

Key Technical Indicators & Applications

7~12GHz Power Amplifier Package

Frequency Range: 7-11.5GHz

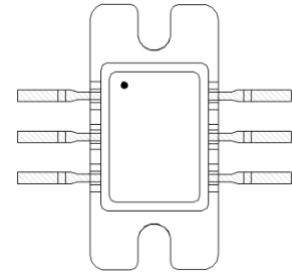
Typical Small Signal Gain: 32dB

Typical Output Power: 47.5dBm

Typical Power Adder Efficiency: 42%@7-10GHz,
37%@10-11.5GHz

Supply Voltage: 28V, -2.2V

For applications in microwave transceiver components and wireless communications.



Description:

The CGHV96050F2-CN package chip is a high performance 7 to 12 GHz high power amplifier, manufactured using the Gallium Nitride High Electron Mobility Transistor (HEMT) process. The chip is grounded through a backside metal via hole. All chip products have been 100% RF measured, and the CGHV96050F2-CN package operates on dual supplies with a drain voltage of $V_{ds}=28V$, providing 47.5dBm of output power within the 7 to 12GHz frequency range.

Absolute Maximum Ratings :

Symbol	Parameter	Rating	Unit
Vd	Drain-source Voltage	35V	
Id	Saturated Drain Current	5A	
Vg	Gate-source Voltage	-1.5V	
Ig	Gate Current	150mA	
Pd	DC Power Dissipation	120W	
Pin	Input signal power	30dBm	
Tch	Operating temperature	150°C	
Tm	Sintering temperature	310°C	30s, N ₂ Protect

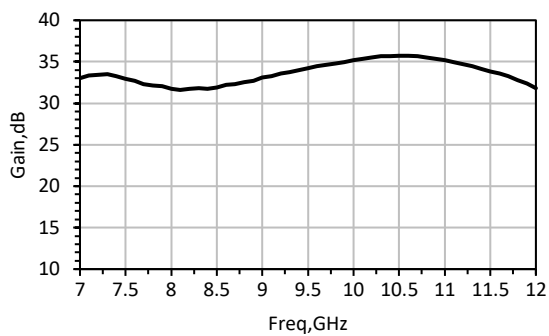
【1】 Exceeding any of these maximum limits may cause permanent damage.

Electrical Characteristics : (TA=25°C)

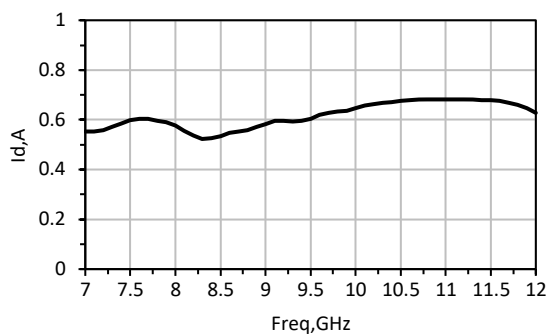
Symbol	Parameter	Text Condition	Rating			Unit
			Min	Typ	Max	
Gain	Small Signal Gain	Vd=28V Vg=-2.2V F: 7~12GHz duty cycle: 10%	-	32	-	dB
VSWRi	Input VSWR		-	-	2	
Psat	Saturated output power		-	47.5	-	dBm
PAE	Power added efficiency		-	40	-	%
Id	Working Current		0.4	0.5	0.65	A

Typical Performance (duty cycle: 10%)

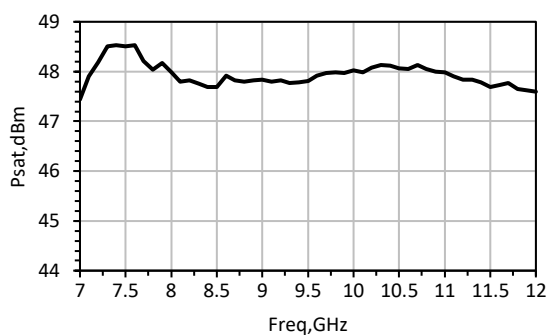
Linear Gain Curve



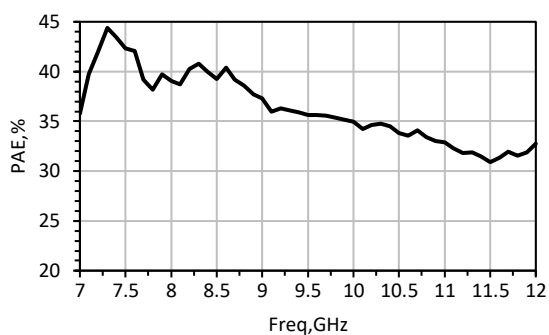
Drain Current Curve



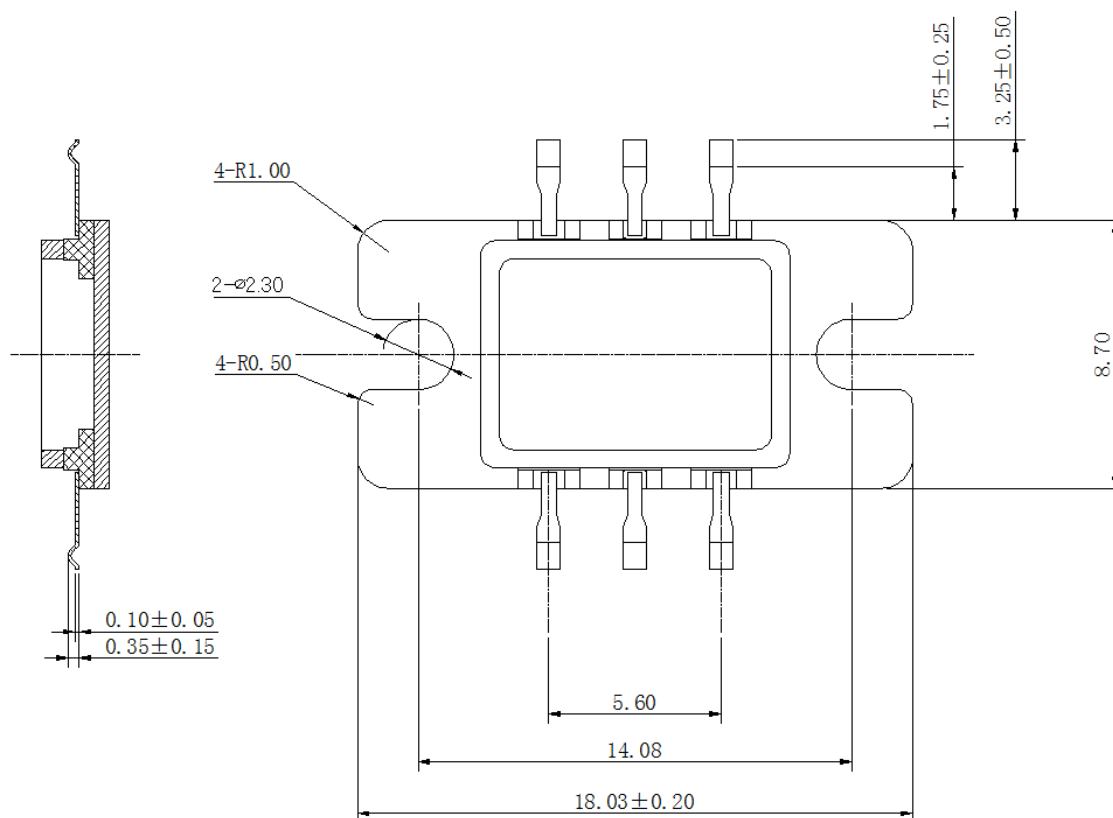
Output power curve



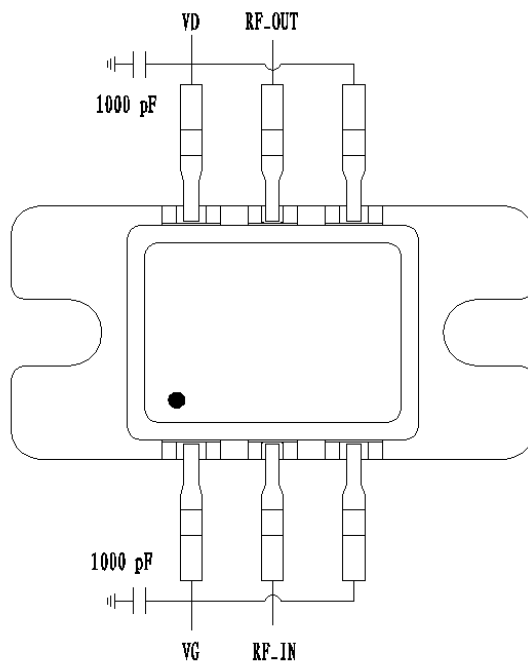
Efficiency Curve



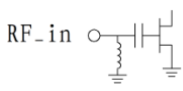
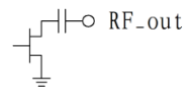
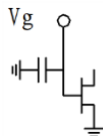
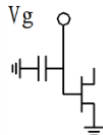
Package Dimension Diagram (Unit : mm)



Package Assembly Diagram



Pin Definitions :

Pin	Function	Equivalent Circuit
RF_IN	RF signal input, external 50Ω system, if there is an applied DC at this voltage point, isolation capacitor required.	
RF_OUT	RF signal output, external 50Ω system, no isolation capacitors required.	
VG	Amplifier gate bias, external 100pF, 1000pF capacitor required.	
VD	Amplifier drain bias, external 100pF, 1000pF capacitor required.	

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