

MIL Grade High Power Amplifier

This is a High power, super broadband RF amplifier that operates from 20 MHz to 6 GHz, ideal for broadband military platforms as well as commercial applications because it is robust and offers high power over an extremely large bandwidth with decent power added efficiency. It was designed for broad band communication systems platforms. This amplifier has a typical saturated output power of 15-20 watts at room temperature. Noise figure at room temperature is 8.0 dB typical. It offers a typical gain of 53.5 dB with a typical gain flatness of ± 4.5 dB..

- Gallium Nitride Broadband Power Amplifier
- Operation from 20 MHz to 6.0 GHz min
- Small Signal Gain 53.5 dB typical
- 15-20 Watts PSat typical



Electrical Specifications

| PARAMETER | MIN. | TYP. | MAX | UNITS | SYMBOL |
|---|------|-----------|-----------|-------|---------------------|
| Operating Frequency | 20 | | 6000 | MHz | BW |
| Output Power CW | 15 | 20 | 22 | Watt | P _{SAT} |
| Small Signal Gain | 51.5 | 54 | 56 | dB | G _{1dB} |
| Input Power for Rated P _{OUT} | | 0 | 5 | dBm | P _{IN} |
| Switching Speed, 1kHz TTL @ P _{IN} = 0dBm | | | 1 | uSec | T _{ON/OFF} |
| Small Signal Gain Flatness | | ± 2.0 | ± 4.5 | dB | ΔG |
| Third Order Intercept Point 2-Tones, 33dBm/Tone., $\Delta = 100$ KHz | | +48 | | dBm | IP3 |
| Input Return Loss | | | -10 | dB | S ₁₁ |
| Noise Figure@ minimum attenuation | | | 8 | dB | NF |
| Harmonics @ Rated P _{1dB} = 10W | | -20 | -15 | dBc | H |
| Spurious Signals | | -70 | -60 | dBc | Spur |
| Operating Voltage | 26 | 28 | 32 | Volt | Vdc |
| Current consumption | | | 2.7 | Amp | I _{DC} |



ZHM20-6000/20

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| Mechanical Specifications | | | |
|---------------------------|----------------------------------|-------|--------|
| PARAMETER | VALUE | UNITS | LIMITS |
| Dimensions | 3.25 " X 2.45 " X 0.9 " | inch | Max |
| Weight | 2.1 | lb | Max |
| RF Connectors In/Out | SMA Female | | |
| DC Connectors | | | |
| Cooling | External Heatsink (Not Supplied) | | |

| Environmental Characteristics (Design to Meet) | | | | | |
|--|------|----------|--------|-------|------------------|
| PARAMETER | MIN. | TYP. | MAX | UNITS | SYMBOL |
| Operating Case Temperature | -20 | | +75 | °C | T _c |
| Storage Temperature | -40 | | +85 | °C | T _{stg} |
| Relative humidity (non-condensing) | | | 95 | % | RH |
| Altitude (MIL-STD-810F Method 500.4) | | | 30,000 | Feet | ALT |
| Shock / Vibration (MIL-STD-810F Method 516.5) | | Airborne | | | SH / VI |

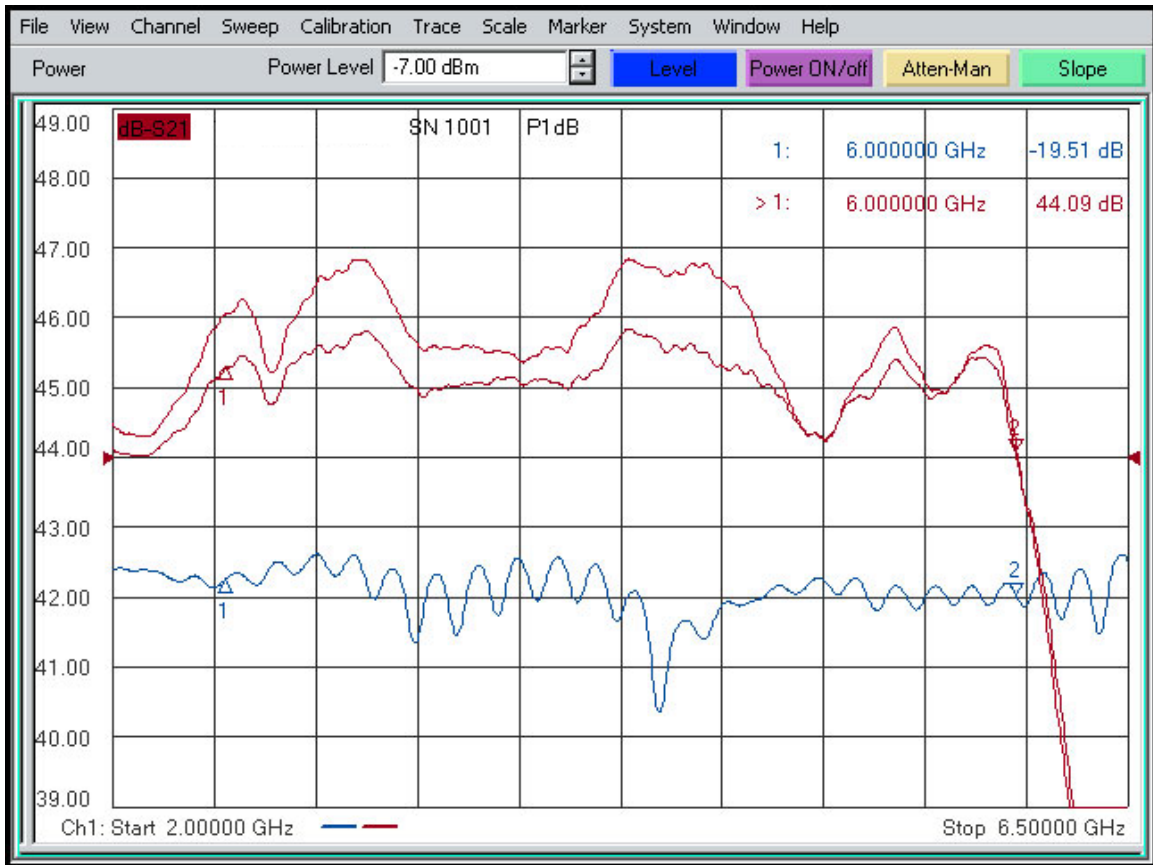
| Protections | | |
|-------------------------------|--|-----|
| Input Overdrive | +10 dBm | Max |
| Load VSWR @ 25 W output power | ∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous | Nom |

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TYPICAL PERFORMANCE PLOTS

Small Signal Gain and P1dB

Top Curve: Small Signal Gain @ PIN = -20dBm
 Middle Curve: Power Gain @ P1dB, PIN = -7.0dBm
 Reference: 44dB, 1dB/div.
 Bottom Curve: Input Return Loss
 Reference: 0dB, 10dB/div.



This graph is for reference only.