

1-8GHz 5W RF Power Amplifier

Features

- Frequency Range: 1-8GHz
- Small Signal Gain: 40dB
- P_{SAT}: +37dBm (5W)
- DC Power: +28V @ 1100mA
- DC Power Reverse Protected
- RF Connector: SMA Female
- GaN RF Power Amplifier
- Class AB Power Amplifier

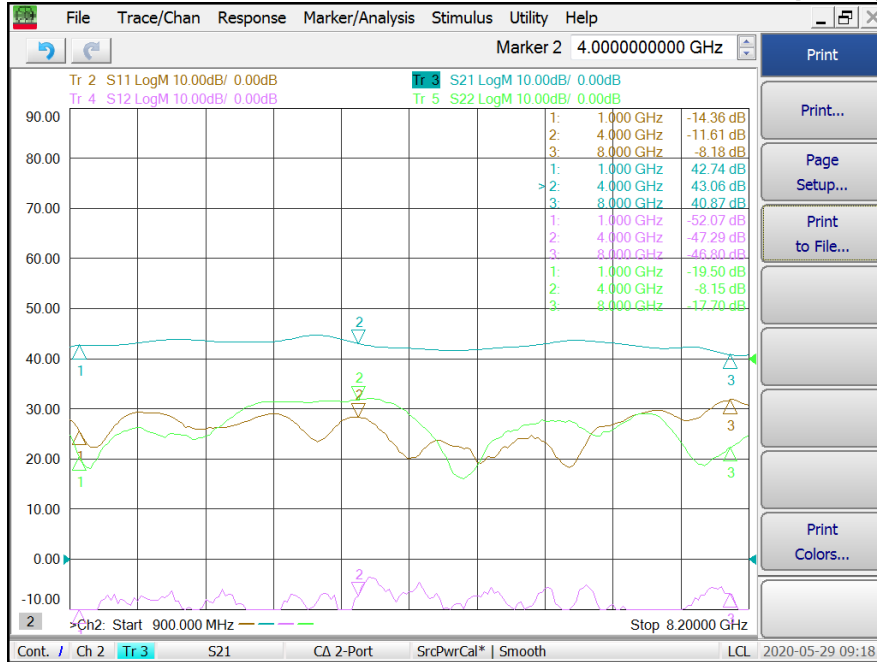
Electrical Specifications @+25°C, Z_{in}=Z_{out}=50 Ω, V_{supply} = +28VDC

| Parameter | Unit | Minimum | Typical | Maximum | |
|--|----------------------------------|---------|---------|---------|------|
| Frequency Range | GHz | 1 | | 8 | |
| Small Signal Gain (S ₂₁) (P _{IN} = -45dBm) | f = 1GHz | 40 | 42 | | |
| | f = 4GHz | 40 | 42 | | |
| | f = 8GHz | 39 | 41 | | |
| Gain Flatness | dB | | ±1.0 | ±2.0 | |
| Output Power P _{3dB} | f = 1GHz | | +39.0 | | |
| | f = 4GHz | | +38.5 | | |
| | f = 8GHz | | +36.5 | | |
| Output Power P _{SAT} | f = 1-8GHz ^{Note} | +37 | | | |
| Output IP3 | f = 4GHz | | +44 | | |
| Efficiency | P _{IN} = 0dBm, f = 4GHz | | 25 | | |
| Noise Figure | | | 4.0 | 5.0 | |
| Reverse Isolation (S ₁₂) | | -40 | -45 | | |
| VSWR-Input (S ₁₁) | f = 4GHz | ratio:1 | 1.8:1 | 2.2:1 | |
| DC Supply Voltage | | V | 24 | 28 | 32 |
| DC Supply Current | No RF Input | mA | | 650 | 800 |
| | P _{OUT} = +37dBm | mA | | 1100 | 1500 |

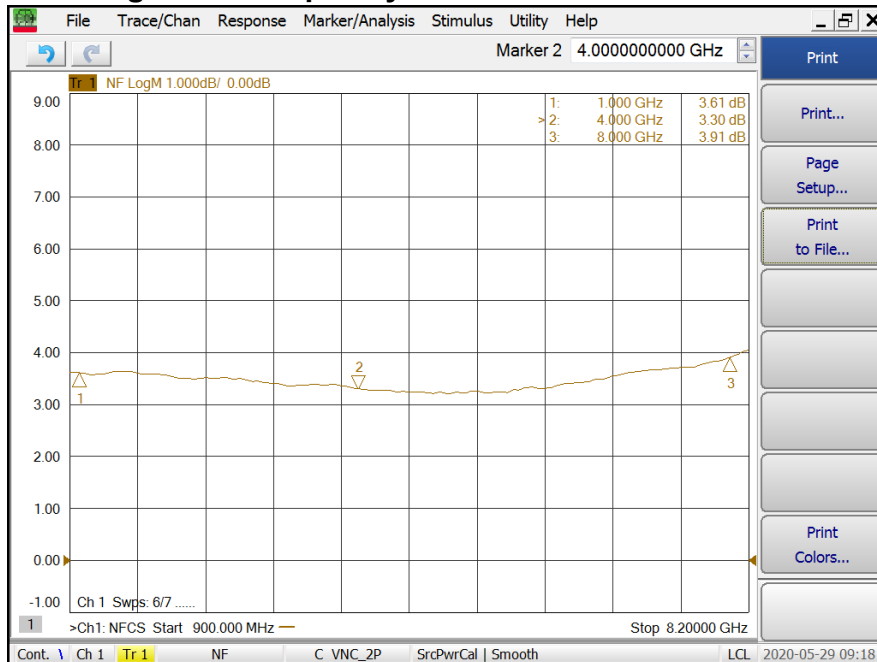
Note: Output Power P_{SAT} can be achieved to 10W range between 1 to 4GHz.

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Gain S21, Isolation S12, Return Loss S11, S22 vs Frequency

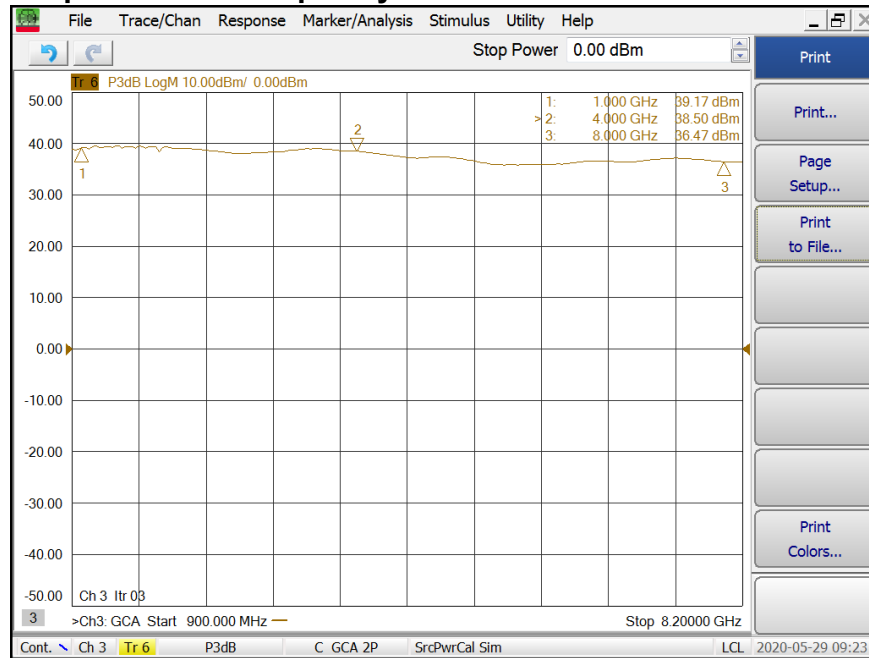


Noise Figure vs Frequency

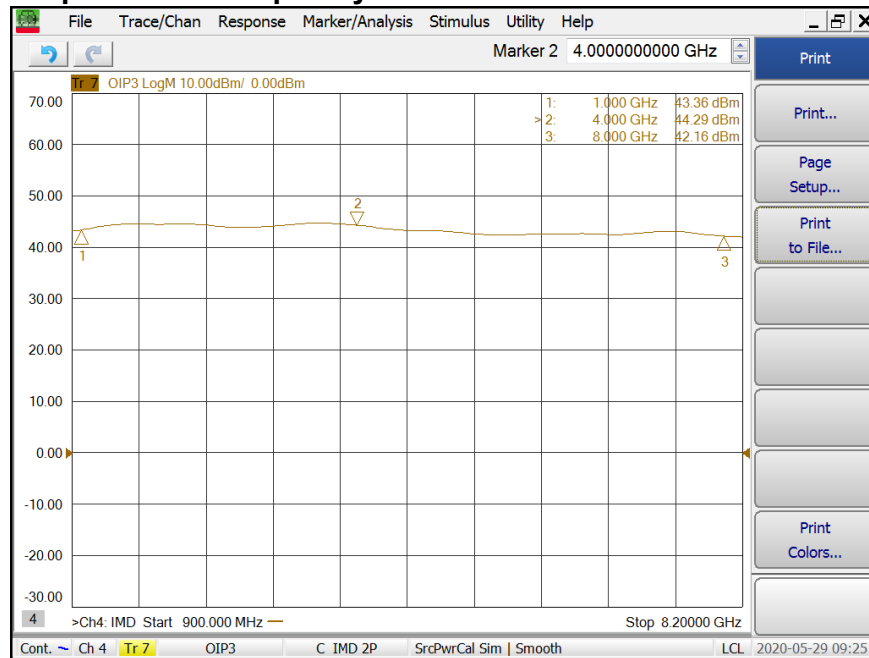


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Output Pout vs Frequency

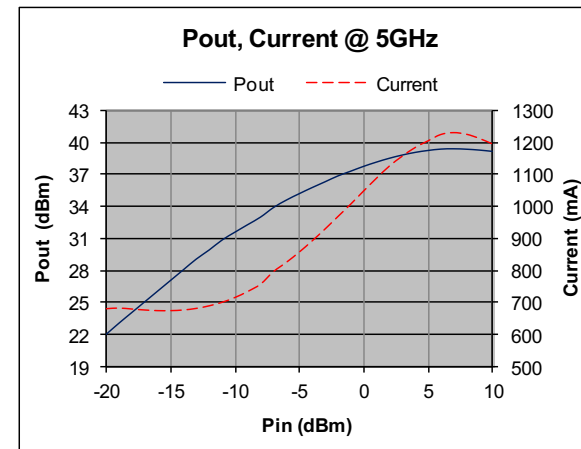
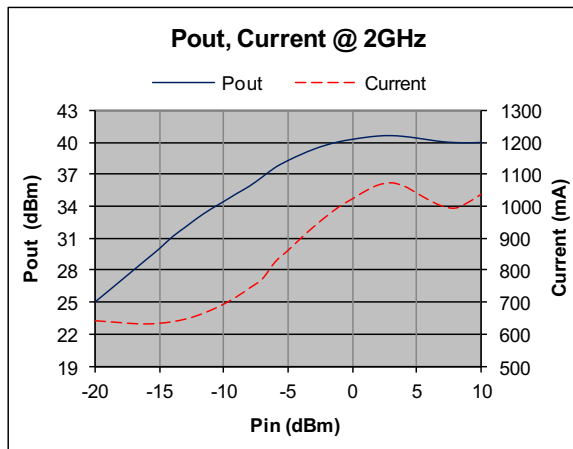
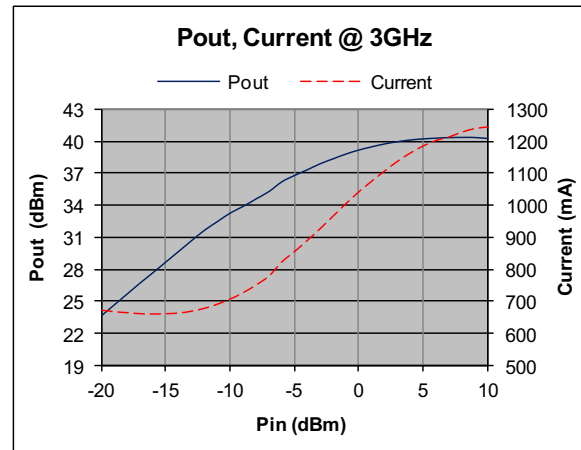
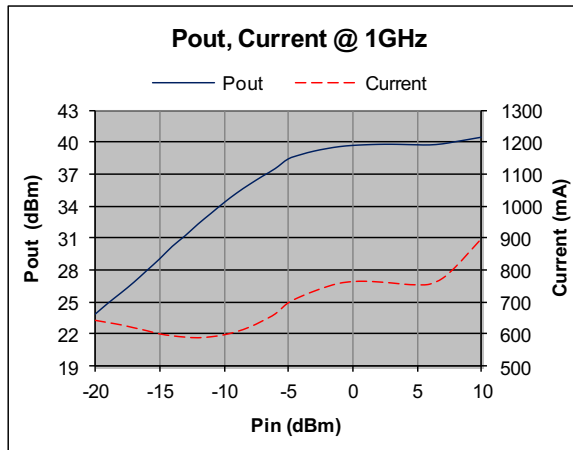


Output IP3 vs Frequency



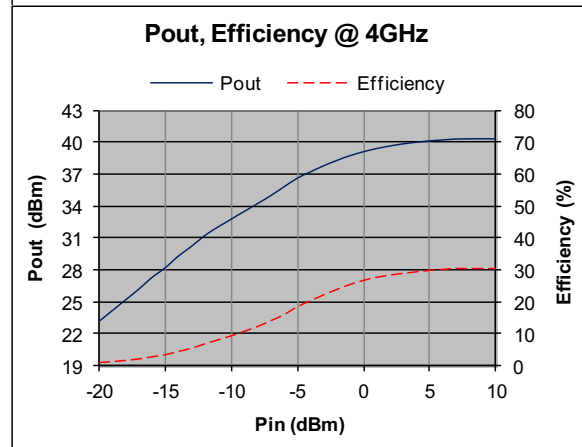
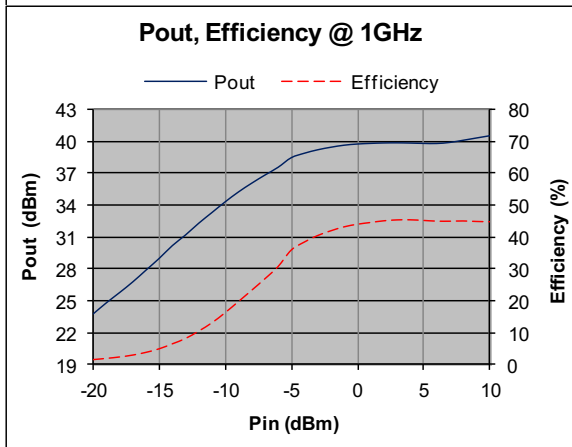
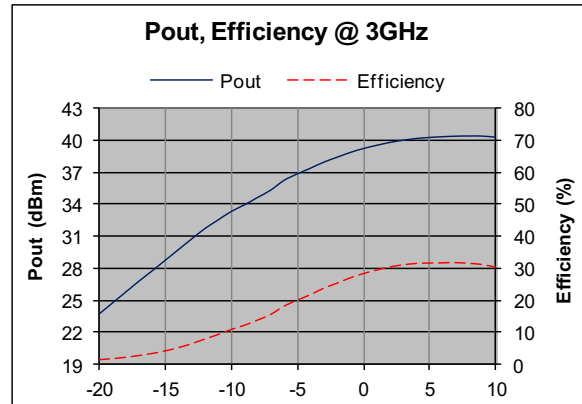
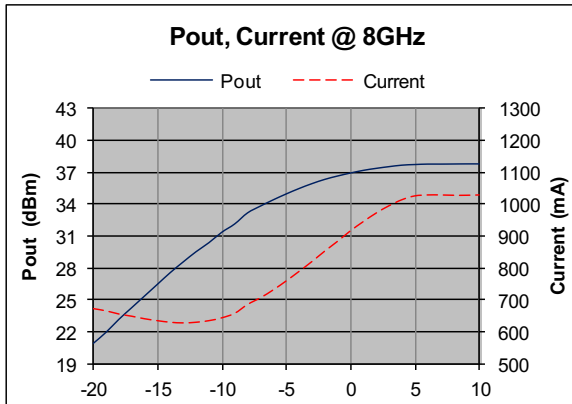
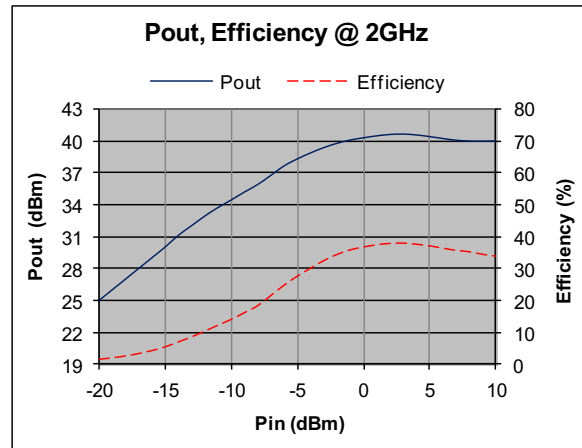
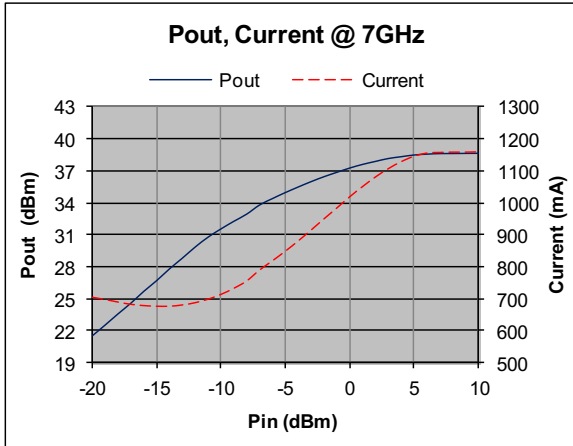
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Typical Performance @ +25°C



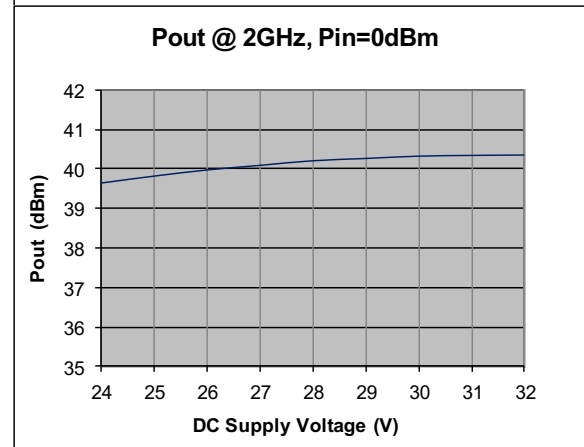
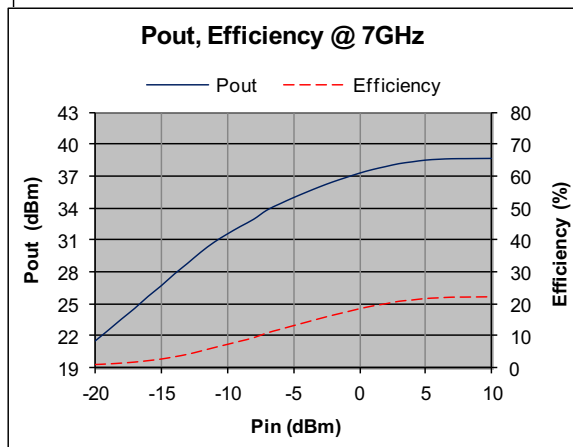
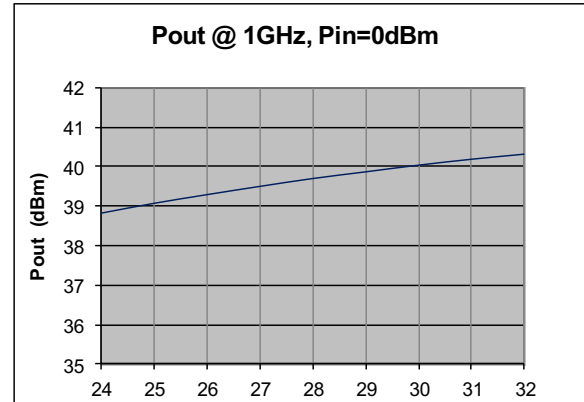
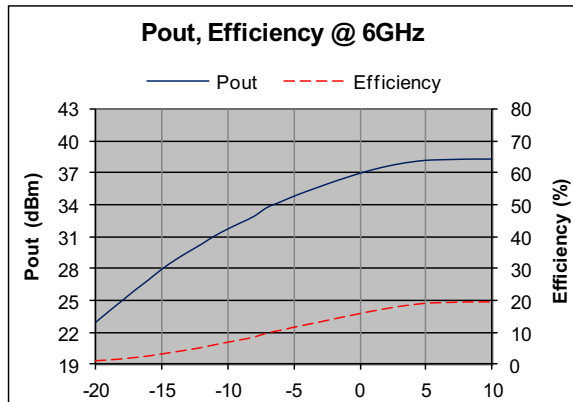
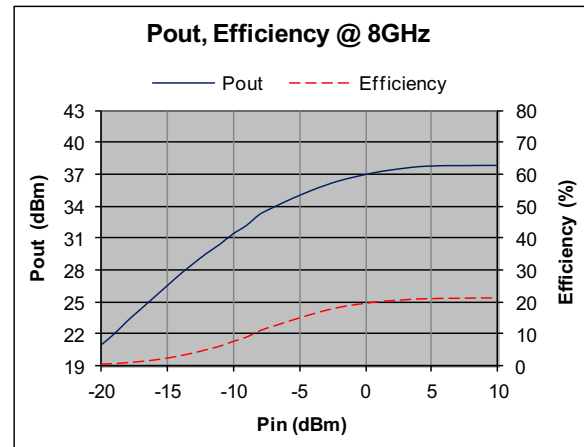
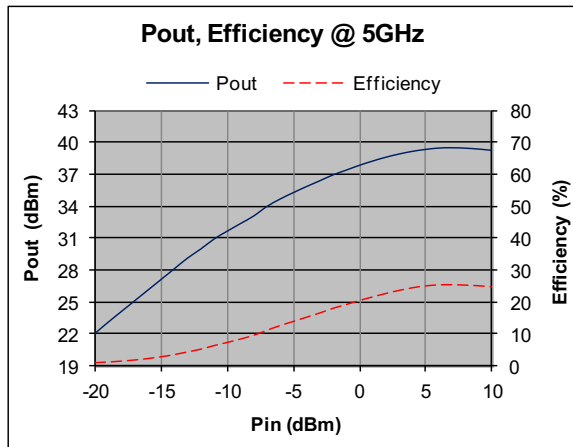
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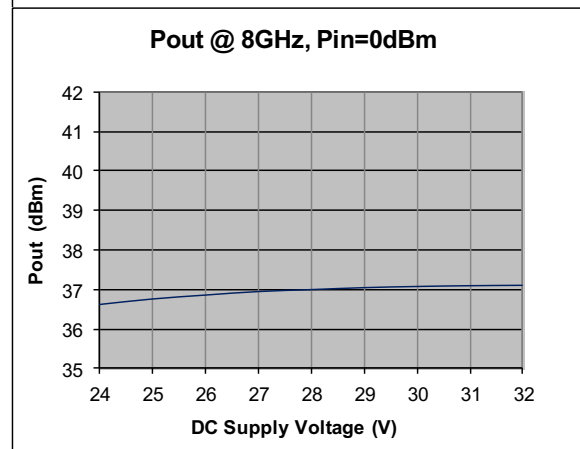
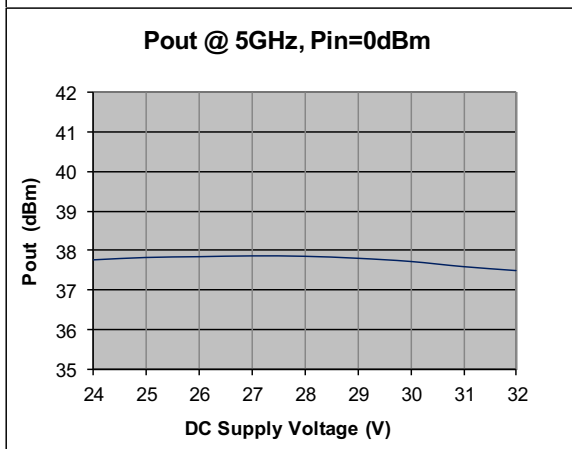
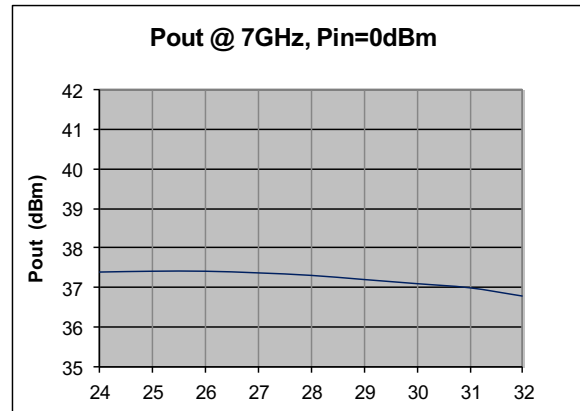
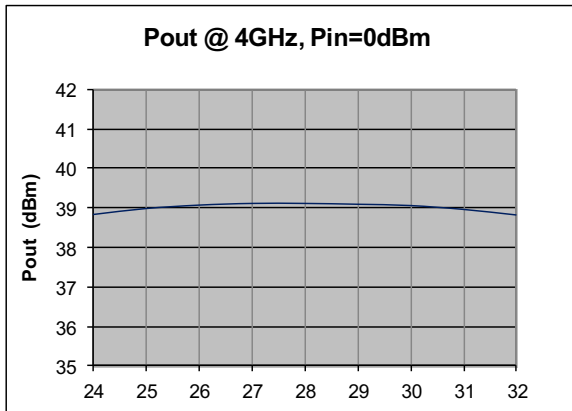
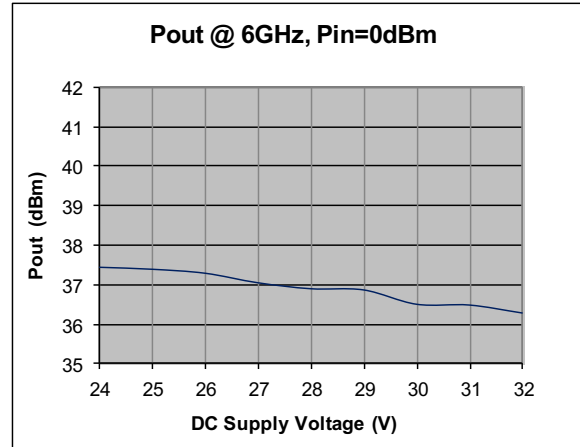
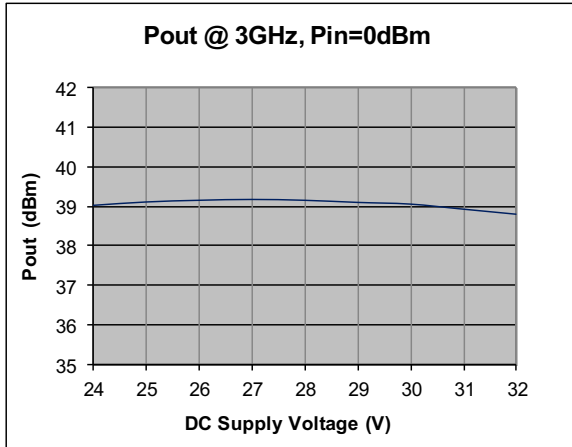
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Typical Performance @ +25°C



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Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|-------------------|
| Supply Voltage | +33V |
| RF Input Power | +15dBm |
| Operating Temperature | -20 °C to +65 °C |
| Storage Temperature | -40 °C to +100 °C |

ESD Sensitive Material

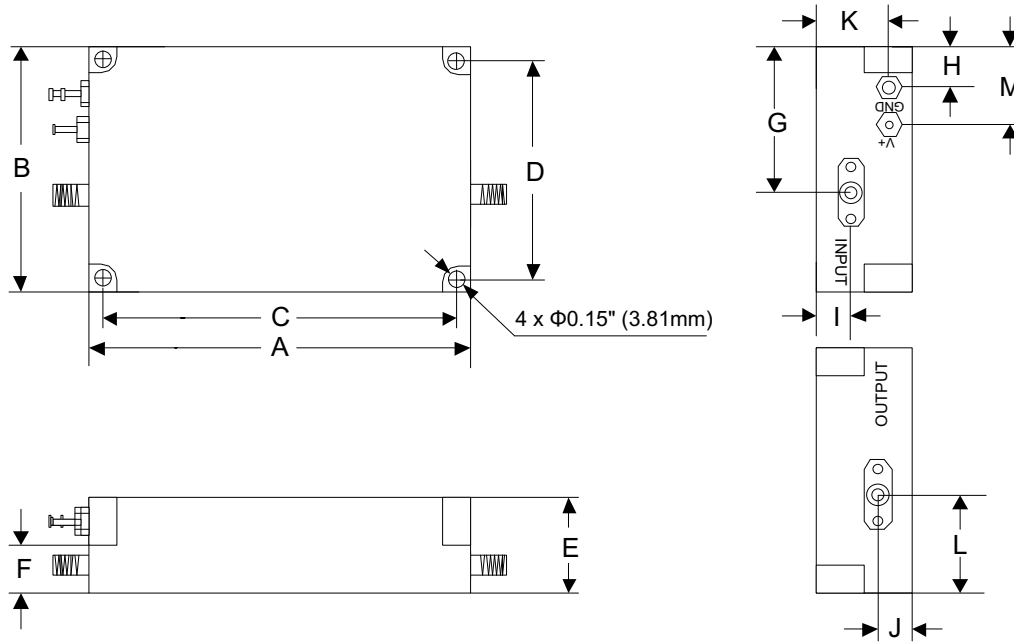


Warning and Caution:

- 1) Adequate heatsink must be used. Cooling Fan highly recommended. Amplifier operational baseplate temperature must be within datasheet operating temperature range.
- 2) Load must be connected to amplifier output at all time if DC power is ON.
- 3) If power amplifier connected to an antenna for signal transmission, it is strongly recommended to use a high power isolator or fixed attenuator between amplifier output and antenna input.

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Outline



Mounting screws recommended to use hex socket head cap #6x3/4"

| | A | B | C | D | E | F | G | H | I |
|------|--------|-------|-------|-------|-------|-------|-------|-------|------|
| Inch | 4.00 | 2.50 | 3.70 | 2.20 | 1.05 | 0.54 | 1.40 | 0.30 | 0.30 |
| mm | 101.60 | 63.50 | 93.98 | 55.88 | 26.67 | 13.72 | 35.56 | 23.37 | 7.62 |
| | J | K | L | M | | | | | |
| Inch | 0.30 | 0.75 | 1.10 | 0.70 | | | | | |
| mm | 7.62 | 19.05 | 27.94 | 17.78 | | | | | |