

## Features

- Frequency: 7GHz~13GHz
- Gain: 20dB
- Noise Figure: 1.35dB
- Output P<sub>1dB</sub>: 14dBm
- Die Size: 1.56mm×1.26mm×0.1mm

## Typical Applications

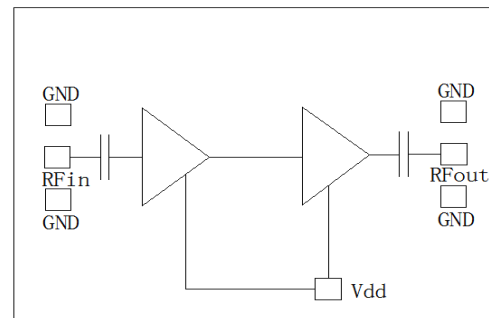
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3039 is a GaAs MMIC low noise amplifier die which operates between 7GHz~13GHz. The amplifier can provide 20dB gain, 14dBm Output P<sub>1dB</sub> and 1.35dB noise figure from a 35mA supply voltage.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

## Functional Diagram



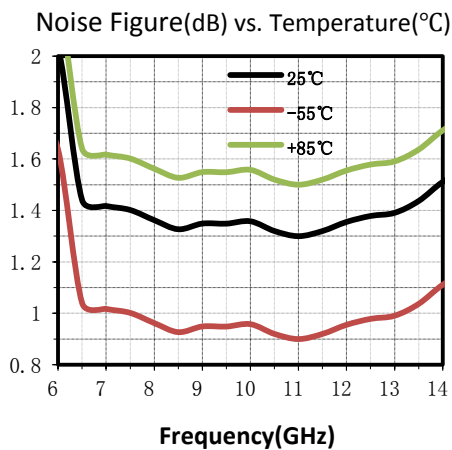
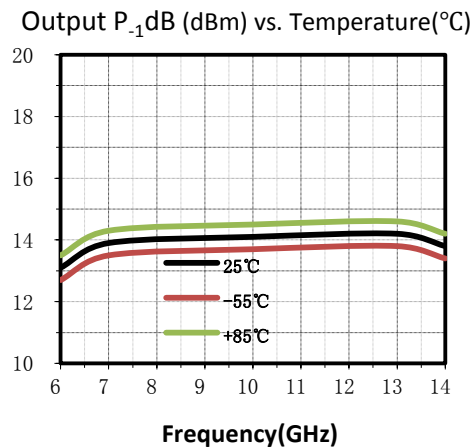
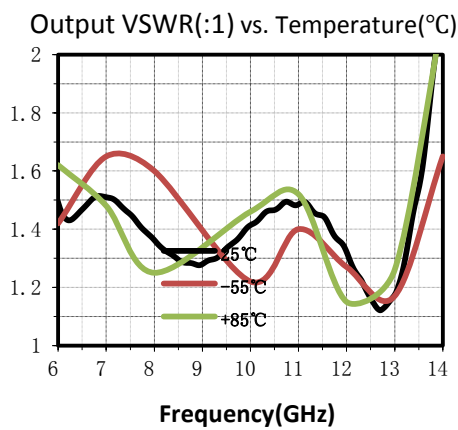
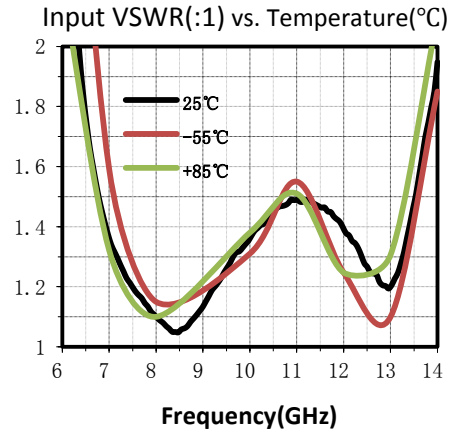
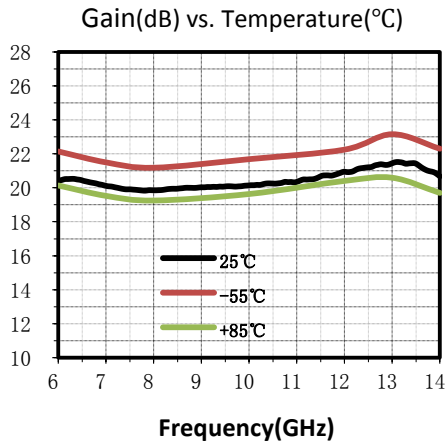
## Electrical Performance ( T<sub>A</sub>=25°C, V<sub>D</sub>= +5V, I<sub>D</sub>=35mA, Z<sub>0</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Gain	—	20	—	dB
Gain Flatness	—	1.6	—	dB
Input VSWR	—	1.4	—	:1
Output VSWR	—	1.4	—	:1
Noise Figure	—	1.35	—	dB
Output P <sub>1dB</sub>	—	14	—	dBm
Supply Current(I <sub>D</sub> )	—	35	—	mA

## Absolute Maximum Ratings

Maximum Input Power	+10dBm	Operating Temperature	-40°C~+85°C
Channel temperature	+150°C	Storage Temperature	-65°C~+150°C
Supply Voltage	5.5VDC	Supply Current	100mA

## Typical Performance Curve

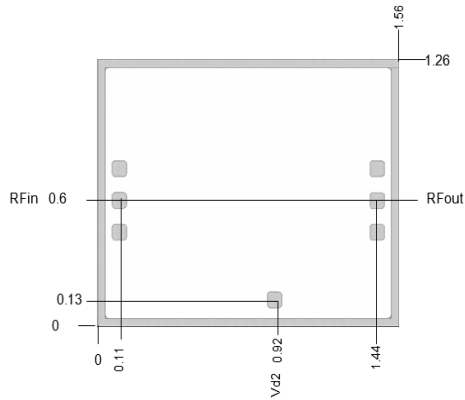


# SAC3039

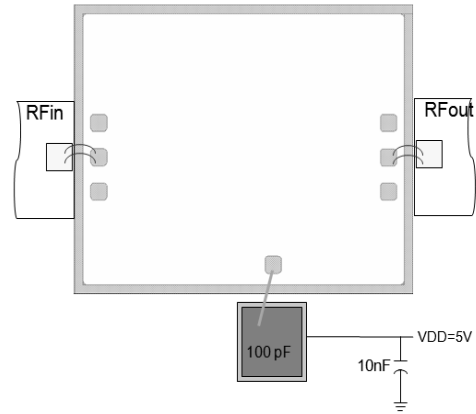
GaAs MMIC Low Noise Amplifier  
7GHz~13GHz

Rev 2.0

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



**Assembly Diagram**



**Attention:**

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