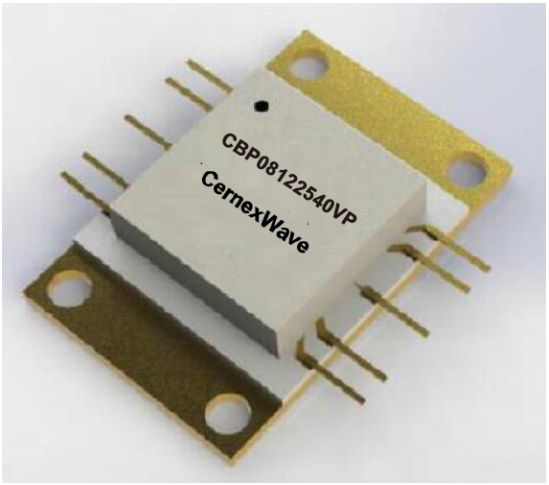


CBP08122540VP

8.5 to 12 GHz – 25dB – 40dBm

HPA in Flange Package

Description

The CBP08122540VP is a 3 stages analog High Power Amplifier operating in the frequency range 8.5 to 12 GHz. The device is capable of +40dBm output power at Psat.

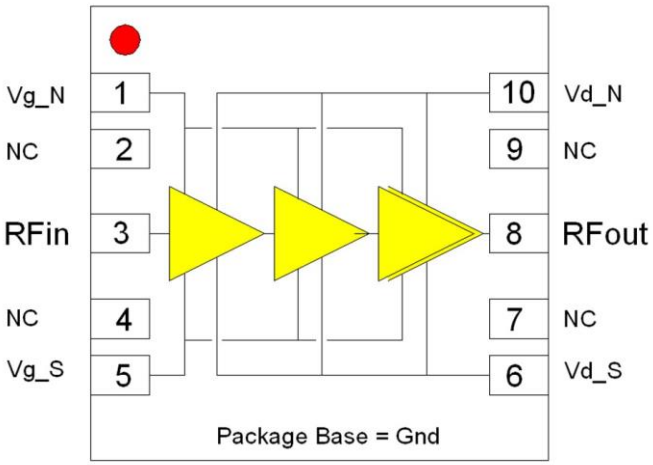
This amplifier uses a leaded package with a thermally conductive coper composite base. A plastic lid, fixed with epoxy glue, closes the package.

The module has been optimized to provide high efficiency (PAE > 30%) with Vd=+8.0V.

Features

- 3 stages High Power pHEMT GaAs MMIC
- Wide band : 8.5 to 12 GHz
- High Output Psat : +40dBm (8.5 to 11 GHz)
- High linear gain : 25dB typique
- 50Ω, AC coupled RF input and output,
- Supply (saturation) : 4.5A @ +8.0V; Vg= -0.7V
- Coper composite base to reduce thermal resistance
- Dimensions : 11.43 x 17.32 x 3.15 mm^3

Functional Block Diagram



Applications

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

Ordering information

Product code
CBP08122540VP : Flange package HPA

DC Features

Parameters	Symbol	Min	Typ	Max	Unit
Drain supply voltage : Vd_N, Vd_S	Vd		8		V
Gate supply voltage : Vg_N, Vg_S	Vg		-0.7		V
Supply quiescent current (1)	Idq		3.3		A
Supply drain current at 4dB compression	Id_4dBc		4.5		A

(1) – Can be adjusted by tuning Vg.

Main Characteristics

Tamb = 20°C, Vd = +8V, Idq = 3.3 A, measured in pulsed mode : pulse width 10µS and duty cycle 10%.

Parameters	Symbol	Min	Typ	Max	Unit
Frequency range	F	8.5		12	GHz
Saturated output power : 8.5 to 11 GHz	PSat		40		dBm
Saturated output power : 11 to 12 GHz			39		dBm
Linear gain	G		25		dB
Power added efficiency at 4dB compression	PAE_4dBc		32		%

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

Environment Parameters

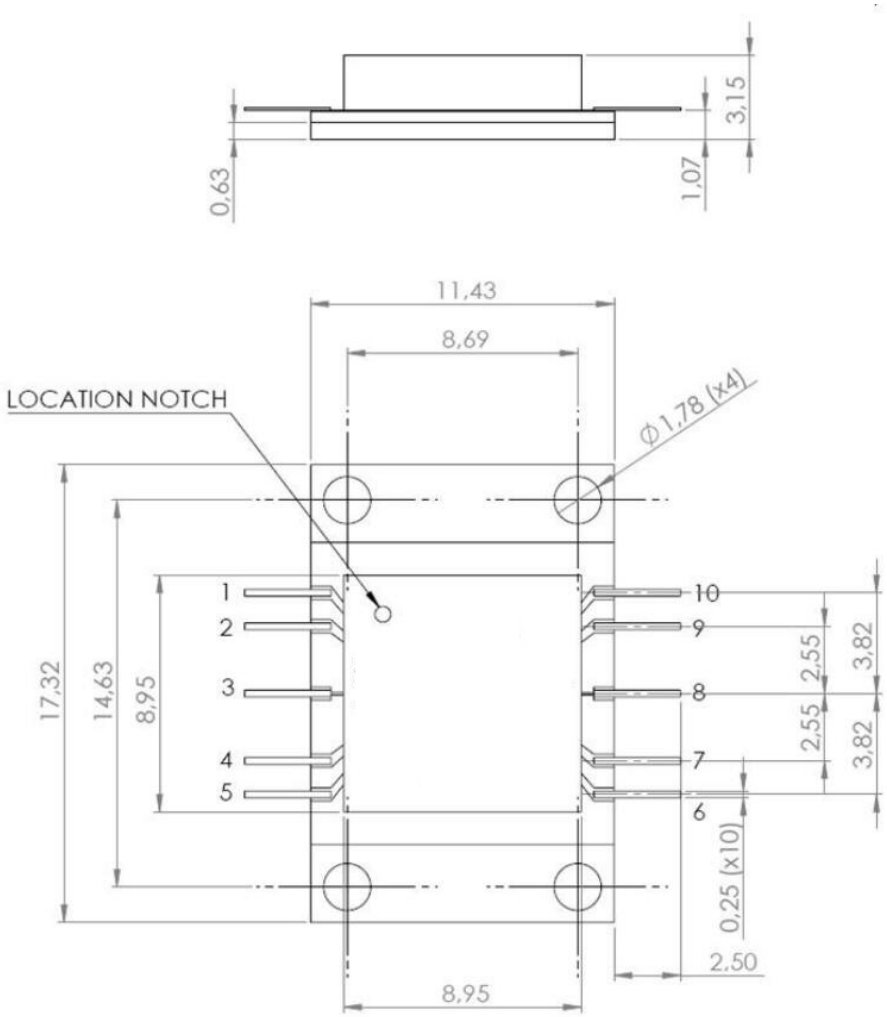
Parameters	Symbols	Min	Max	Unit
Storage temperature	Tstg	-55	+125	°C
Operating temperature	Top	-40	See MTTF	°C

Absolute Maximum Ratings

Parameters	Symbols	Min	Max	Units
Supply drain voltage	Vd		9	V
Supply gate voltage	Vg	-1.5	-0.5	V
Rf input power	Pin max		+23	dBm
Supply quiescent current	Idq		3.5	A
Supply current at 4dB compression	Id_4dBc		4.8	A

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

Pin-out And Mechanical Drawing

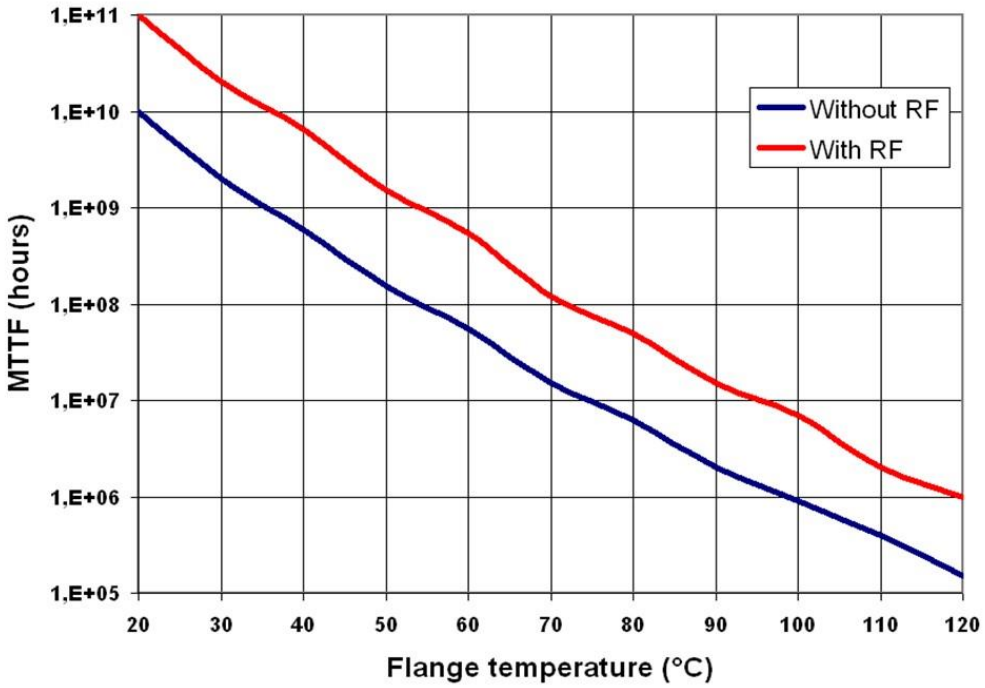


[GCH1]

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

MTTF

CBP08122540P MTTF/10% Duty Cycle



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 CBP08122540VP device.