



MMA-053026-82

500-3000 MHz Fully Matched High Dynamic Range Amplifier Data Sheet

Features:

- Frequency Range: 900 – 2000 MHz
- OIP3: +44 dBm
- P1dB(min): +26 dBm
- Gain @ 900 - 2000 MHz(min) : 11 dB
- 3 dB NF @ 900- 2700 MHz
- Single +8.0V Supply
- MTTF > 100 years @ 85°C ambient temperature

Applications:

- Cellular/PCS/3G Base Stations
- Fixed Wireless and WLAN
- Point-to-Point Radio

Description:

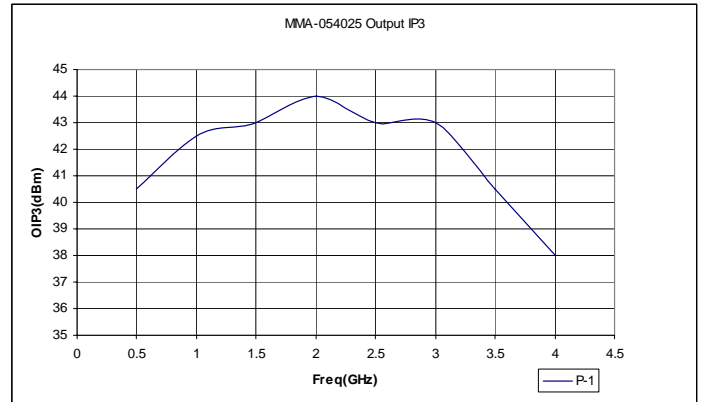
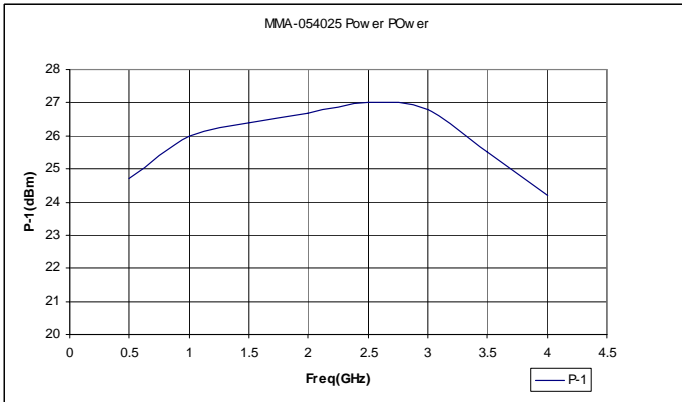
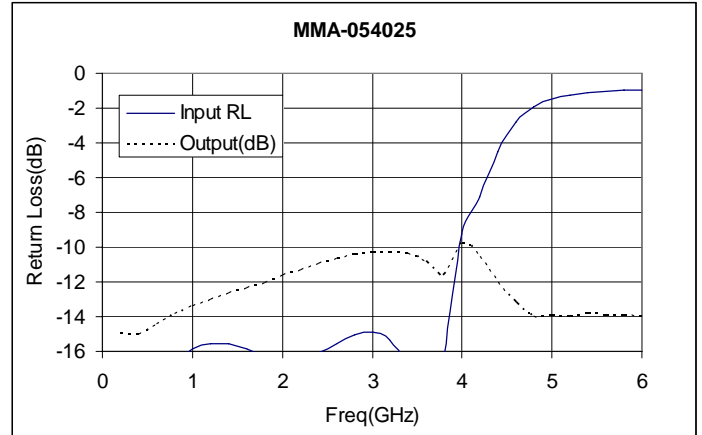
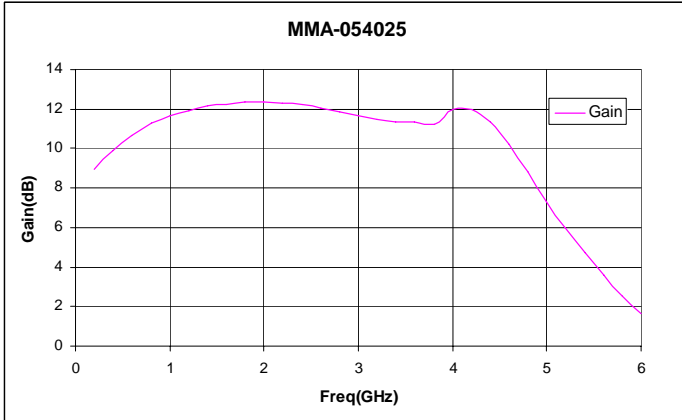
The MMA-053026 is a high linearity broadband MMIC amplifier. Packaged in MwT's 82 surface-mount package, the MMIC is ideally suited for high linearity driver and high dynamic range LNA applications. The applications include 2G, 2.5G, and 3G wireless infrastructure standards, such as GSM, TDMA, CDMA, EDGE, CDMA2000, WCDMA, TD-SCDMA, and UMTS base stations. The third order intercept point performance is excellent, typically 18 dB above the 1 dB gain compression point. MMA-053026-82 provides +26 dBm minimum P1dB, +44 dBm output IP3, and 11 dB gain with 3 dB noise figure.

Electrical Specifications: @ $V_{ds}=8.0V$, $I_{ds}=300mA$, $T_a=25\text{ }^{\circ}C$ $Z_0=50\text{ ohm}$

Parameter	Units	Typical Data
Frequency Range	MHz	900-2000
Gain (Min)	dB	11
Gain Flatness (Max)	+/-dB	2.0
Input Return Loss (Max)	dB	8
Output Return Loss (Typ)	dB	8
Output P1dB (Min)	dBm	26
Output IP3 (Typ / Min) ⁽¹⁾	dBm	44
Noise Figure(Typ)	dB	3.0
Operating Current Range (Min / Max)	mA	220/300
Thermal Resistance (Typ)	$^{\circ}C / W$	25

(1) Output IP3 is measured with two tones at output power of 11 dBm/tone separated by 10 MHz

Typical RF Performance: $V_{ds}=7.5V$, $I_{ds}=300mA$, $T_a=25\text{ }^\circ C$ 50 Ohm system



Typical Scattering Parameters:

(V_{ds}=7.5V, I_{ds}=300mA, T_a=25°C Reference Planes at Leads)

Freq (GHz)	Mag S11	Ang S11	Mag S21	Ang S21	Mag S12	Ang S12	Mag S22	Ang S22
0.2	0.06	12.2	2.80	175.8	0.006	71.4	0.18	-93.0
0.4	0.10	-0.3	3.12	160.2	0.011	48.5	0.18	-125.8
0.6	0.13	-21.9	3.42	142.5	0.016	29.2	0.19	-150.4
0.8	0.15	-45.6	3.65	123.5	0.019	13.1	0.20	-170.6
1.0	0.16	-69.9	3.82	104.7	0.023	-2.4	0.21	171.6
1.2	0.17	-95.3	3.95	85.3	0.027	-18.6	0.22	156.2
1.4	0.17	-122.1	4.05	66.3	0.030	-34.2	0.23	141.1
1.6	0.16	-151.0	4.09	47.0	0.034	-50.3	0.24	126.1
1.8	0.15	178.4	4.14	27.7	0.037	-66.5	0.25	112.0
2.0	0.15	144.9	4.15	8.3	0.040	-82.7	0.26	96.8
2.2	0.15	110.3	4.13	-11.2	0.043	-99.3	0.27	82.0
2.4	0.16	75.5	4.08	-30.6	0.046	-115.9	0.28	66.0
2.6	0.17	43.1	4.01	-49.6	0.048	-131.9	0.29	50.4
2.8	0.18	13.0	3.92	-68.5	0.050	-147.8	0.30	34.3
3.0	0.18	-13.5	3.83	-87.0	0.053	-163.0	0.30	18.6
3.2	0.17	-37.7	3.75	-105.1	0.056	-178.3	0.31	2.4
3.4	0.14	-56.1	3.71	-123.1	0.059	167.7	0.30	-12.8
3.6	0.09	-55.6	3.69	-141.7	0.067	154.6	0.29	-28.4
3.8	0.15	-3.6	3.65	-159.6	0.091	137.7	0.26	-36.5
4.0	0.35	-41.5	3.97	-179.7	0.101	94.4	0.33	-50.3
4.2	0.44	-63.4	3.96	154.3	0.085	69.8	0.30	-72.4
4.4	0.59	-87.7	3.70	128.6	0.078	48.0	0.25	-86.7
4.6	0.72	-115.7	3.24	104.2	0.069	26.2	0.22	-94.4
4.8	0.80	-143.4	2.76	82.6	0.060	5.5	0.20	-99.5
5.0	0.85	-168.5	2.33	63.7	0.052	-12.0	0.20	-105.4
5.2	0.87	168.1	1.99	46.4	0.045	-28.7	0.20	-113.3
5.4	0.88	147.4	1.72	30.8	0.040	-43.0	0.20	-122.7
5.6	0.89	127.6	1.52	15.7	0.036	-57.4	0.20	-132.8
5.8	0.89	109.7	1.34	0.9	0.033	-71.0	0.20	-144.0
6.0	0.90	92.8	1.21	-13.4	0.030	-84.2	0.20	-154.8

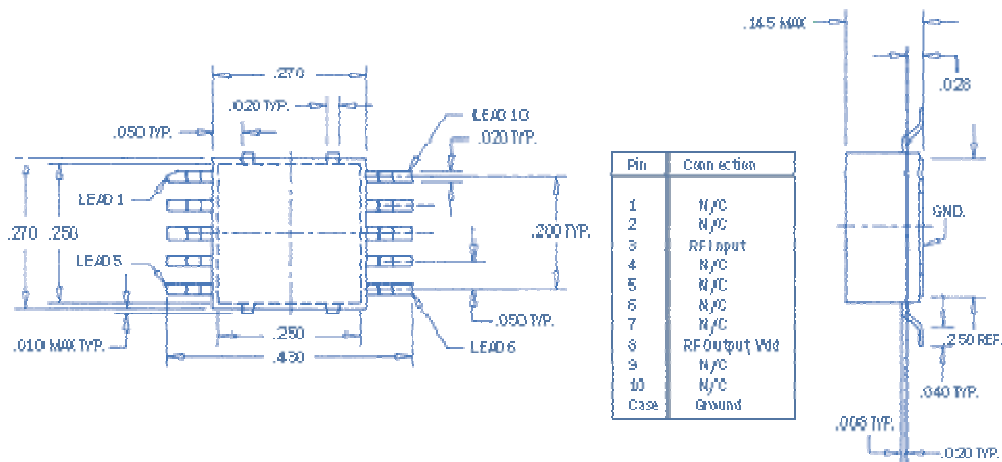
Absolute Maximum Ratings: ($T_a = 25\text{ }^\circ\text{C}$)*

SYMBOL	PARAMETERS	UNITS	ABSOLUTE MAXIMUM
Vds	Drain-Source Voltage	V	8.5
I _{ds}	Drain Current	mA	400
I _{gs}	Gate Current	mA	3
P _{diss}	DC Power Dissipation	W	3.2
P _{in max}	RF Input Power	dBm	+24
T _{oper}	Operating Temperature	°C	-40 to +85
T _{ch}	Channel Temperature	°C	150
T _{stg}	Storage Temperature	°C	-60 to 150

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

Mechanical Information:

This Package is MwT 82 Package. It is sealed with epoxy.



(all units are mm)

ORDERING INFORMATION:

Part Number
MMA-053026-82

Version
Commercial