SAC3904

GaAs MMIC Driver Amplifier
7～12GHz

Rev 2.1

Features

- Frequency：7~12GHz
- Gain：24dB
- Output P_{-1}dB：17.5dBm
- Supply Voltage：+5V@68mA
- Die Size：1.4mm×1.24mm×0.1mm

Typical Applications

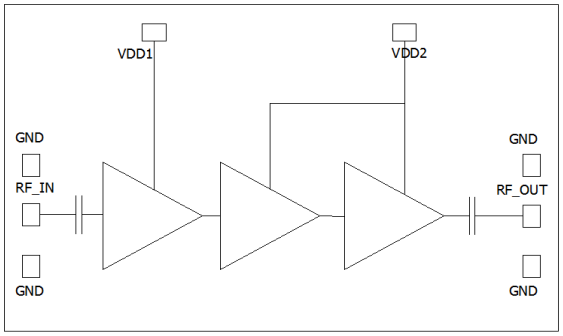
- EW
- Cellular Infrastructure
- SATCOM
- Beamforming Modules
- Test Equipment and Sensors

General Description

SAC3904 is a GaAs MMIC driver amplifier which operates between 7~12GHz. The amplifier provides 24dB of gain, 17.5dBm output P_{-1}dB power and 5.5dB noise figure while requiring 68 mA from a +8V 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℃, V_D=+5V, I_D=68mA, Z_0=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		7~12		GHz
Gain	—	24	—	dB
Gain Flatness	—	1.5	—	dB
Reverse Isolation	—	-47	—	dB
Input/Output Return Loss	—	-15	—	dB
Noise Figure	—	5.5	—	dB
Output Power for 1 dB Compression (OP_{-1}dB)	—	17.5	—	dBm
Output Third Order Intercept (OIP_3)	—	27	—	dBm
Supply Current (I_D)	—	68	—	mA

Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55℃~+85℃
Channel temperature	150℃	Storage Temperature	-65℃~+150℃

SuperApex, LLC
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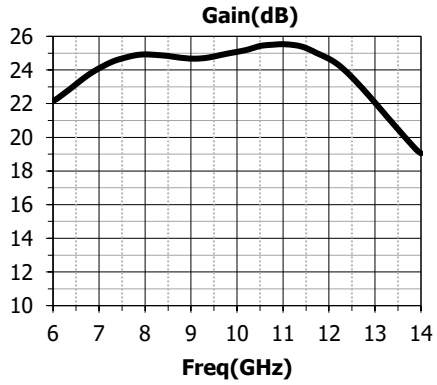
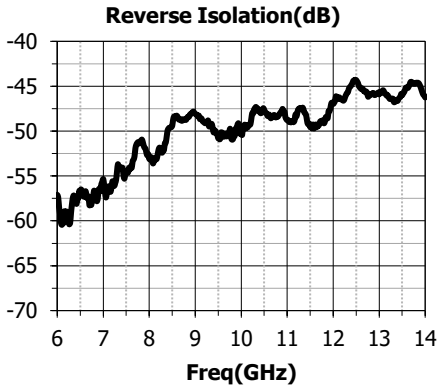
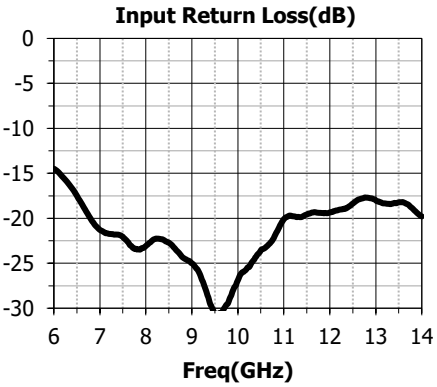
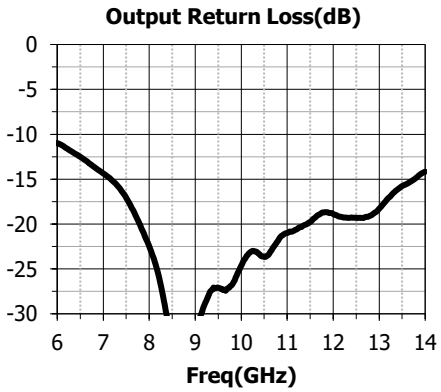
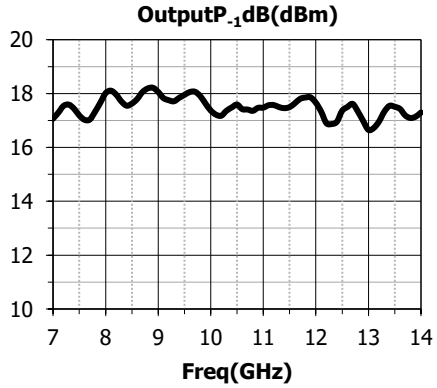
Typical Performance Curve

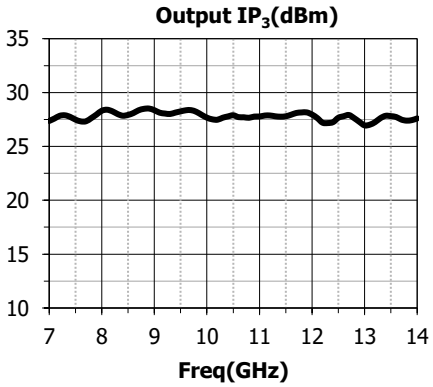












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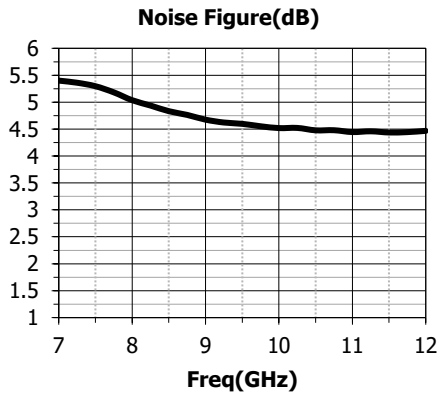
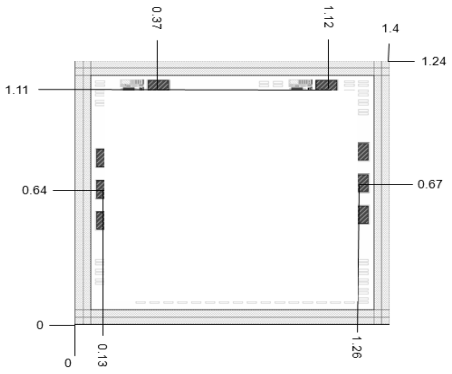
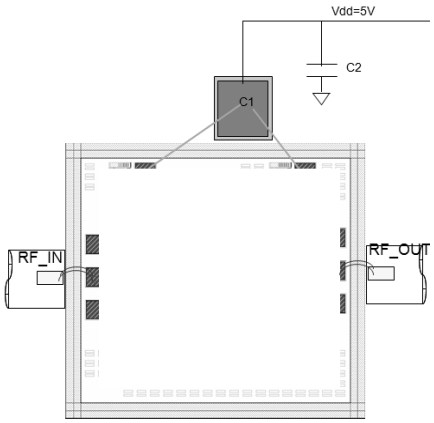


Die Outline
(All dimensions in mm)



Assembly Diagram



Component list

Reference Des.	Value	Part Number	Manuf.	Size
C1	100pF	—	ANY	SLC
C2	10nF	GRM155R71H103KA88D	MURATA	0402

Attention:

GaAs MMIC devices are susceptible to damage from electrostatic discharge. Proper precautions should be observed during handling, assembly and test.

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