

## Features

- Frequency: 18~40GHz
- Gain: 20dB
- Output P<sub>-1dB</sub>: 13dBm@28GHz
- Supply Voltage: +5V@85mA
- Die Size: 1.0mm×1.4mm×0.1mm

## Typical Applications

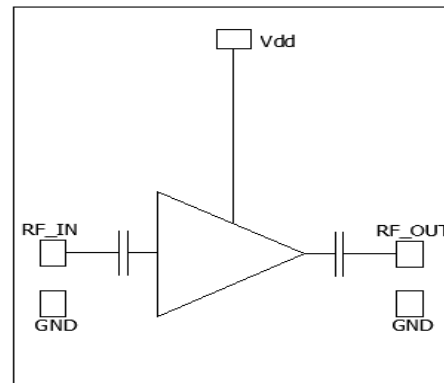
- Microwave radio including point to point communication
- Telecommunication
- Test instrumentation
- SatCom

## General Description

SAC3092 is a GaAs MMIC Low Noise Amplifier die which operates between 18GHz~40GHz. The amplifier can provide 20dB gain, 14dBm OutputP<sub>-1dB</sub>, 2.0dB noise figure from 85mA 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>=85mA, Z<sub>0</sub>=50Ω)

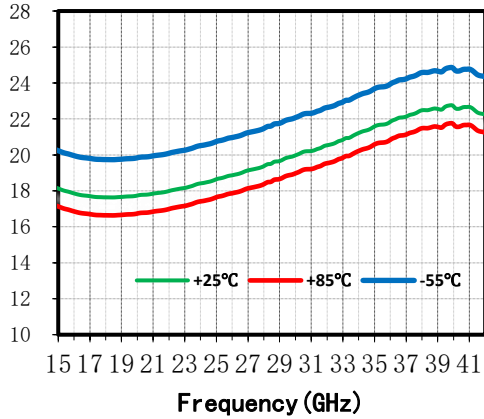
Parameter	Min.	Typ.	Max.	Units
Frequency Range	18~40			GHz
Gain	17	20	23	dB
Gain Flatness	—	±1	±3	dB
Reverse Isolation	—	50	—	dB
Input VSWR	—	1.8	2.7	:1
Output VSWR	—	1.6	2.1	:1
Noise Figure	—	2.0	2.5	dB
Output Power for 1 dB Compression (OP <sub>-1dB</sub> )	11	14	—	dBm
Supply Current (I <sub>b</sub> )	—	85	—	mA

## Absolute Maximum Ratings

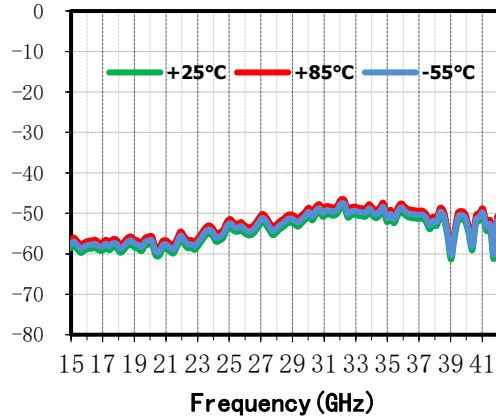
Maximum Input Power	+15dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

## Typical Performance Curve

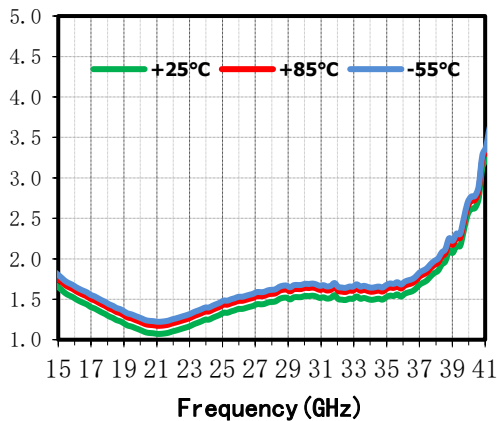
Small Sigal Gain(dB) vs.Temperature



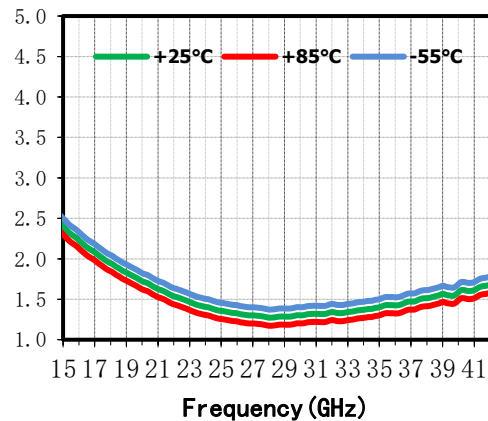
Isolation(dB) vs.Temperature



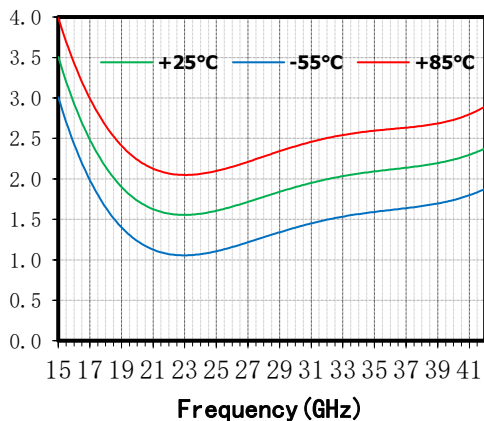
Input VSWR(:1) vs.Temperature



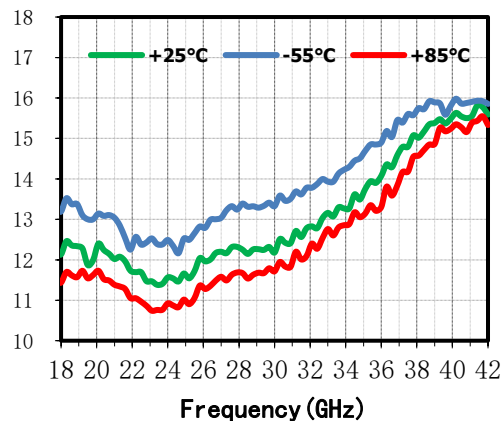
Output VSWR(:1) vs.Temperature



Noise Figure(dB) vs.Frequency



OP-1dB (dBm) vs. Temperature

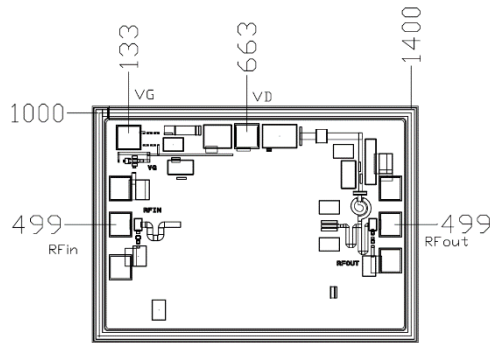


# SAC3092

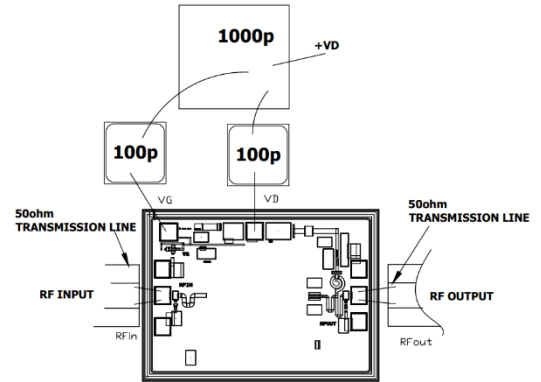
GaAs MMIC Low Noise Amplifier  
18~40GHz

Rev 1.1

**Die Outline**  
(All dimensions in  $\mu\text{m}$ )



**Assembly Diagram**



**Attention:**

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

1. ESD is level 0 (<250V) at HBM;