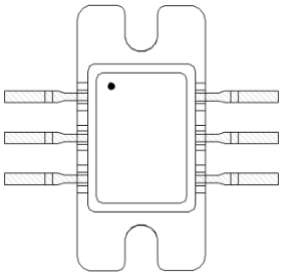
Key Technical Indicators & Applications

- 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.

7-12GHz Power Amplifier Package



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 Vds=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℃	
Tm	Sintering temperature	310℃	30s，N_2 Protect

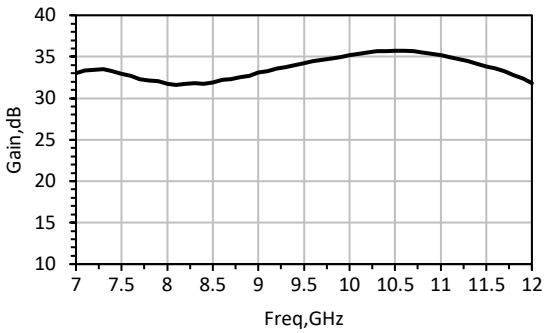
【1】Exceeding any of these maximum limits may cause permanent damage.

Electrical Characteristics：（TA=25℃）

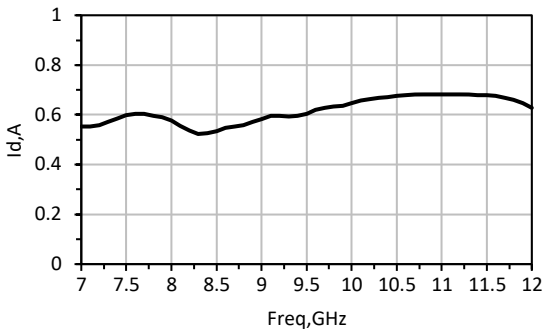
Symbol	Parameter	Text Condition	Rating			Unit
			Min	Typ	Max	
Gain	Small Signal Gain	Vd＝28V Vg=−2.2V F：7～12GHz duty cycle: 10%	−	32	−	dB
VSWRi	Input VSWR		−	−	2	
Psat	Saturated output power		−	47.5	−	dBm
PAE	Power added efficiency		−	40	−	%
Id	Working Current		0.4	0.5	0.65	A

Typical Performance（duty cycle: 10%）

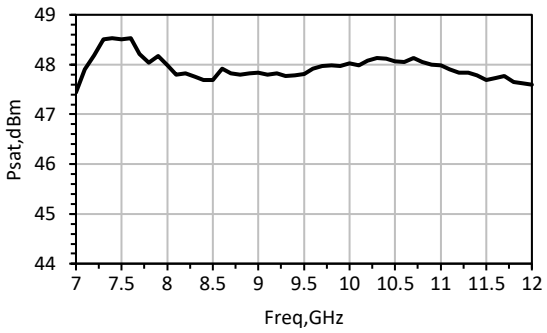
Linear Gain Curve



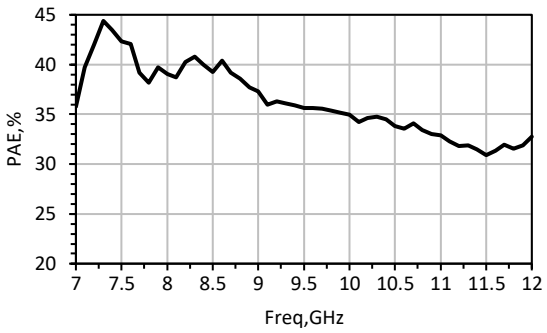
Drain Current Curve



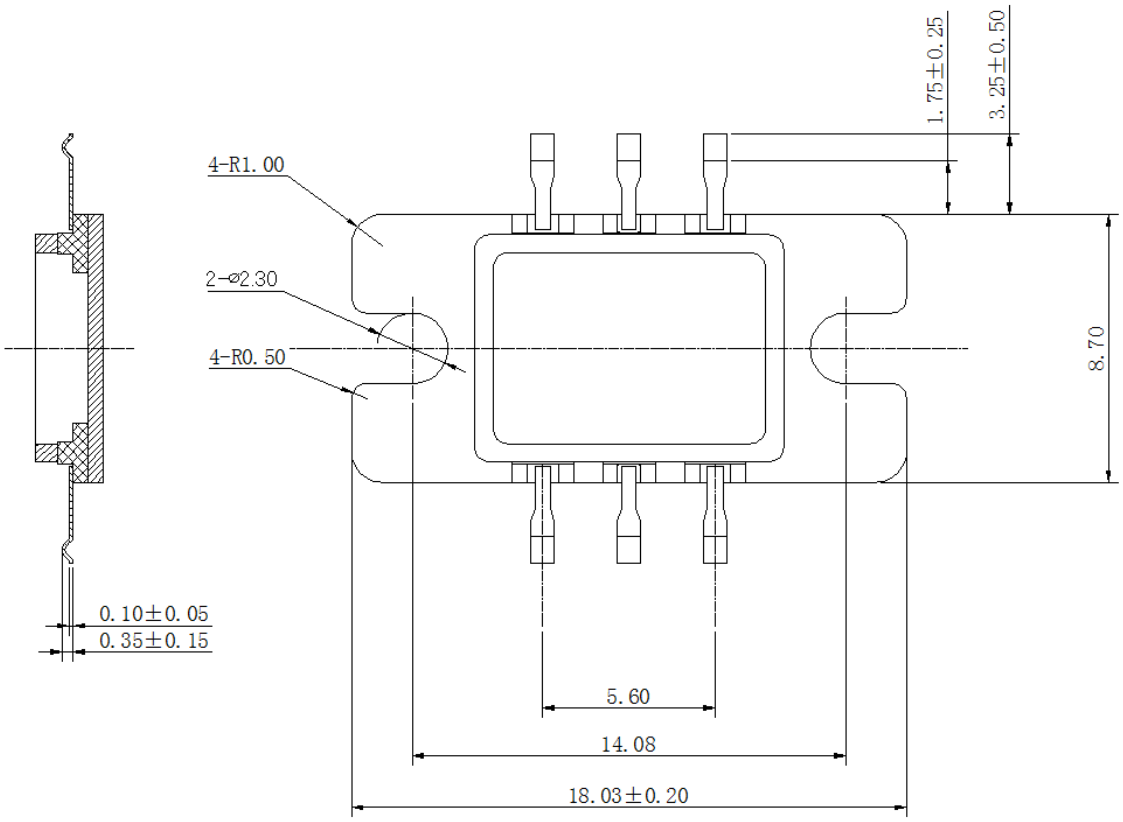
Output power curve



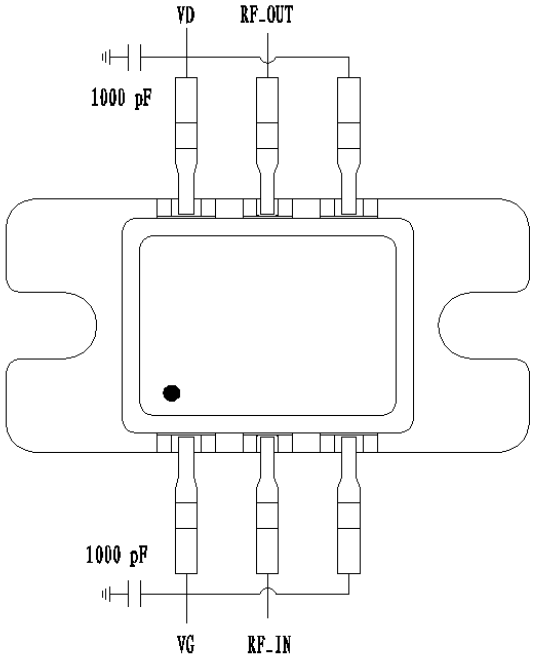
Efficiency Curve



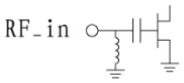
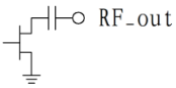
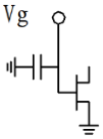
Package Dimension Diagram（Unit ：mm）



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.