

## Features

- Frequency: 2.7GHz~3.5GHz
- Gain: 28dB
- Noise Figure: 0.75dB
- Supply Voltage: +5V@40mA
- Die Size: 1.1mm×1.25mm×0.1mm

## Typical Applications

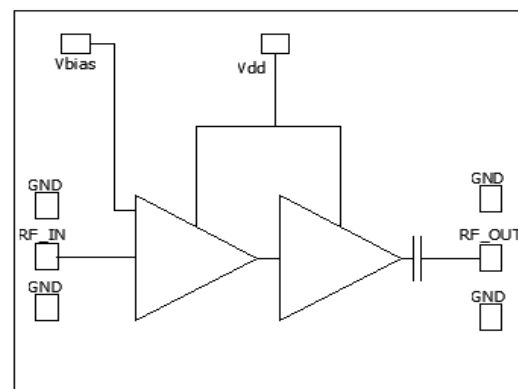
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3020 is a GaAs MMIC low noise amplifier die which operates between 2.7GHz~3.5GHz. The amplifier can provide 28dB gain, 10dBm Output P<sub>1dB</sub> and 0.75dB noise figure from a 40mA 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



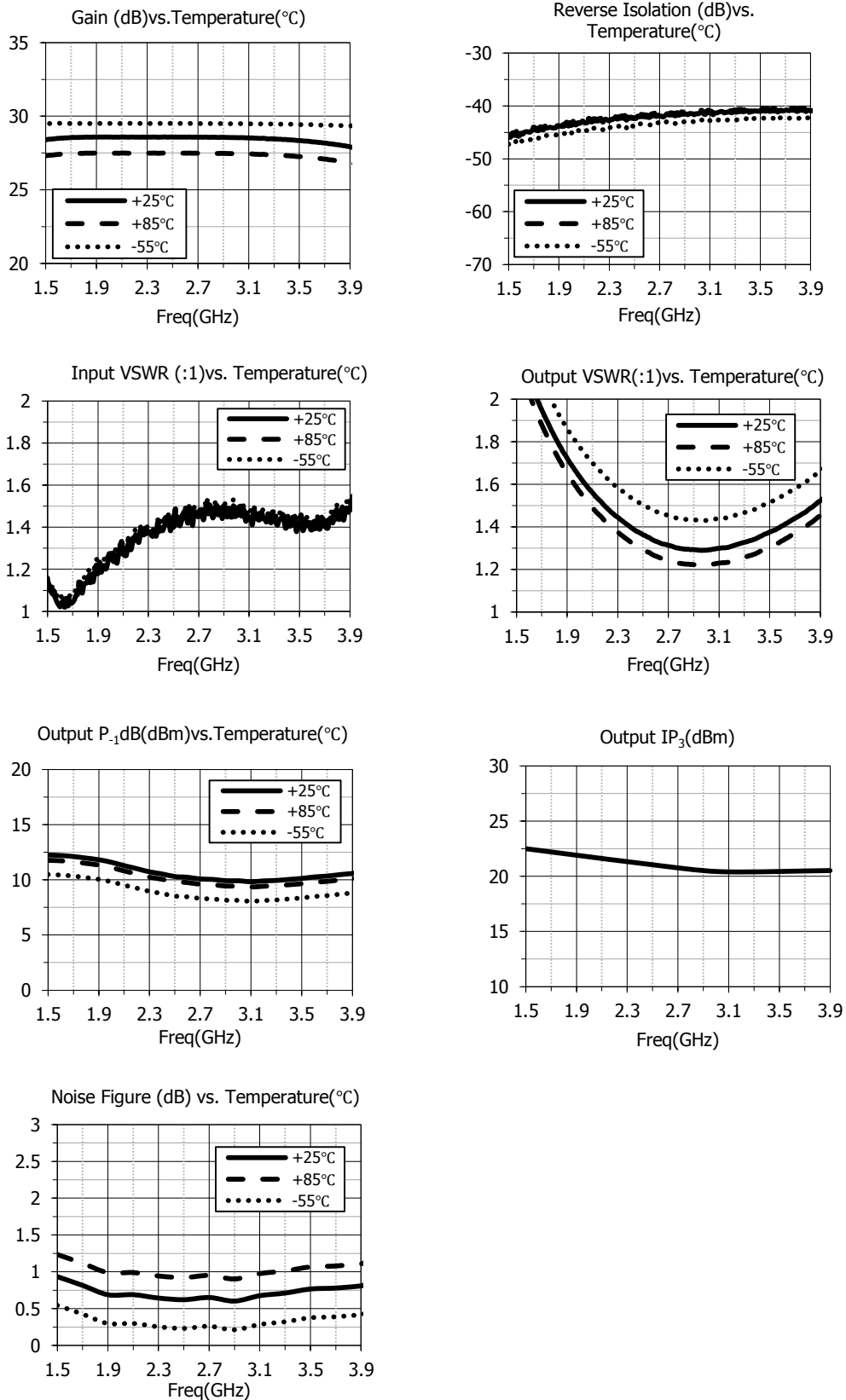
## Electrical Performance ( T<sub>A</sub>=25°C, V<sub>D</sub>= +5V, I<sub>D</sub>=40mA, Z<sub>O</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2.7~3.5			GHz
Gain	—	28	—	dB
Gain Flatness	—	0.2	—	dB
Reverse Isolation	—	-42	—	dB
Input/Output VSWR	—	1.3	—	:1
Noise Figure	—	0.75	—	dB
Output Power for 1 dB Compression (OP <sub>1dB</sub> )	—	10	—	dBm
Output Third Order Intercept (OIP <sub>3</sub> )	—	20	—	dBm
Supply Current(I <sub>b</sub> )	—	40	—	mA

## Absolute Maximum Ratings

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

## Typical Performance Curve

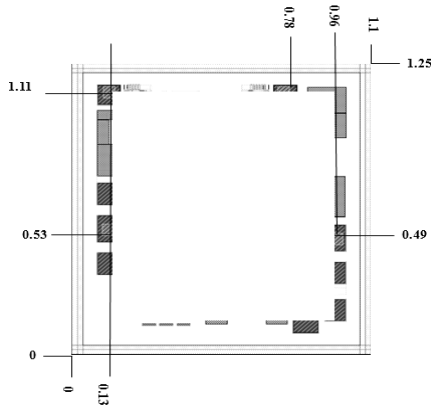


# SAC3020

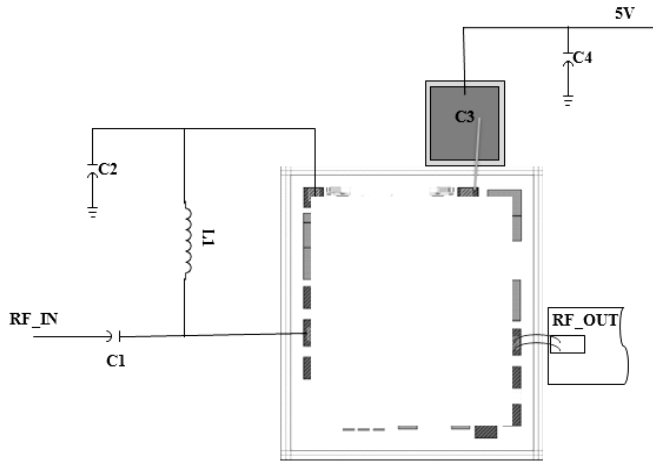
GaAs MMIC Low Noise Amplifier  
2.7GHz~3.5GHz

Rev 2.0

**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	4.7nH	0402CS-4N7XGE	COILCRAFT	0402

### Attention:

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