

# SAC3021

GaAs MMIC Low Noise Amplifier  
5GHz~6GHz

Rev 2.0

## Features

- Frequency: 5GHz~6GHz
- Gain: 7dB
- OutputP<sub>-1dB</sub>: 14.5dBm
- Supply Voltage: +5V@20mA
- Die Size: 1.0mm×1.25mm×0.1mm

## Typical Applications

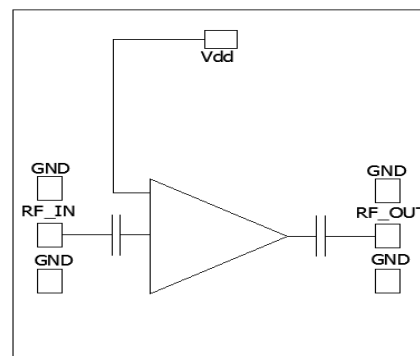
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3021 is a GaAs MMIC low noise amplifier die which operates between 5GHz~6GHz. The amplifier can provide 7dB gain, 14.5dBm OutputP<sub>-1dB</sub> and 5.2dB noise figure from a 20mA 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>= +5V, I<sub>D</sub>=20mA, Z<sub>O</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	5~6			GHz
Gain	—	7	—	dB
Gain Flatness	—	0.1	—	dB
Reverse Isolation	—	-18	—	dB
Input/Output VSWR	—	1.6	—	:1
Noise Figure	—	5.2	—	dB
Output Power for 1 dB Compression (OP <sub>-1dB</sub> )	—	14.5	—	dBm
Output Third Order Intercept (OIP <sub>3</sub> )	—	25	—	dBm
Supply Current(I <sub>D</sub> )	—	20	—	mA

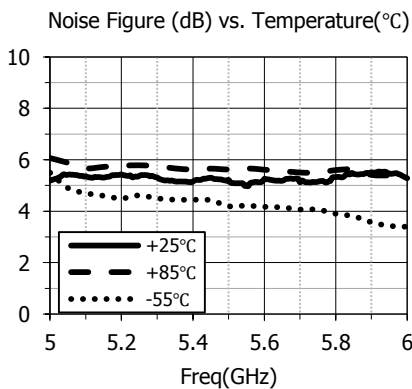
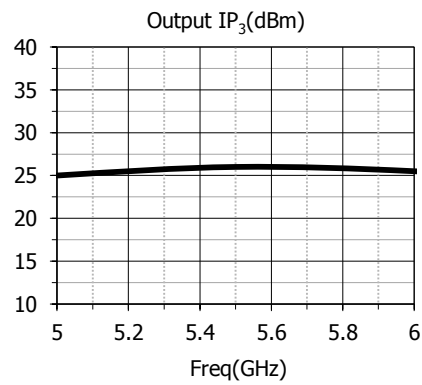
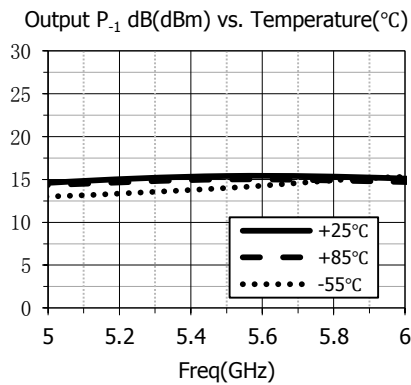
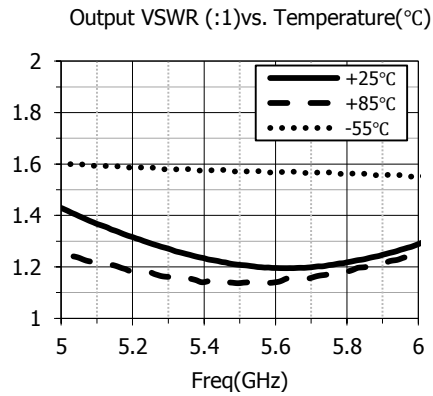
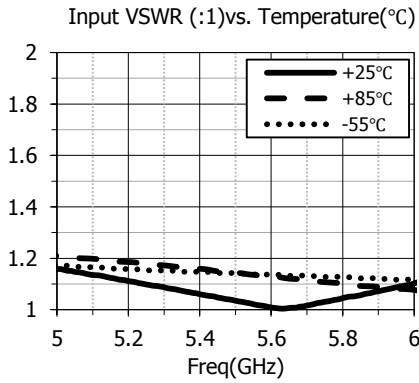
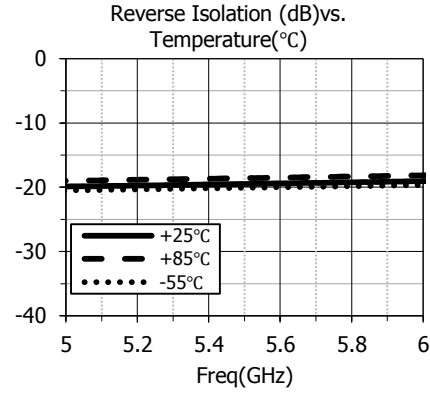
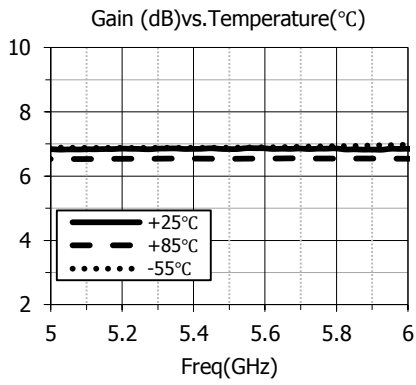
## Absolute Maximum Ratings

Maximum Input Power	+20dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

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## Typical Performance Curve

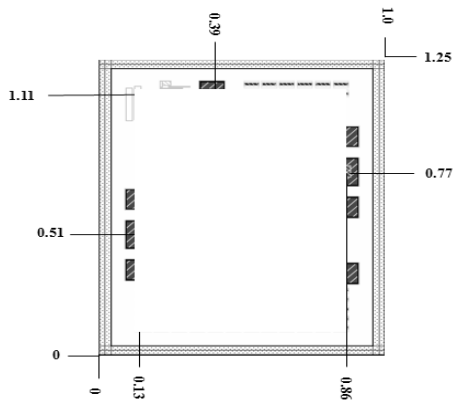


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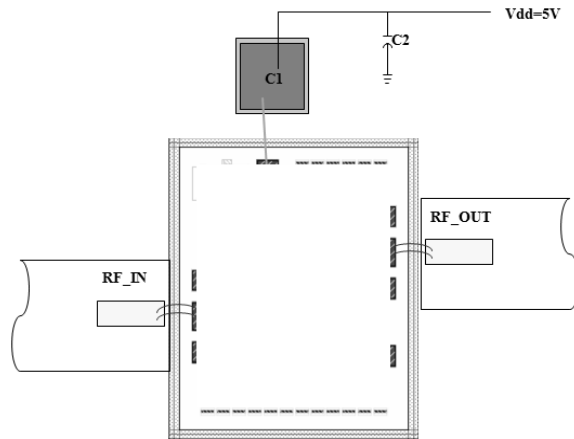
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**Die Outline**  
(All dimensions in mm)



**Assembly Diagram**



## Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	100pF	—	RADVISTA	Chip
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.