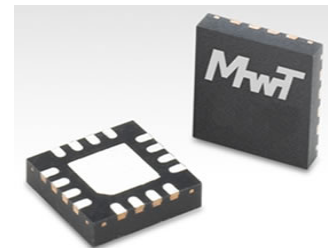


Features:

- Ideal for 3300 – 3800 MHz High Linearity / High Dynamic Range WiMax/WLAN and Point-to-Point Radio Applications
- Excellent RF Performance:
 - 45 dBm OIP3
 - 28.5 dBm P1dB
 - 21.5 dBm Pout @ 2.0% EVM (Testing signal: 802.16/64 QAM)
 - 11 dB Gain
- Vdd =+7.5V
- Input and Output are Matched to 50 Ω
- MTTF > 100 years @ 85°C ambient temperature
- RoHS Compliant Surface-Mount QFN 4X4mm Package



Description:

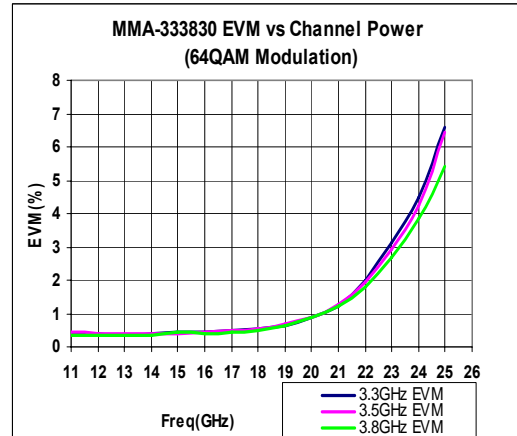
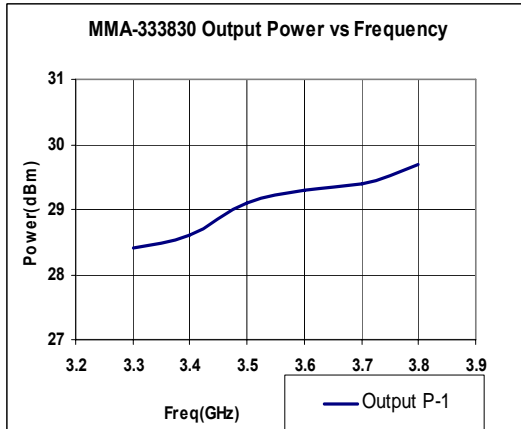
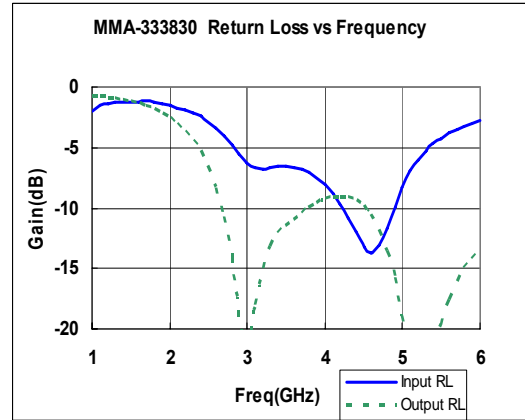
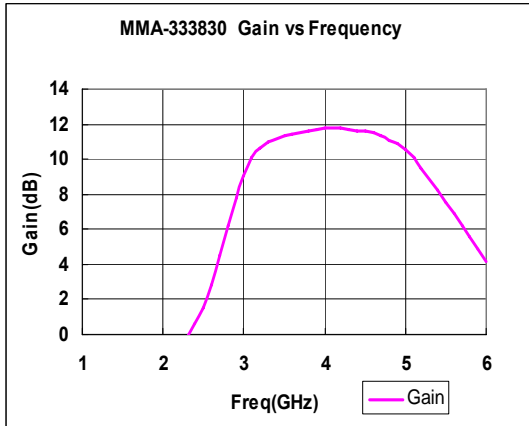
The MMA-333830-Q4 is a high linearity GaAs FET MMIC amplifier utilizing MwT's proprietary linear device technology. It is in a low cost QFN 4X4mm Green Package. Applications include the driver and the power amplifiers for WLAN and WiMax infrastructure base stations and access points as well PTP radios. The third order intercept performance of the MMA-333830-Q4 is excellent and is typically 16 dB above the 1 dB gain compression point.

Typical RF Performance: *Vds=7.5V, Vgs=-0.9V, Ids=300mA, Ta=25 °C Z0=50 ohm*

| Parameter | Units | Typical Data |
|-------------------------------------|-------|--------------|
| Frequency Range | MHz | 3300-3800 |
| Gain (Typ / Min) | dB | 11 / 10 |
| Gain Flatness (Typ / Max) | +/-dB | 1.0 / 1.2 |
| Input Return Loss | dB | 7 |
| Output Return Loss | dB | 10 |
| Output P1dB | dBm | 28.5 |
| Output IP3 ⁽¹⁾ | dBm | 45 |
| Pout @ 2.0% EVM | dBm | 21.5 |
| Operating Current Range (Typ / Max) | mA | 300 / 400 |
| Thermal Resistance | °C /W | 25 |

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

Typical RF Performance: $V_{ds}=7.5V, V_{gs}=-0.9V, I_{ds}=300mA, Z_0=50\ \text{ohm}, T_a=25\ ^\circ C$



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

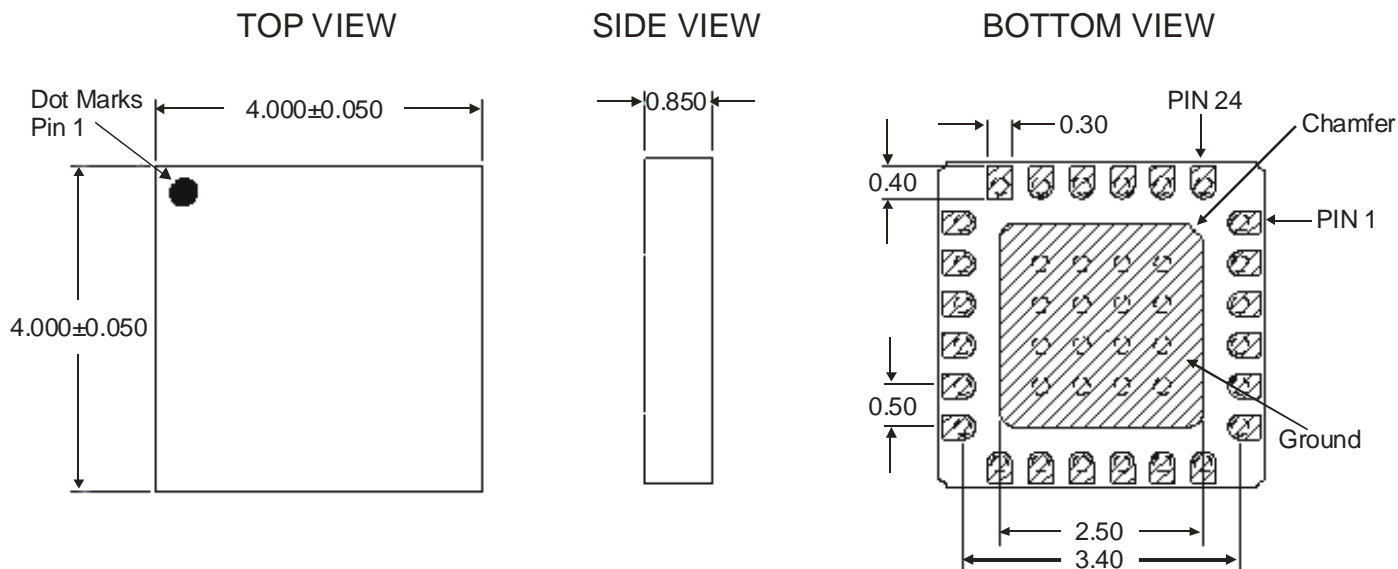
| SYMBOL | PARAMETERS | UNITS | ABSOLUTE MAXIMUM |
|-------------------|----------------------|-------|------------------|
| Vds | Drain-Source Voltage | V | 8.5 |
| Vgs | Gate-Source Voltage | V | -6 to +0.8 |
| I _{ds} | Drain Current | mA | 400 |
| I _{gs} | Gate Current | mA | 3.0 |
| P _{diss} | DC Power Dissipation | W | 3.0 |
| Pin max | RF Input Power | dBm | +28.0 |
| 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: $V_{ds}=7.5V, V_{gs}=-0.9V, I_{ds}=300mA, Z_0=50\text{ ohm}, T_a=25\text{ }^\circ\text{C}$

| Freq (GHz) | S11 | | S21 | | S12 | | S22 | |
|---------------|-------|-------|-------|-------|--------|-------|--------|-------|
| | Mag | Ang | Mag | Ang | Mag | Ang | Mag | Ang |
| 2.0 | 0.842 | 17.6 | 0.775 | 39.5 | 0.0179 | -40.5 | 0.747 | -1.97 |
| 2.2 | 0.805 | -13.8 | 0.918 | 14.7 | 0.0198 | -68.5 | 0.654 | -38.9 |
| 2.4 | 0.758 | -45.4 | 1.07 | -6.5 | 0.0216 | -94.2 | 0.542 | -78.8 |
| 2.6 | 0.675 | -76.6 | 1.38 | -26.2 | 0.0241 | -117 | 0.384 | -122 |
| 2.8 | 0.579 | -105 | 2.04 | -53.7 | 0.0303 | -139 | 0.202 | -176 |
| 3.0 | 0.483 | -127 | 2.82 | -91.9 | 0.0407 | -168 | 0.0817 | 65.2 |
| 3.2 | 0.459 | -145 | 3.39 | -135 | 0.0506 | 154 | 0.179 | -29.5 |
| 3.4 | 0.471 | -169 | 3.61 | -175 | 0.0567 | 116 | 0.248 | -70.2 |
| 3.6 | 0.467 | 163 | 3.71 | 147 | 0.0596 | 79.4 | 0.286 | -99.8 |
| 3.8 | 0.442 | 131 | 3.8 | 111 | 0.0619 | 43.7 | 0.319 | -127 |
| 4.0 | 0.396 | 96.8 | 3.88 | 75.8 | 0.0633 | 8.36 | 0.345 | -156 |
| 4.2 | 0.328 | 56.9 | 3.9 | 40.4 | 0.0659 | -25.8 | 0.354 | 173 |
| 4.4 | 0.25 | 5.93 | 3.81 | 5.06 | 0.0694 | -61.5 | 0.342 | 142 |
| 4.6 | 0.206 | -66.2 | 3.76 | -30.6 | 0.0719 | -98.3 | 0.294 | 111 |
| 4.8 | 0.26 | -144 | 3.6 | -67.5 | 0.0683 | -136 | 0.21 | 81.2 |
| 5.0 | 0.384 | 160 | 3.35 | -105 | 0.0657 | -173 | 0.114 | 53 |
| 5.2 | 0.499 | 114 | 2.98 | -142 | 0.0628 | 152 | 0.0246 | 62.6 |
| 5.4 | 0.584 | 72.7 | 2.59 | -177 | 0.0593 | 118 | 0.0718 | 140 |
| 5.6 | 0.646 | 33.8 | 2.22 | 150 | 0.0559 | 85.3 | 0.132 | 116 |
| 5.8 | 0.69 | -3.61 | 1.89 | 118 | 0.0507 | 53.1 | 0.177 | 85.3 |
| 6.0 | 0.732 | -39.7 | 1.61 | 85.3 | 0.0458 | 22.7 | 0.213 | 52.4 |

Mechanical Information: *This Package is RoHS compliant*



All dimensions are in mm

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