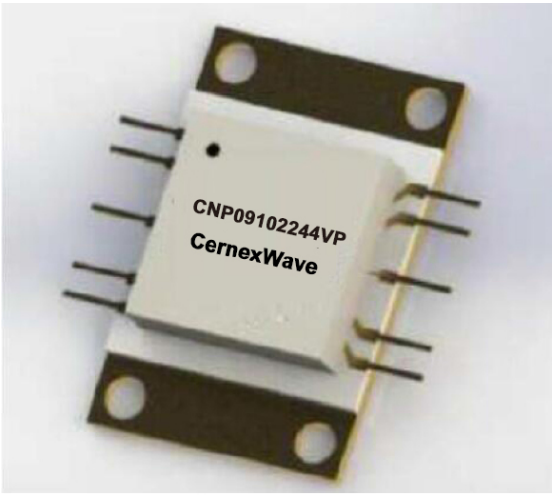


CNP09102244VP

9.5 to 10.5 GHz – 22dB – 44.5dBm

HPA in Flange Package

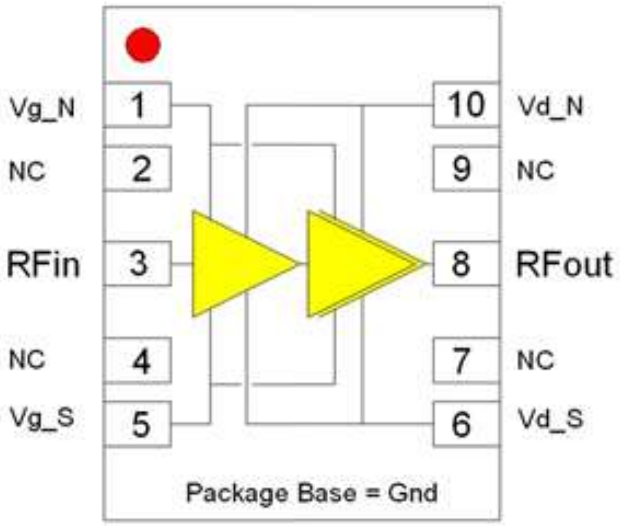
Description

The CNP09102244VP is a 2 stages analog High Power Amplifier operating in the frequency range 9.5 to 10.5 GHz. The device is capable of 44.5dBm Saturated Output Power, when driven by 1.2W at RF Input.

This amplifier uses a leaded package with a thermally conductive coper composite base. A plastic lid, fixed with epoxy glue, closes the package.

The module has been optimized to provide high efficiency (PAE > 35%) with Vd=+28.0V.

Functional Block Diagram



Features

- 2 stages High Power Solid State GaN Amplifier
- Wide band : 9.5 to 10.5 GHz
- High Output Psat : 44.5dBm (9.5 to 10.5 GHz)
- Large signal gain: 15 dB at PSat
- Flatness from 9.5 to 10.5 GHz: less than 1dB
- High linear gain : 22dB typique
- 50Ω, AC coupled RF input and output,
- Typical Supply Vd = 28V, IDQ = 500mA, Vg=-3V
- Coper composite base to reduce thermal resistance
- Dimensions : 11.43 x 17.32 x 3.15 mm^3

Applications

- X band High Power amplifier
- Broadband communication
- Radar
- Test and measurement

Ordering information

Product code
CNP09102244VP : Flange package HPA

DC features

Parameters	Symbol	Min	Typ	Max	Unit
Drain supply voltage : Vd_N, Vd_S	Vd		28		V
Gate supply voltage : Vg_N, Vg_S	Vg		-3		V
Supply quiescent current (1)	Idq		0,5		A
Supply drain current at Saturation	Id_Sat		3		A

(1) – Can be adjusted by tuning Vg.

Main Characteristics

Tamb = 20°C, Vd = +28V, Idq = 0.5 A, measured in pulsed mode : pulse width 10µS and duty cycle 10%.

Parameters	Symbol	Min	Typ	Max	Unit
Frequency range	F	9.5		10.5	GHz
Saturated output power	PSat		44.5		dBm
Large signal gain	GL		15		dB
Power added efficiency at PSat	PAE_PSat		35		%

Measurement reference planes are the INPUT and OUTPUT plans of Flange Package.

Environment Parameters

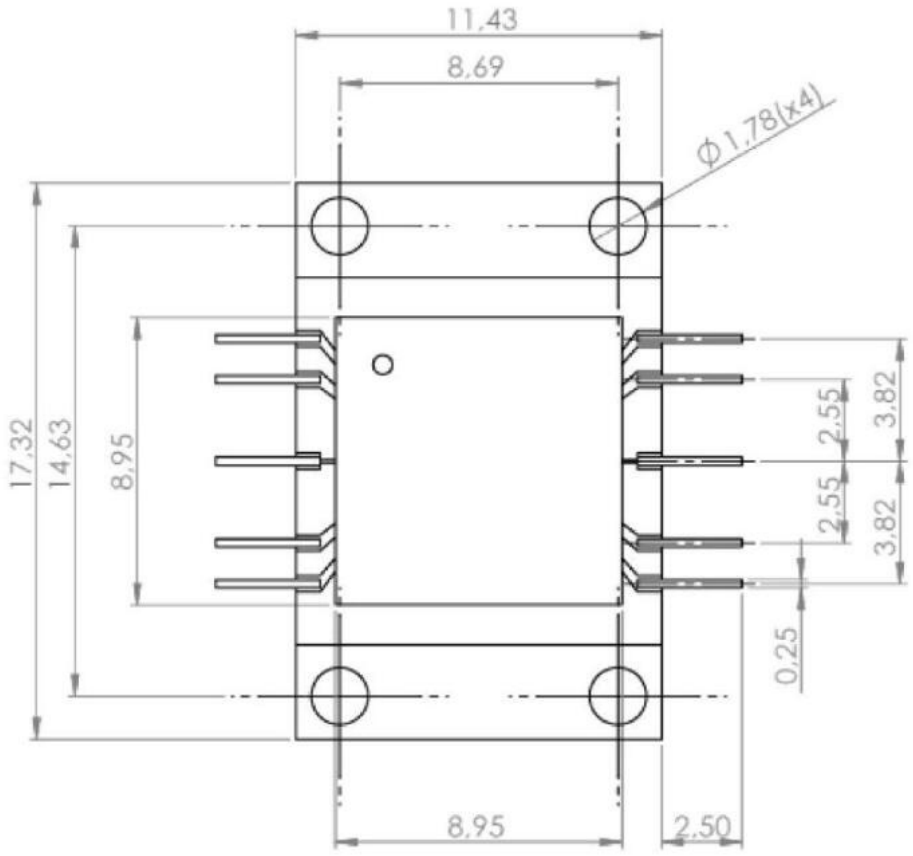
Parameters	Symbols	Min	Max	Unit
Storage temperature	Tstg	-55	+125	°C
Operating temperature	Top	-40	+70	°C

Absolute maximum ratings

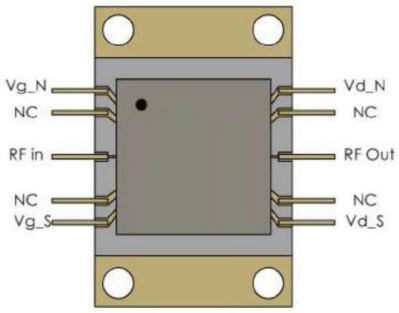
Parameters	Symbols	Min	Max	Units
Supply drain voltage	Vd		31	V
Supply gate voltage	Vg	- 5	- 2.5	V
Rf input power	Pin max		+33	dBm
Supply quiescent current	Idq		0.7	A
Supply current at PSat	Id_PSat		3.5	A

Operation of the device above any of these parameters may cause permanent damage.

Mechanical Drawing



Pin-out



1	Vg_N	10	Vd_N
2	NC	9	NC
3	RF in	8	RF out
4	NC	7	NC
5	Vg_S	6	Vd_S

Handling

This product is sensitive to electrostatic discharge and should not be handled except at a static free workstation. Take precautions to prevent ESD; use wrist straps, grounded work surfaces and recognized anti-static techniques when handling the CNP09102244VP device.