

SAC3024



GaAs MMIC Low Noise Amplifier
0.8GHz~4GHz

Rev2.1

Features

- Frequency: 0.8GHz~4GHz
- Gain: 36dB
- Output P_{-1dB}: 20dBm
- Supply Voltage: +5V@115mA
- Die Size: 1.57mm×1.25mm×0.1mm

Typical Applications

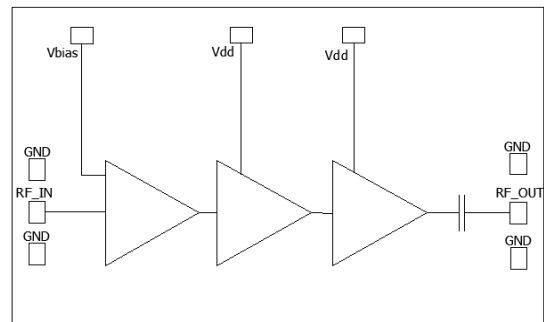
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

SAC3024 is a GaAs MMIC low noise amplifier die which operates between 0.8GHz~4GHz. The amplifier can provide 36dB gain, 20dBm Output P_{-1dB} and 1.4dB noise figure from a 115mA supply current.

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_D=+5V, I_D=115mA, Z_O=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.8~4			GHz
Gain	—	36	—	dB
Gain Flatness	—	1	—	dB
Reverse Isolation	—	-60	—	dB
Input/Output VSWR	—	1.6	—	:1
Noise Figure	—	1.4	—	dB
Output Power for 1 dB Compression (OP _{-1dB})	—	20	—	dBm
Output Third Order Intercept (OIP ₃)	—	30	—	dBm
Supply Current(I _D)	—	115	—	mA

Absolute Maximum Ratings

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

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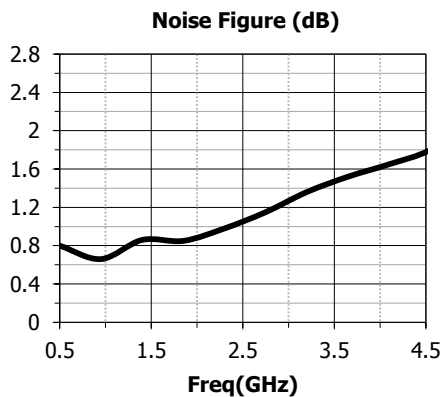
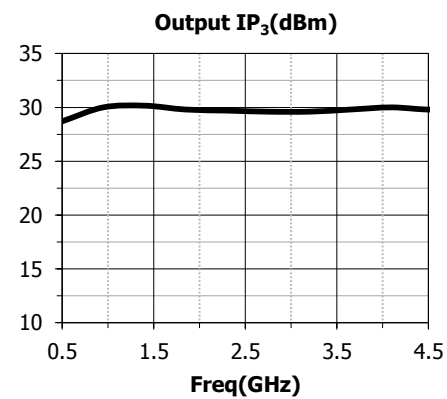
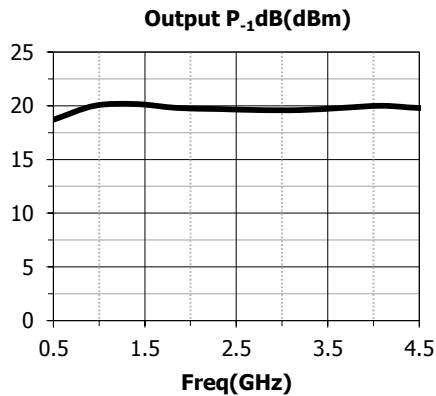
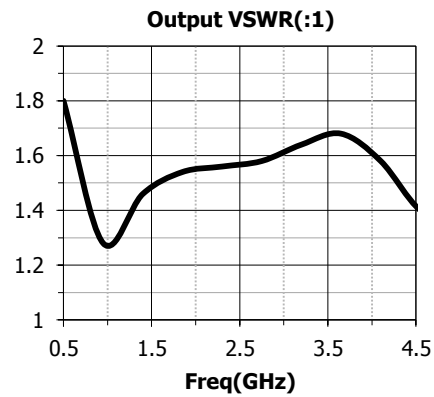
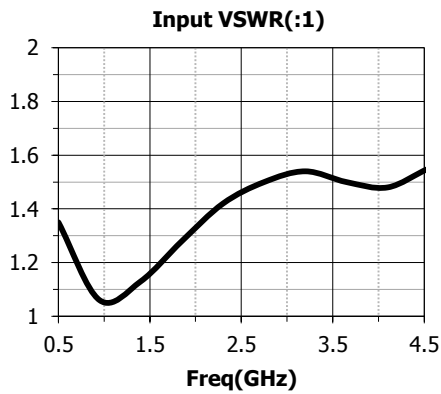
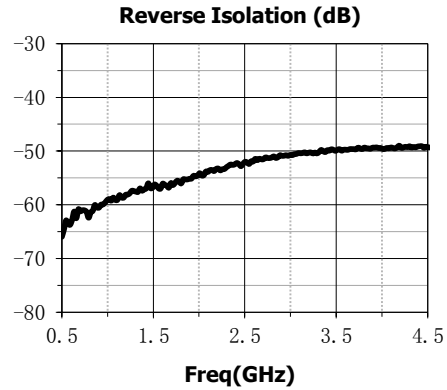
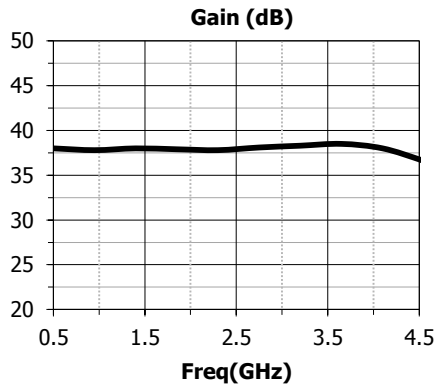
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Typical Performance Curve



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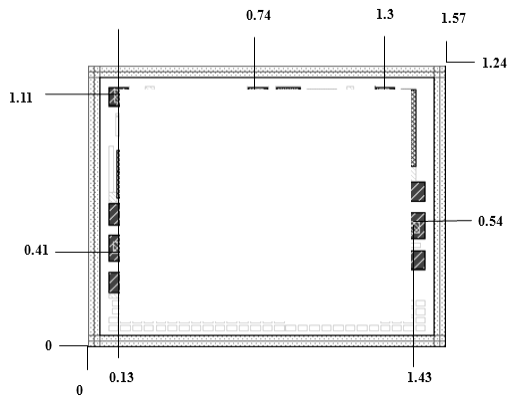
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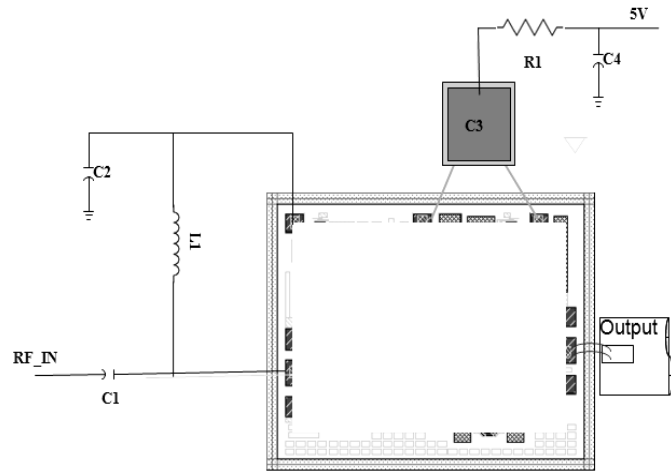
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Die Outline
(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	22pF	GRM1555C1H220JA01D	MURATA	0402
C2	22pF	GRM1555C1H220JA01D	MURATA	0402
C3	100pF	—	RADVISTA	Chip
C4	10nF	GRM155R71H103KA88D	MURATA	0402
L1	18nH	0402CS-18NXGE	COILCRAFT	0402
R1	0Ω	—	—	—

Attention:

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