



Features:

- Frequency Range: 3300 – 3800 MHz
- P1dB: +33 dBm
- Pave: +26 dBm @ 2.5% EVM under 802.16/64 QAM
- OIP3: +44 dBm
- Gain: 25 dB
- Vdd =+7.5V
- Input and Output Fully Matched to 50 Ω
- MTTF > 100 years @ 85°C ambient temperature
- RoHS Compliant Surface-Mount QFN 5X5mm Package

Applications:

- WiMax
- WLAN
- Wireless Security System
- ISM Applications

Description:

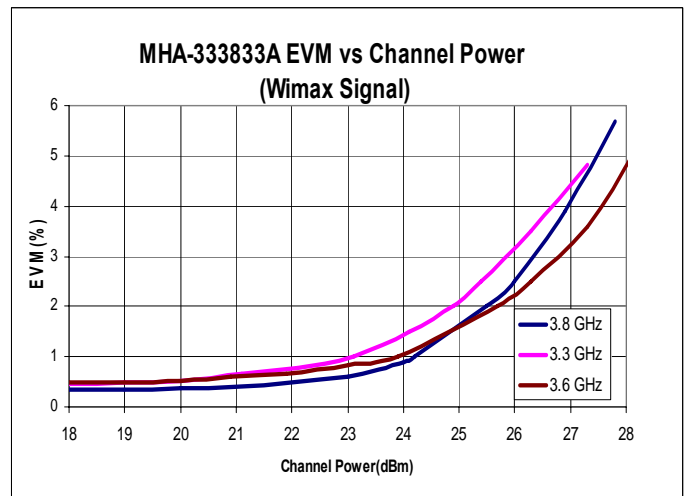
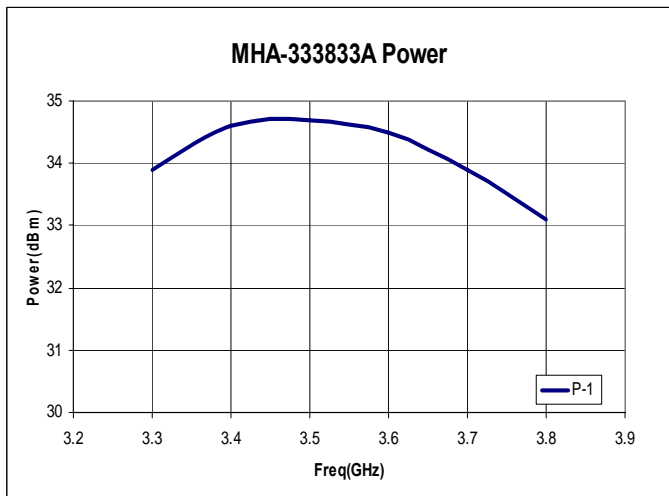
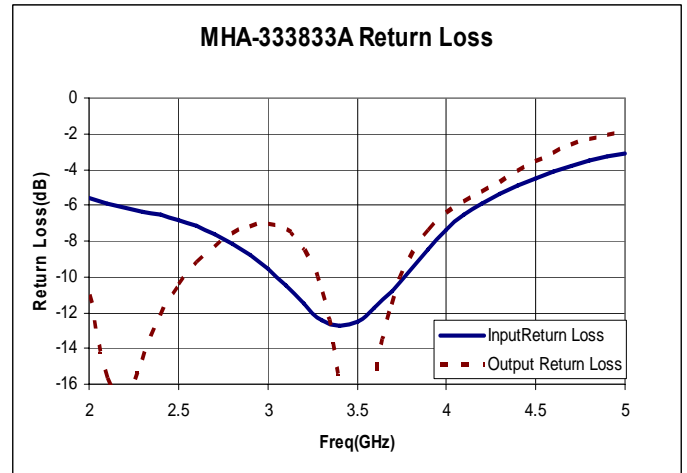
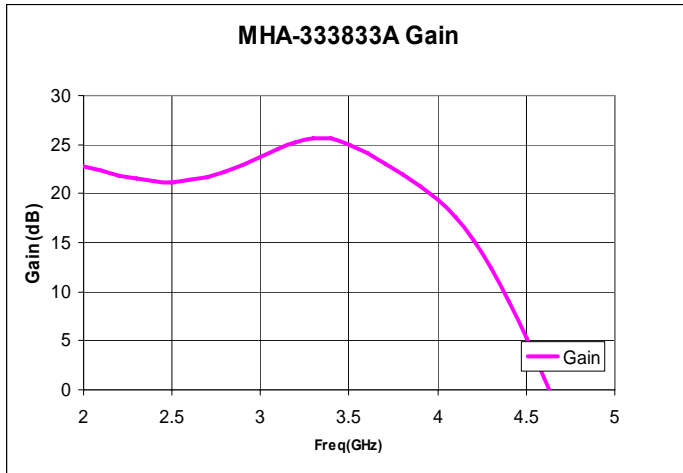
The MMA-333833-Q5 is a high linearity InGaP HBT MMIC amplifier. It is in a low cost QFN 5X5mm Green Package. Applications include the driver and the output stage of the power amplifiers for WLAN and WiMax infrastructure base stations and access points. The third order intercept performance of the MMA-333833A-Q5 is excellent and is typically 11 dB above the 1 dB gain compression point. It provides +33 dBm P1dB, +26 dBm Pave @2.5 % EVM under 802.16/64 QAM input signal, +44 dBm OIP3 and 25 dB gain.

Electrical Specifications: *Vds=7.5V,, Icq=800mA, Ta=25 °C, Z0=50 ohm*

Parameter	Units	Typical Data
Frequency Range	MHz	3300-3800
Gain (Typ / Min)	dB	25 / 22
Gain Flatness (Typ)	+ / - dB	2.0
Input Return Loss	dB	10
Output Return Loss	dB	10
Output P1dB	dBm	33
Output IP3 ⁽¹⁾	dBm	44
Pout @ 2.0% EVM	dBm	25
Operating Current Range (Typ / Max)	mA	800 / 1000
Thermal Resistance	°C / W	12

(1) Output IP3 is measured with two tones at output power of 13 dBm/tone separated by 10 MHz.

Typical RF Performance: $V_{ds}=7.5V, I_{cq}=800mA, Z_0=50\text{ ohm}, T_a=25\text{ }^\circ\text{C}$



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

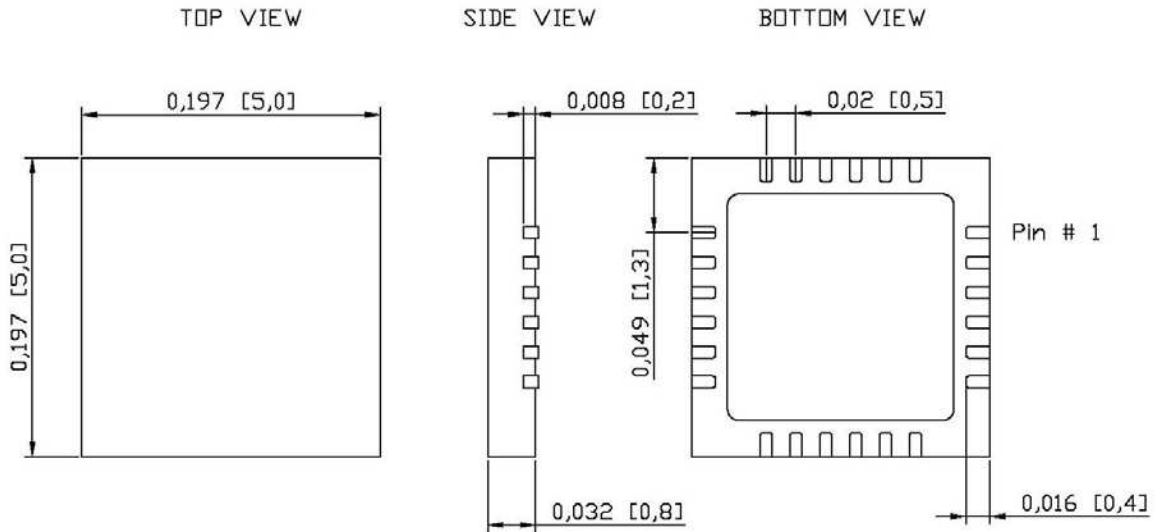
SYMBOL	PARAMETERS	UNITS	ABSOLUTE MAXIMUM
V _{cc}	Drain-Source Voltage	V	9.0
I _{cc}	Drain Current	mA	1000
I _{pc}	Gate Current	mA	20.0
P _{diss}	DC Power Dissipation	W	9.0
P _{in max}	RF Input Power	dBm	+30.0
T _{ch}	Channel Temperature	°C	150.0
T _{stg}	Storage Temperature	°C	-60.0 to 150.0

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

Typical Scattering Parameters: $V_{ds}=7.5V, I_{cq}=800mA, Z_0=50\text{ ohm}, T_a=25\text{ }^\circ\text{C}$

Freq(GHz)	dB(S11)	Ang(S11)	dB(S21)	Ang(S21)	dB(S12)	Ang(S12)	dB(S22)	Ang(S22)
2.5	-6.83	-64.4	21.20	-98.6	-51.70	-72.1	-10.4	88.6
2.6	-7.18	-79.4	21.40	-125.0	-51.80	-91.5	-9.2	82.0
2.7	-7.59	-94.0	21.70	-151.0	-52.30	-104.0	-8.3	73.2
2.8	-8.12	-108.0	22.20	-178.0	-52.80	-117.0	-7.7	62.8
2.9	-8.80	-121.0	22.90	154.0	-53.50	-130.0	-7.2	51.4
3.0	-9.58	-135.0	23.70	125.0	-54.30	-138.0	-7.1	38.6
3.1	-10.50	-146.0	24.50	92.9	-54.40	-146.0	-7.4	23.0
3.2	-11.50	-154.0	25.20	58.5	-55.50	-157.0	-8.5	4.4
3.3	-12.40	-160.0	25.60	21.3	-55.60	-161.0	-10.9	-16.3
3.4	-12.70	-163.0	25.60	-17.7	-55.30	-169.0	-16.5	-40.9
3.5	-12.50	-166.0	25.00	-57.0	-56.00	179.0	-29.8	-147.0
3.6	-11.70	-170.0	24.10	-95.0	-57.70	171.0	-16.6	116.0
3.7	-10.80	-177.0	23.10	-132.0	-57.70	168.0	-11.6	95.5
3.8	-9.63	174.0	21.90	-168.0	-58.70	165.0	-8.9	79.8
3.9	-8.48	162.0	20.70	155.0	-58.10	158.0	-7.4	66.9
4.0	-7.40	149.0	19.30	116.0	-59.30	170.0	-6.5	55.6
4.1	-6.55	134.0	17.60	76.8	-59.70	170.0	-5.9	45.8
4.2	-5.90	118.0	15.30	36.9	-58.00	169.0	-5.3	37.9
4.3	-5.35	102.0	12.40	-2.3	-57.00	164.0	-4.7	31.2
4.4	-4.91	85.8	8.98	-39.1	-55.80	158.0	-4.1	24.4
4.5	-4.51	69.8	5.30	-73.2	-55.30	150.0	-3.6	16.6

Mechanical Information: *This Package is RoHS compliant*



All dimensions are in mm

Pin Assignment			
Pin #	Function	Pin #	Function
1	N/A	13	N/A
2	N/A	14	N/A
3	RF in	15	RF out
4	RF in	16	RF out
5	N/A	17	N/A
6	N/A	18	N/A
7	N/A	19	N/A
8	N/A	20	N/A
9	N/A	21	N/A
10	Vcc	22	Vpc
11	N/A	23	N/A
12	N/A	24	N/A