

# SAC3001

GaAs MMIC Low Noise Amplifier  
30~300MHz

Rev 2.0

## Features

- Frequency: 30~300MHz
- Gain: 32.5dB
- Noise Figure: 0.75dB
- Power Supply: +8V@150mA
- Die Size: 0.72mm×1.24mm×0.1mm

## Typical Applications

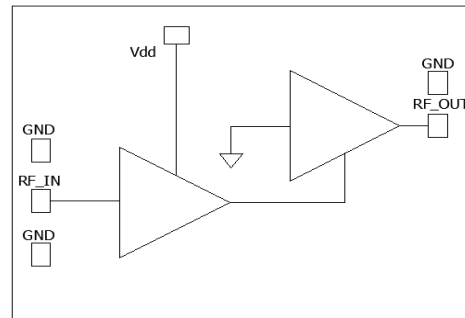
- Radar and ECM
- RF/ Microwave Radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3001 is a GaAs MMIC Low Noise Amplifier die which operates between 30 to 300MHz. The amplifier can provide 32.5dB gain, 26.5dBm OutputP<sub>1</sub>dB, 0.75dB noise figure from a 150mA 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<sub>A</sub>=25°C, V<sub>D</sub>=+8V, I<sub>D</sub>=150mA, Z<sub>O</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	30~300			MHz
Gain	—	32.5	—	dB
Gain Flatness	—	0.1	—	dB
Reverse Isolation	—	-35	—	dB
Input/Output VSWR	—	1.5	—	:1
Noise Figure	—	0.75	—	dB
Output Power for 1 dB Compression (OP <sub>1</sub> dB)	—	26.5	—	dBm
Output Third Order Intercept (OIP <sub>3</sub> )	—	37	—	dBm
Supply Current(I <sub>D</sub> )	—	150	—	mA

## Absolute Maximum Ratings

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

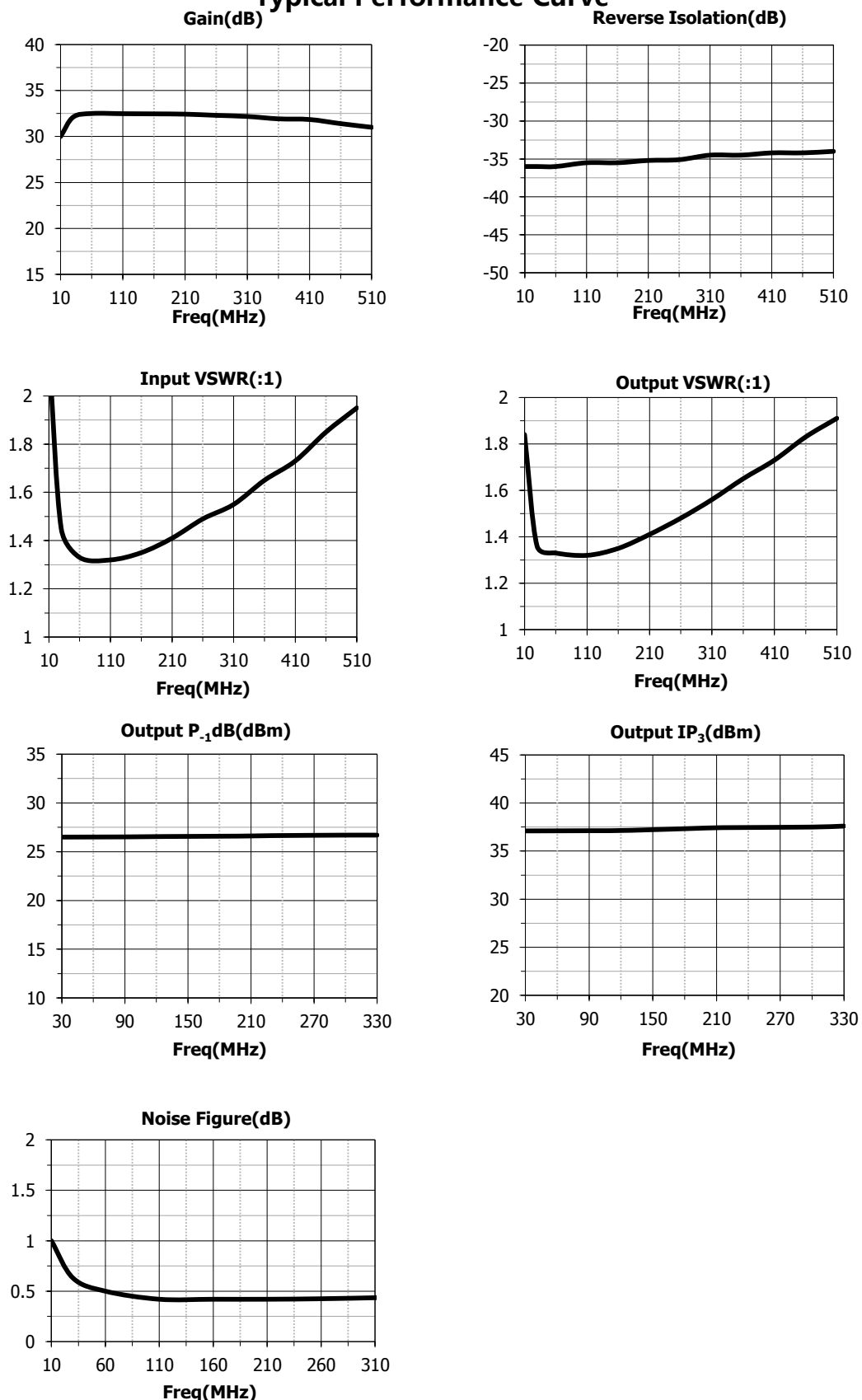
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## Typical Performance Curve



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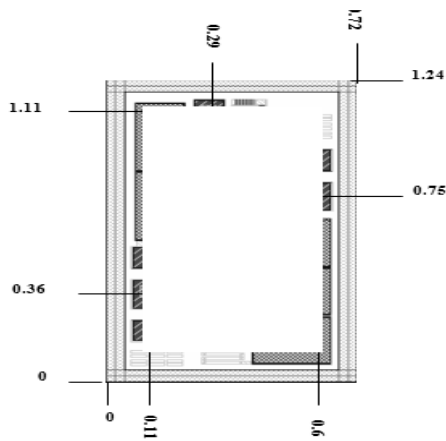
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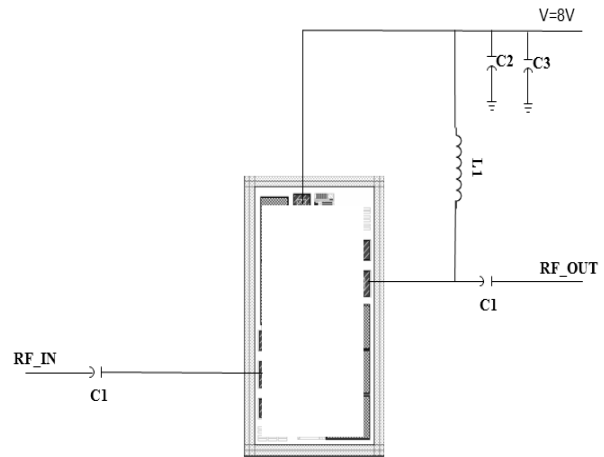
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## Die Outline

(All dimensions in mm)



## Assembly Diagram



## Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	2200pF	GRM188R61H222KA01	MURATA	0603
C2	2200pF	GRM188R61H222KA01	MURATA	0603
C3	10nF	GRM1857U1A103JA44	MURATA	0603
L1	820nH	0603LS821XJLC	COILCRAFT	0603

### Attention:

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