0.18	-52.05
5.5	0.06	131.8	10.74	-111.10	0.012	-55.78	0.17	-90.80
6.0	0.07	56.8	10.14	-157.80	0.011	-104.80	0.17	-135.70
6.5	0.10	-6.0	9.38	157.10	0.010	-147.40	0.17	175.70
7.0	0.13	-61.6	8.76	113.00	0.010	166.90	0.17	127.50
7.5	0.13	-123.2	8.07	68.80	0.010	122.90	0.19	82.03
8.0	0.16	168.8	7.53	26.25	0.009	80.10	0.21	39.85
8.5	0.23	104.8	7.09	-17.00	0.009	39.33	0.21	0.17
9.0	0.32	48.0	6.61	-60.04	0.007	3.40	0.23	-35.98
9.5	0.41	-1.4	6.33	-104.30	0.008	-33.67	0.21	-84.15
10.0	0.47	-46.7	5.84	-147.80	0.007	-72.67	0.17	-139.60

Absolute Maximum Ratings (*):

SYMBOL	PARAMETER	UNITS	ABSOLUTE MAXIMUM
V _{ds}	Drain-Source Voltage	V	8.0
I _{ds}	Drain Current	mA	150
P _{in max}	RF Input Power	dBm	+12
T _{oper}	Operating Temperature	°C	-40 to +85
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.

Package Pin-out:



Pin	Description
2	RF Input
8	RF Output
10	Vd
1, 3, 7, 9, 13 (center pad)	Ground
4, 5, 6, 11, 12	N/C

Application Circuit:

