

# SAC3053

GaAs MMIC Low Noise Amplifier  
0.4~1.5GHz

Rev 1.1

## Features

- Frequency: 0.4~1.5GHz
- Gain: 21dB
- Single Power Supply: +5V@115mA
- Output P<sub>-1dB</sub>: 21dBm
- Die Size: 0.72 mm x1.21mmx0.1mm

## Typical Applications

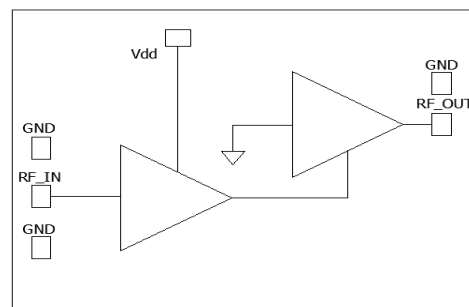
- Radar and ECM
- RF/ Microwave Radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3053 is a GaAs MMIC low noise amplifier die which operates between 0.4~1.5GHz. The amplifier can provide 21dB gain, 21dBm Output P<sub>-1dB</sub> and 1.6dB 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<sub>A</sub>=25°C, V<sub>D</sub>=+5V, I<sub>D</sub>=115mA, Z<sub>0</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.4~1.5			GHz
Gain	19	21	23	dB
Gain Flatness	—	±1	±2	dB
Reverse Isolation	-23	-27	—	dB
Input VSWR/ Output VSWR	—	—	1.6	: 1
Noise Figure	—	1.6	3.0	dB
Output P <sub>-1dB</sub>	19.5	21	—	dBm
Output IP <sub>3</sub>	—	32	—	dBm
Supply Current(I <sub>D</sub> )	—	115	—	mA

## Absolute Maximum Ratings

Maximum Input Power	+15dBm	Operating Temperature	-55°C~+85°C
Maximum Supply Voltage	5.5V	Storage Temperature	-65°C~+150°C

## SuperApex, LLC

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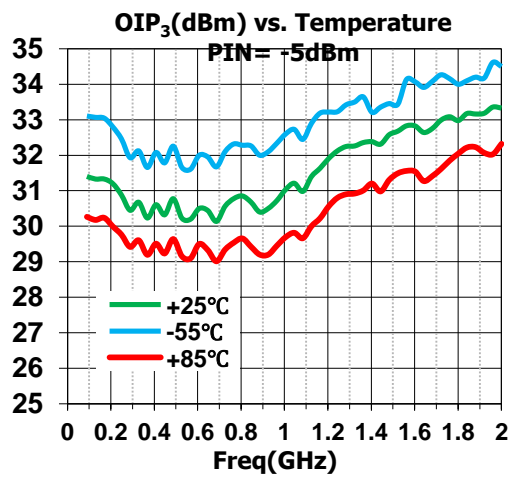
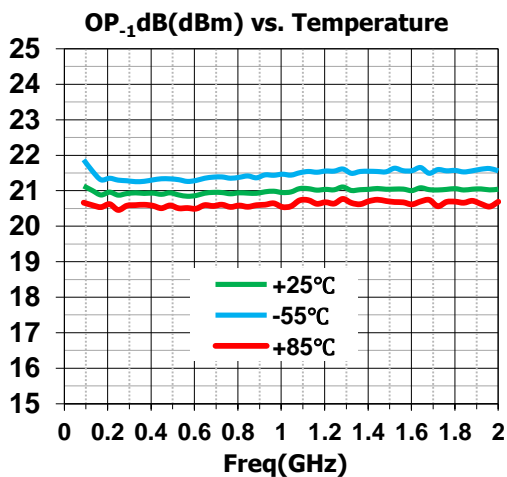
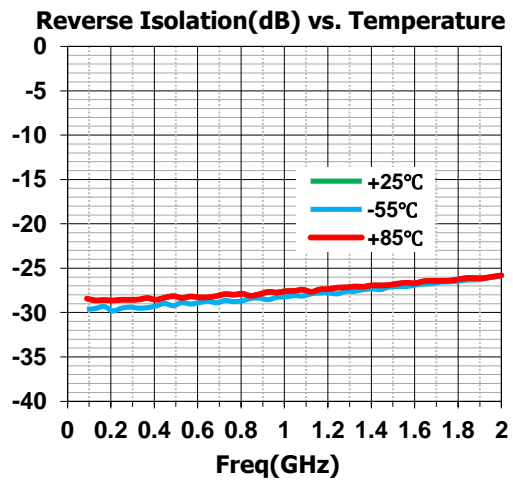
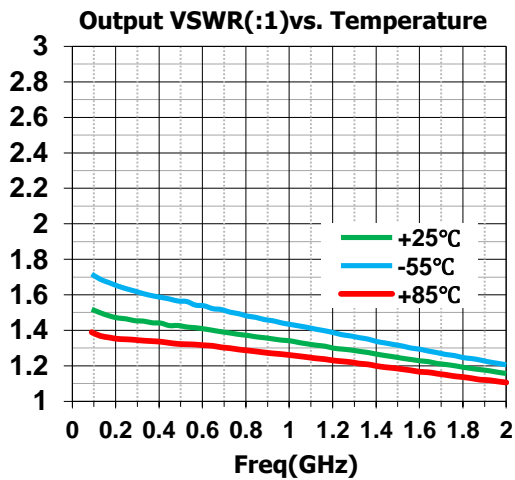
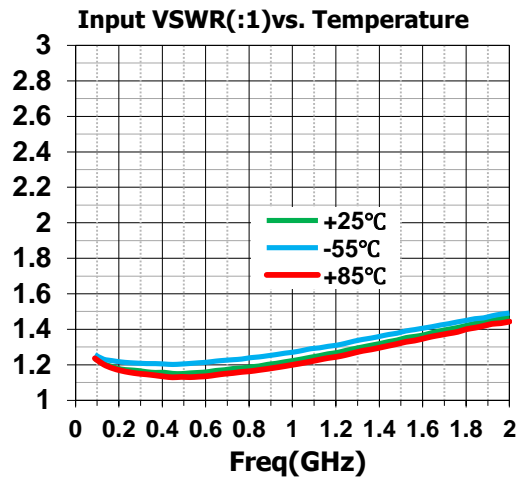
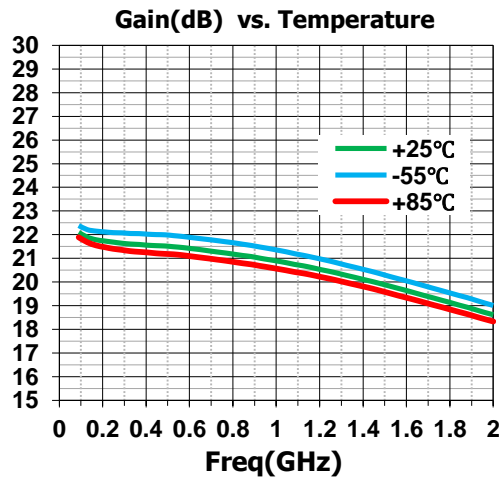
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## Typical Performance Curve



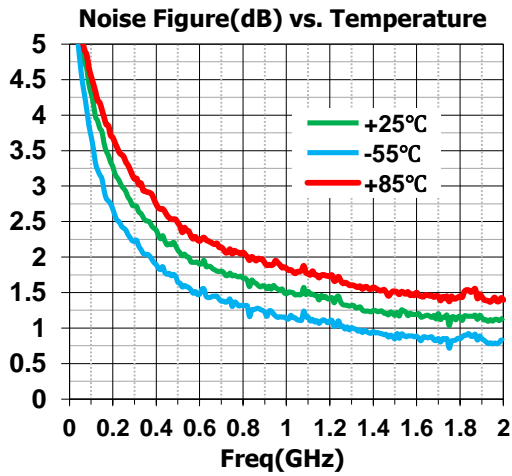
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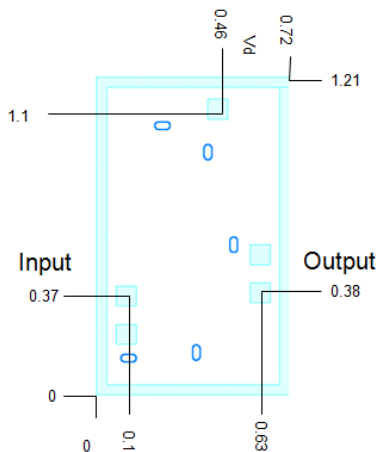
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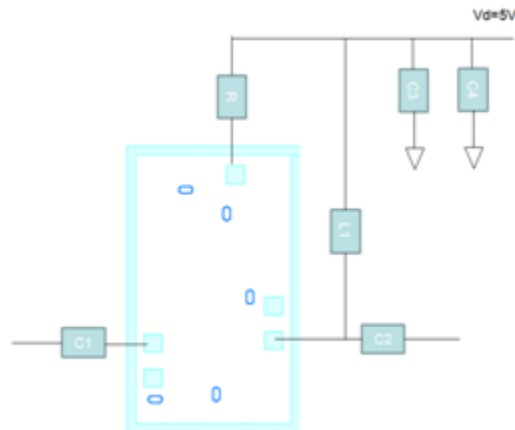
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## Outline (All dimensions in mm)



## Assembly Diagram



## Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1 , C2 , C3	100pF	GCM1555C1H101FA16D	Murata	0402
C4	10nF	GCM155R71H103JA55D	Murata	0402
R	600Ω	-	-	-
L1	82nH	LQW18AN82NJ00D	Murata	0603

### Attention:

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

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