

XT3905



GaAs pHEMT MMIC DRIVER AMPLIFIER
2GHz~8GHz

Rev 2.0

Features

- Frequency: 2GHz~8GHz
- Gain: 17dB
- Output P_{1dB}: 15dBm
- Supply Voltage: +5V@56mA
- Die Size: 1.74mm×1.22mm×0.1mm

Typical Applications

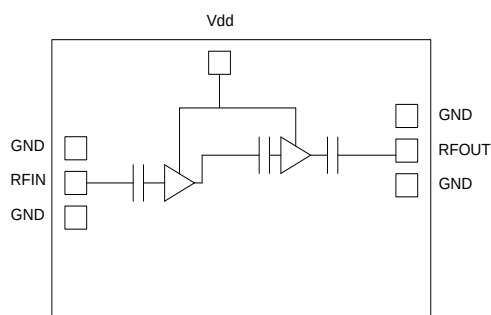
- Point-to-Point Radios
- SATCOM
- Military and Space
- Test and Measurement
- Radar

General Description

XT3905 is a wideband GaAs MMIC driver amplifier which operates between 2GHz~8GHz. The amplifier provides 17dB of gain and 15dBm Output P_{1dB} power from a +5V supply voltage.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

Functional Diagram



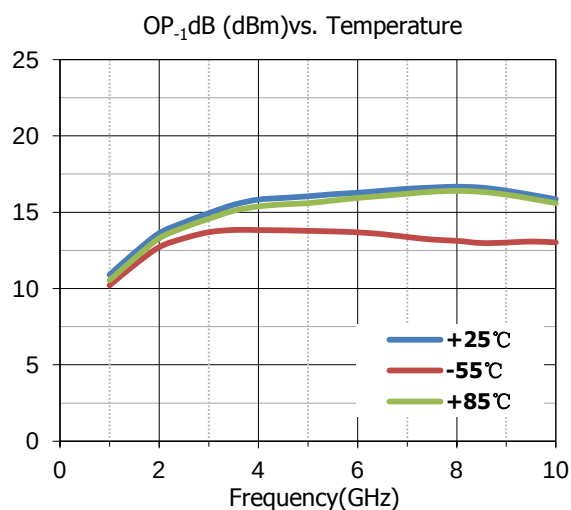
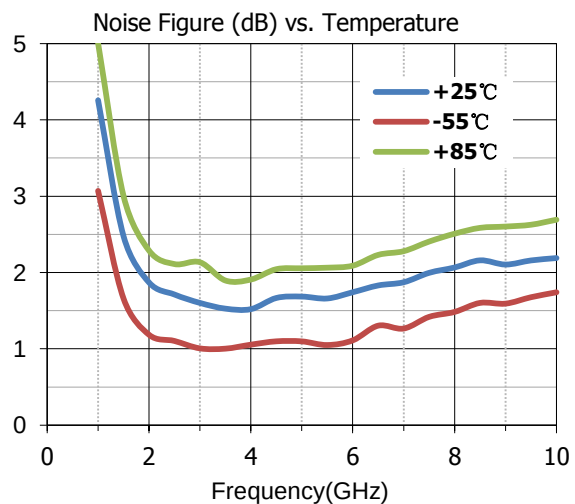
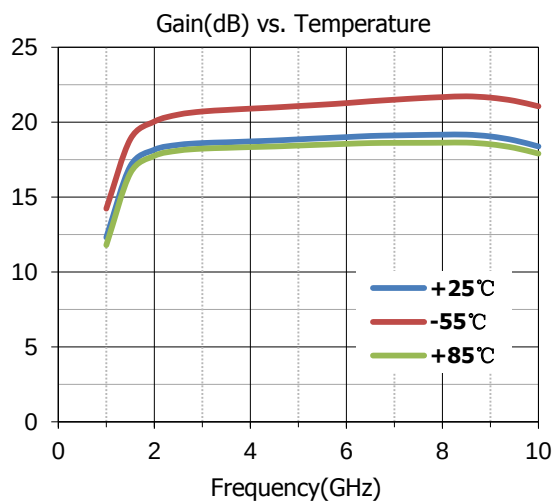
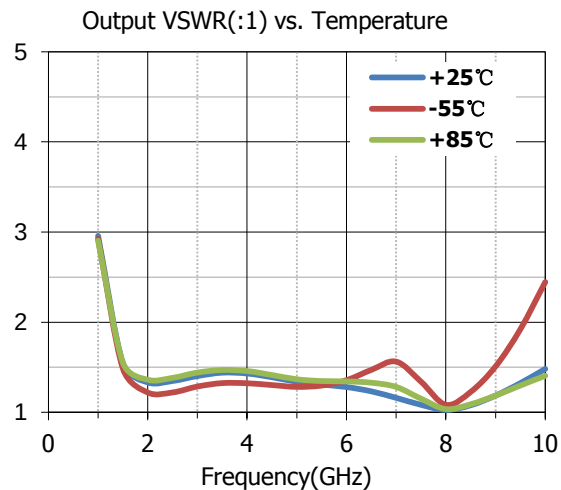
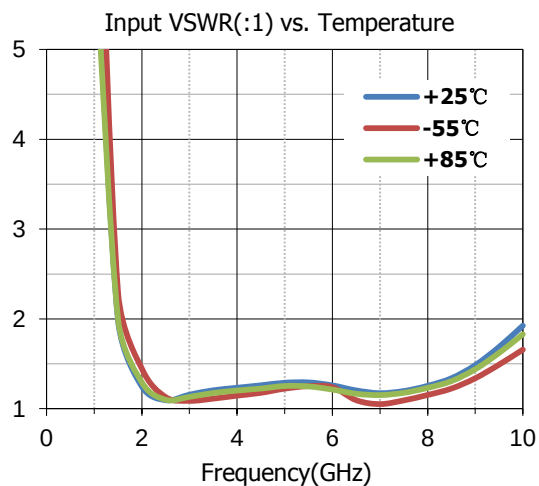
Electrical Performance (T_A=25°C, V_{dd}= +5V, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2~8			GHz
Small Signal Gain	—	17	—	dB
Small Signal Gain Flatness	—	1.0	—	dB
Reverse Isolation	—	-35	—	dB
Input VSWR	—	1.3	—	:1
Output VSWR	—	1.4	—	:1
Output Power for 1 dB Compression (OP _{1dB})	—	15	—	dBm
Drain Voltage(V _{dd})	5	—	8	V
Supply Current(I _{dd})	—	56	—	mA

Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel temperature	+150°C	Storage Temperature	-65°C~+150°C
Maximum V _D	+9V		

Typical Performance Curve



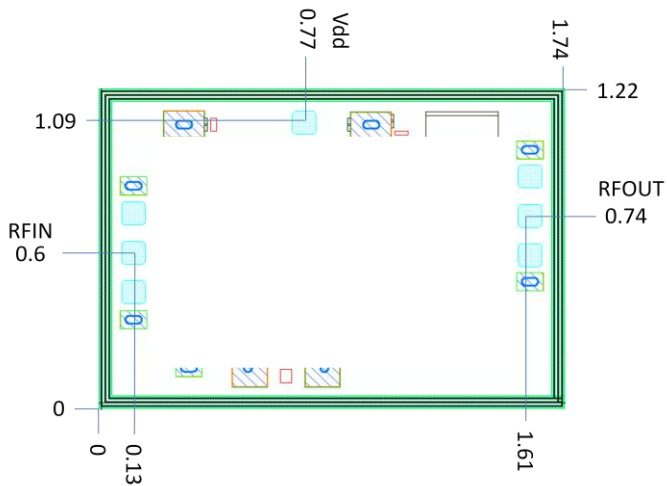
XT3905



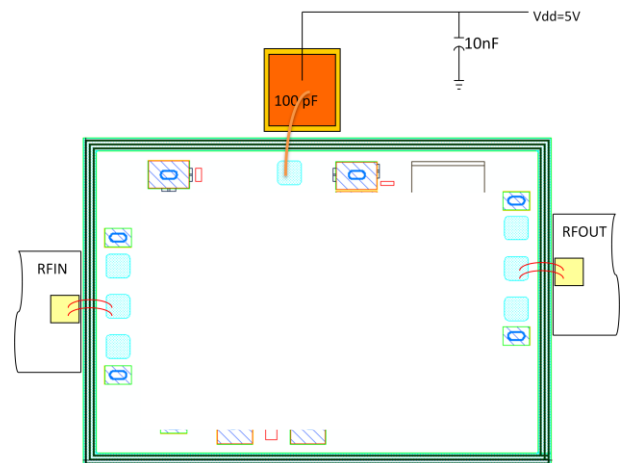
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Die Outline
(all dimensions in mm)



Assembly Diagram



Chip size:1.74mm x1.22mm x0.1mm
Bonding pad size:100x100um

Notes

1. The XT3905 is biased with a single drain voltage 5V.
2. RF connections should be made as short as possible to reduce the inductive effect of the bond wire.
3. The backside of the SAC3905 is RF grounded. Die attach should be accomplished with electrically and thermally conductive epoxy only.