

MIL Grade High Power Amplifier

This is a high power, broadband, Gallium Nitride (GaN) RF amplifier that operates from 20 MHz to 520 MHz.

This PA is ideal for broadband military platforms as well as commercial applications because it is robust and offers high power over a multi-octave bandwidth. This amplifier was designed for broad band jamming and communication systems platforms. This amplifier operates with a base plate temperature of 85C with no degradation in the MTBF for the GaN devices inside. It is packaged in a modular housing that is approximately 3.4" (width) by 6.4" (long) by 1.0" (height). This amplifier has a typical P3dB of 100-125

watts at room temperature. Noise figure at room temperature is 10.0 dB typical. This amplifier offers a typical gain of 58 dB with a typical gain flatness of ± 2.0 dB. The power and gain flatness across the band is extremely flat for the bandwidth. Input VSWR is 2.0:1 maximum. Class AB quiescent current is ~ 2.0 amps typical employing a +28 Vdc supply.



- Gallium Nitride Broadband Power Amplifier
- Operation from 20 MHz to 520 MHz min
- Small Signal Gain 58 dB typical
- 50+% Typical Power Added Efficiency
- 125 Watts P3dB typical

Electrical Specifications

PARAMETER	MIN.	TYP.	MAX	UNITS	SYMBOL
Operating Frequency	20		525	MHz	BW
Output Power CW			120	Watt	P _{SAT}
Small Signal Gain	51.5	54	56	dB	G _{1dB}
Input Power for Rated P _{OUT}		0		dBm	P _{IN}
Switching Speed, 1kHz TTL @ P _{IN} = 0dBm			1	uSec	T _{ON/OFF}
Small Signal Gain Flatness			± 2.5	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			15	dB	NF
Harmonics @ Rated P _{1dB} = 10W			-9	dBc	H
Spurious Signals			-60	dBc	Spur
Operating Voltage	26	28	32	Volt	Vdc
Current consumption			15	Amp	I _{DC}



ZHM0.2-525/120

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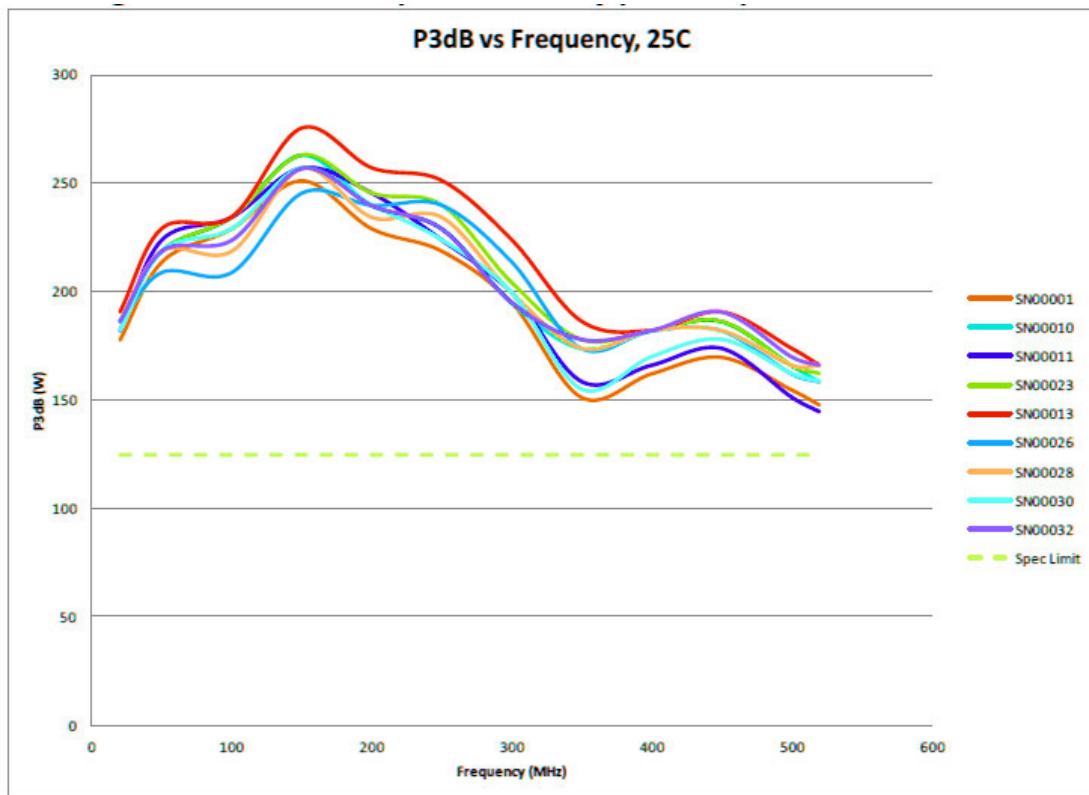
Mechanical Specifications			
PARAMETER	VALUE	UNITS	LIMITS
Dimensions	3.4" X 6.4" X 1.0"	Inch	Max
Weight	2.0	lb	Max
RF Connectors In/Out	SMA Female		
DC Connectors			
Cooling	External Heatsink (Not Supplied)		

Environmental Characteristics (Design to Meet)					
PARAMETER	MIN.	TYP.	MAX	UNITS	SYMBOL
Operating Case Temperature	-40		+85	°C	T _c
Storage Temperature	-40		+85	°C	T _{stg}
Relative humidity (non-condensing)			95	%	RH
Altitude (MIL-STD-810F Method 500.4)	10,000		30,000	Feet	ALT
Shock / Vibration (MIL-STD-810F Method 516.5)		Airborne			SH / VI

Protections		
Input Overdrive	+15 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



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