



The ZHM-3G1 is a two stage MMIC power amplifier designed for broadband high power wideband frequency applications. It works from DC - 3 GHz. It can be used as either a driver or an output stage amplifier. This device is fully matched input and output to 50 Ω which eliminates any sensitive external RF tuning components. The ZHM-3G1 is fabricated using a high reliability pHEMT process, to realize good power added efficiency and gain. The pHEMT process features full passivation for high performance and reliability.

Applications:

Wideband and narrowband defense and commercial communication systems

- General Purpose RF Power
- Jammers
- Radar
- Professional radio systems
- WiMAX
- Wideband amplifiers
- Cellular infrastructure

Product Features:

- Frequency: DC to 3.5 GHz
- Linear Gain: >17 dB at 3.0 GHz
- Operating Voltage: 28 V
- Output Power (P3dB): >7 W at 3.5 GHz
- Lead-free and RoHS compliant
- Low thermal resistance package

Specifications:

Sym Parameter Value	Sym Parameter Value	Sym Parameter Value
V+	Positive Supply Value ²	28
I	Positive Supply Current	0.8 A
P _D	Power Dissipation	10W
T _{CH}	Operating Channel Temperature ²	200°C

Electrical Specifications:

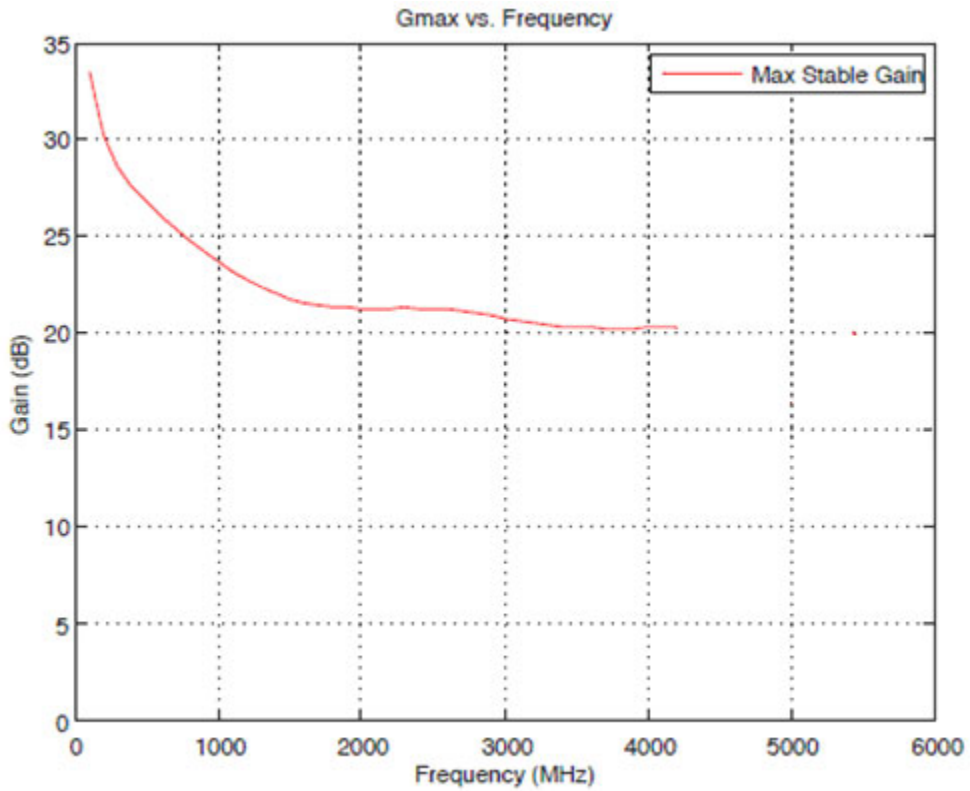
Recommended operating conditions apply unless otherwise specified: T_A= +25 °C

RF Characteristics

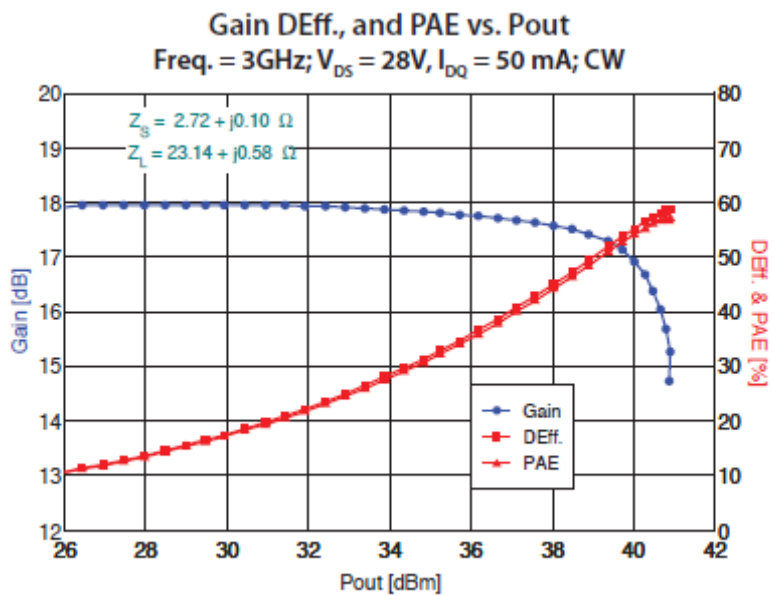
Characteristics	Symbol	Units	Min.	Typ.	Max.
Linear Gain	G _{LIN}	dB	15.5	16.9	
Output Power at 3 dB Gain Compression	P _{3dB}	W	8.9	11.0	
Drain Efficiency at 3 dB Gain Compression	DE _{3dB}	%	55	58	
Power-Added Efficiency at 3 dB Gain Compression	PAE _{3dB}	%	50	53	
Gain at 3 dB Compression	G _{3dB}	dB	12.5	13.9	
Impedance Mismatch Ruggedness	VSWR	10:1			

Small-Signal Gain

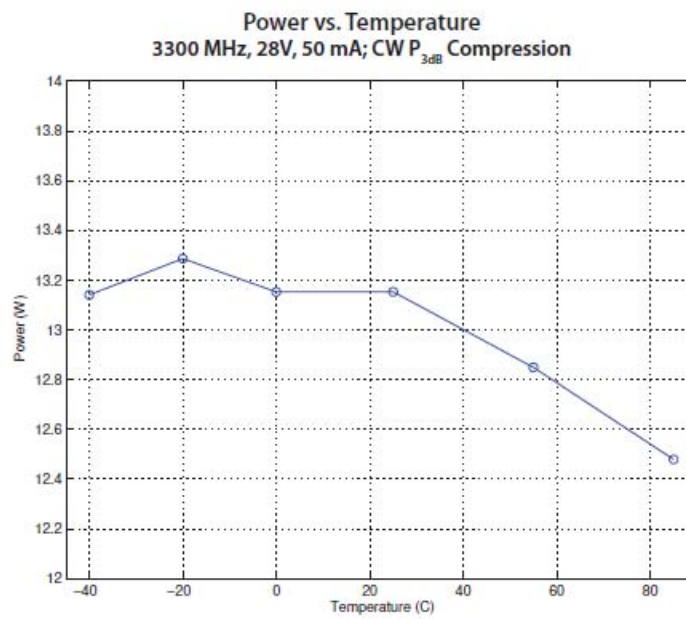
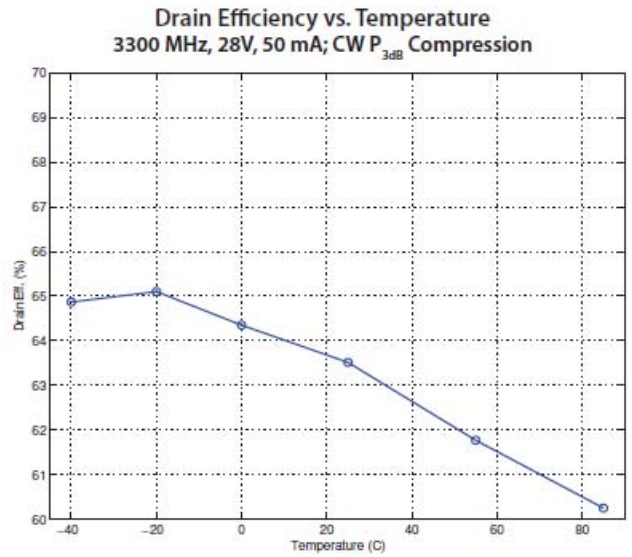
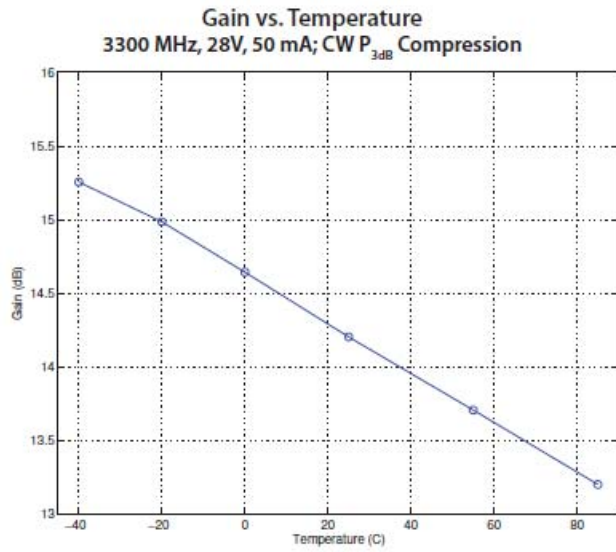
Maximum Stable Gain $V_{DS}=28V, I_{DQ}=50\text{ mA}$



Typical Performance: Gain, Efficiency and Output Power

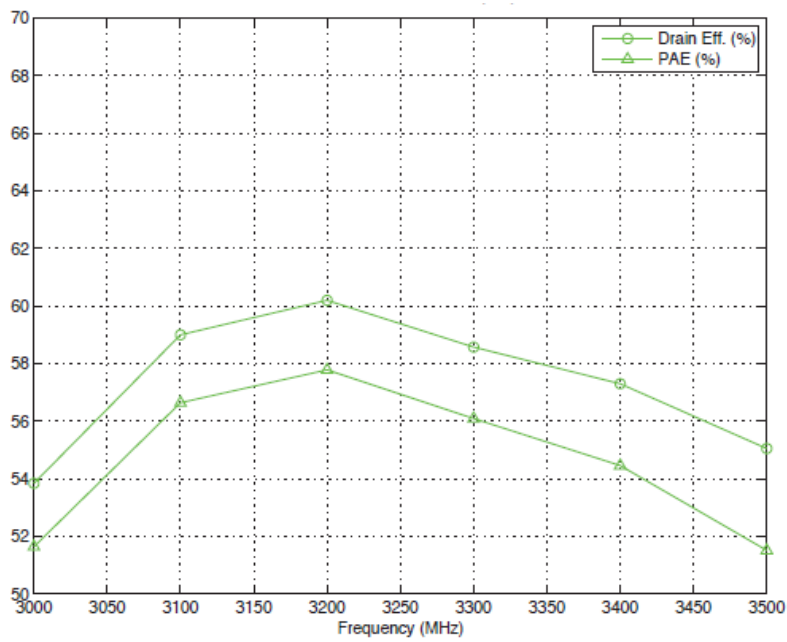


Performance over Temperature: Gain, Efficiency and Output Power



DC to 3.5 GHz

P3dB Compression in Narrowband Fixture 28V, 50mA; 200 μ sec – 20% duty-cycle pulse



P3dB Compression in Narrowband Fixture 28V, 50mA; 200 μ sec – 20% duty-cycle pulse

