

## Features

- Frequency: 2.1GHz~2.5GHz
- Gain: 33dB
- Noise Figure: 0.7dB
- Supply Voltage: +5V@40mA
- Die Size: 1.3mm×1.25mm×0.1mm

## Typical Applications

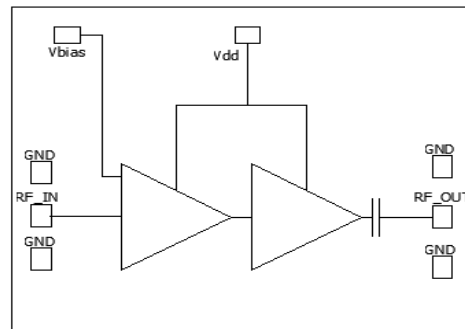
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3017 is a GaAs MMIC low noise amplifier die which operates between 2.1~2.5GHz. The amplifier can provide 33dB gain, 9dBm Output  $P_{1dB}$  and 0.7dB 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



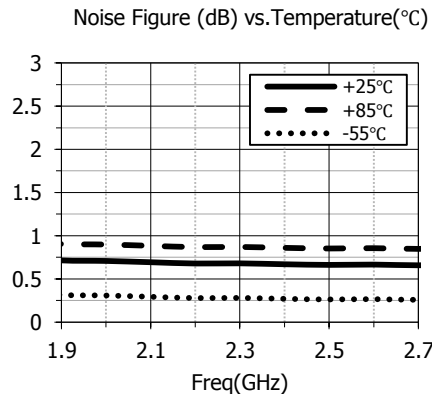
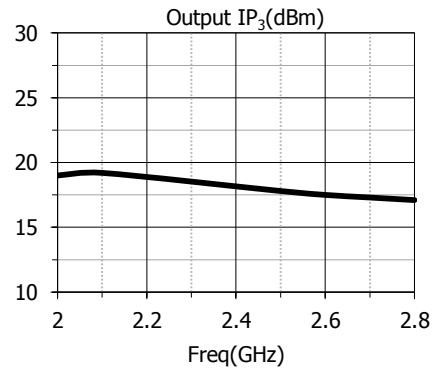
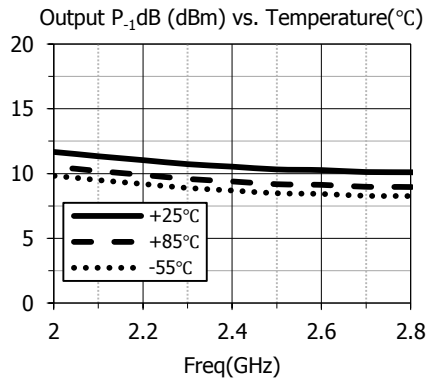
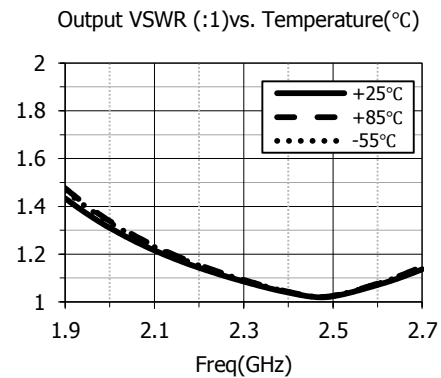
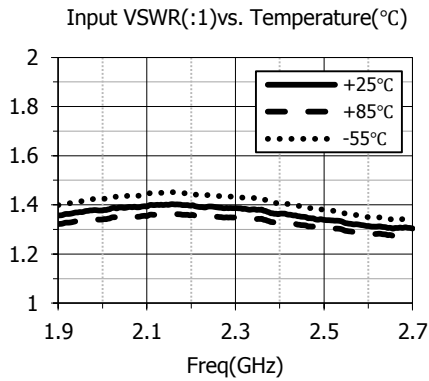
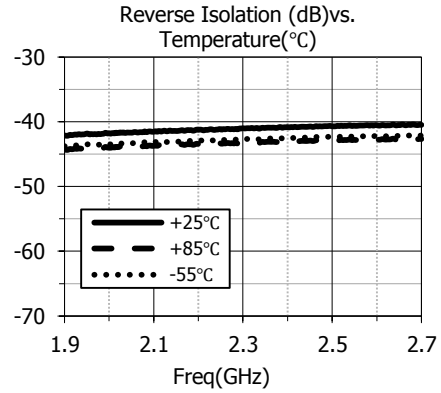
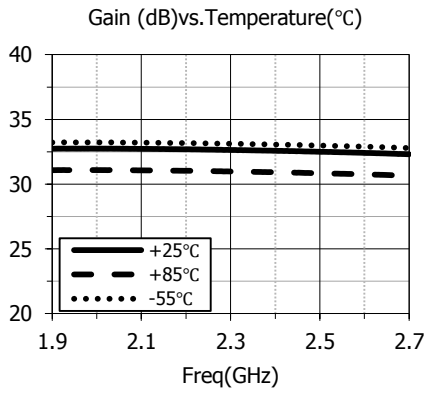
## Electrical Performance ( $T_A=25^\circ\text{C}$ , $V_D=+5\text{V}$ , $I_D=40\text{mA}$ , $Z_0=50\Omega$ )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2.1~2.5			GHz
Gain	—	33	—	dB
Gain Flatness	—	0.05	—	dB
Reverse Isolation	—	-42	—	dB
Input/Output VSWR	—	1.3	—	:1
Noise Figure	—	0.7	—	dB
Output Power for 1 dB Compression ( $OP_{1dB}$ )	—	9	—	dBm
Output Third Order Intercept ( $OIP_3$ )	—	20	—	dBm
Supply Current( $I_D$ )	—	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

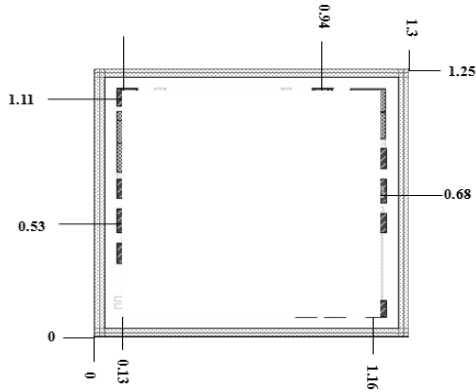


# SAC3017

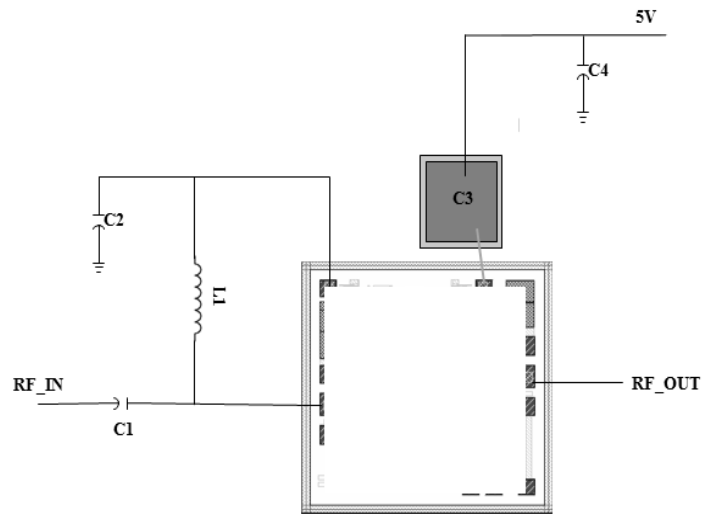
GaAs MMIC Low Noise Amplifier  
2.1GHz~2.5GHz

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	6.8nH	0402CS-6N8XGE	COILCRAFT	0402

### Attention:

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