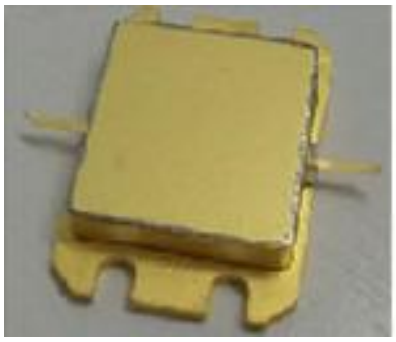
X-band GaN internal matching power tube, based on fully localized material and process of GaN device preparation, using advanced in-plane matching synthesis technology and mature thin film hybrid integration process, frequency can cover GHz9.0 ~ 10.0GHz band, adapt to pulse operating conditions, to meet the satellite communications, telemetry and remote control and other high-performance RF / microwave system of broadband, high power, high efficiency and other environmental adaptability requirements.

Performance Features

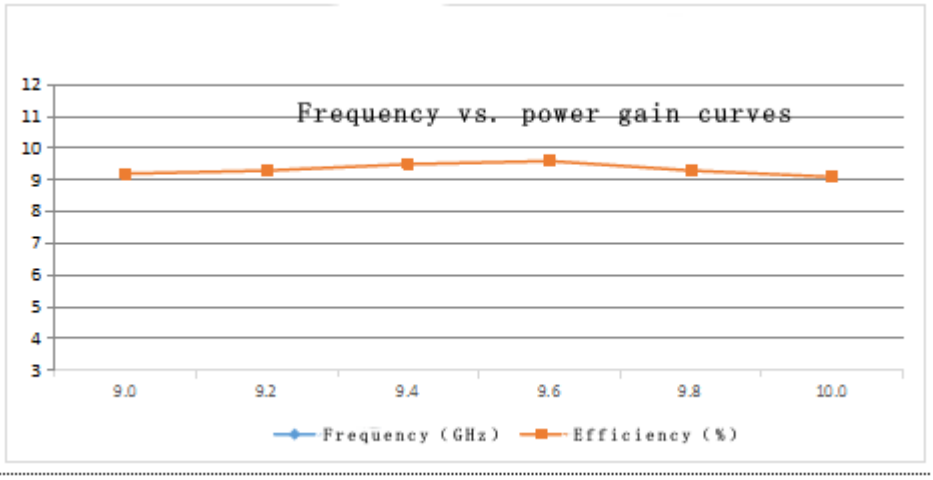
- Operating band range
  : 9.0GHz~10.0GHz
- High power gain: 9.0dB
- High Power: 54dBm
- High efficiency: 35%
- Input and output impedance
  : 50Ω
- Working mode: Pulse
- Package: Standard metal power tube housing package

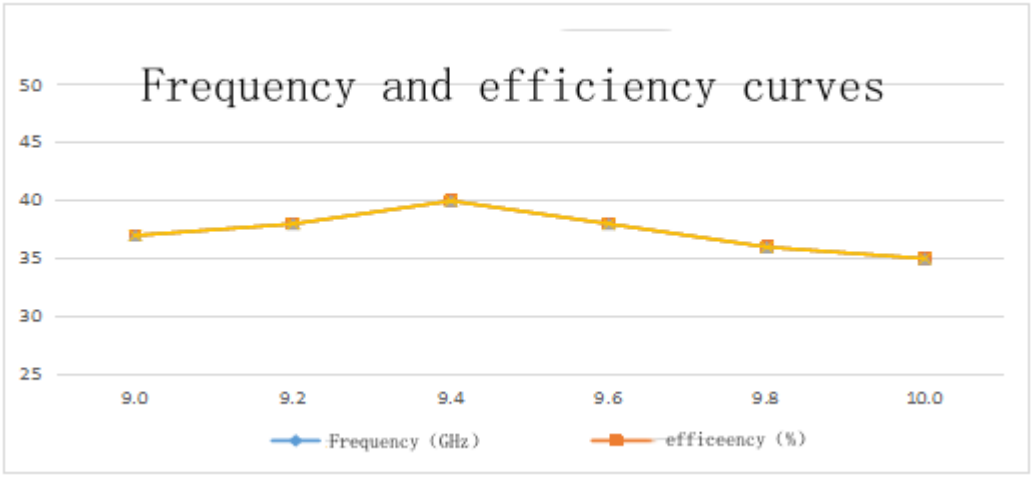


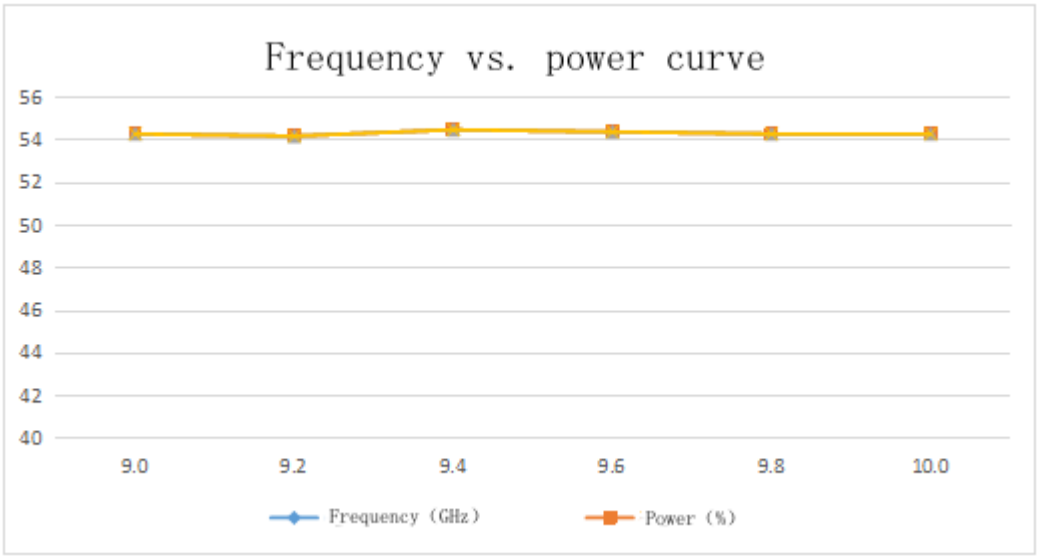
Technical specifications (Vds=+40V, Vgs=-1.8V~-3.0V adjustable IDQ=0.8A Ta=25°C)

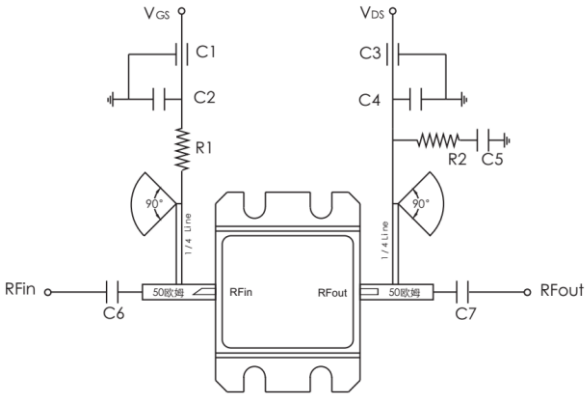
Parameter Name	Unit	Minimum value	Typical values	Maximum value	Conditions
Operating frequency	GHz	9.0		10.0	
Operating bandwidth	GHz		1.0		
Output power	dBm	53.5	54.0	-	
Input power	dBm		45.0		
Power Gain	dB		9.0		
Gain Flatness	dB			1.5	
Efficiency	%		35%		

Pulse Width	us		200		
Duty Cycle	%		20		
Operating Voltage	V		40	50	
Maximum input power	dBm		47		
Thermal resistance	˚C/W		0.6		
Operating temperature	˚C	-45		+70	Top
Storage temperature	˚C	-55		+125	Tst









Recommended Circuits

This product is an electrostatic sensitive device, please pay attention to anti-static when storing and using; when using, please ensure good grounding; when adding power, please strictly follow the order of negative first and then positive, when adding power, first add the gate voltage and then add the drain voltage, when removing power, first drop the drain voltage and then drop the gate voltage;

When using the amplifier tube need to install the tube shell base on the heat sink to ensure that the amplifier tube good heat dissipation. Power amplifier installation before the need to check the hot sink amplifier tube installation area is flat, no foreign matter. The new heat sink needs to use alcohol to scrub the installation area.

The recommended installation method is to weld the amplifier tube base directly to the heat sink. The welding temperature should not exceed 245℃ and the welding area should be larger than 80% of the base.

In some cases (e.g. low power consumption or pulsed use conditions), the amplifier tube with metal flange on the base can be mounted on the heat sink by screwing the flange with a torque of 4.6 kgf.cm. The mounting torque is 4.6kgf.cm. When mounting, it is necessary to add thermal grease between the amplifier tube and the heat sink, and the area covered by the thermal grease is about 1/3 of the base.

The amplifier input leads and output leads need to be soldered together with the PCB circuit to ensure good contact between the amplifier and the PCB.

External dimensions (unit: mm)