

# SAC3916Q5

GaAs MMIC Driver Amplifier  
12GHz~18GHz

Rev 2.3

## Features

- Frequency: 12GHz~18GHz
- Gain: 22dB
- Output P<sub>-1</sub>dB: 30dBm
- Output IP<sub>3</sub>: 40dBm
- Supply Voltage: +5~+6V
- Package Size: 5mm×5mm×1.4mm

## Typical Applications

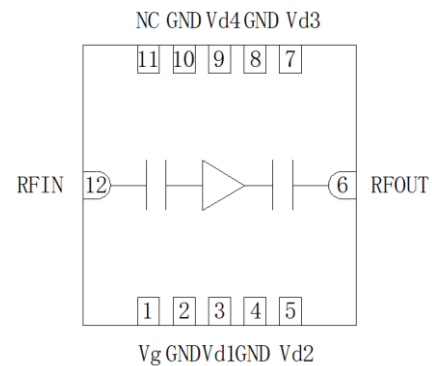
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

## General Description

SAC3916Q5 is a GaAs MMIC driver amplifier which operates between 12GHz~18GHz. The amplifier provides 22dB of gain ,30dBm OutputP<sub>-1</sub>dB while +5V~+6V supply voltage.

SAC3916Q5 QFN 5x5mm surface mount package.

## Functional Diagram



## Electrical Performance

( T<sub>A</sub>=25°C, V<sub>d1</sub>,V<sub>d2</sub>,V<sub>d3</sub>,V<sub>d4</sub>= +6V,I<sub>D</sub>=1000mA, Z<sub>0</sub>=50Ω )

Parameter	Min.	Typ.	Max.	Units
Frequency Range	12~18			GHz
Small Signal Gain	18	22	—	dB
Gain Flatness	—	± 2.5	—	dB
Reverse Isolation	—	-65	—	dB
Input Return Loss	—	-14	—	dB
Output IP <sub>3</sub>	—	40	—	dBm
Output P <sub>-1</sub> dB	—	30	—	dBm
Drain Voltage(V <sub>D</sub> )	5	—	6	V
Supply Current(I <sub>D</sub> )	—	1000	1700	mA

test condition :Pout/Tone=+22 dBm,fc=16GHz,Δf=5MHz

## Absolute Maximum Ratings

Maximum Input Power	+13dBm	Operating Temperature	-55°C~+70°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C
Maximum V <sub>D</sub>	+6.5V	Maximum V <sub>G</sub>	-1.2V

## SuperApex Corporation

Address: 111 Barclay Boulevard, Ste. 211, Lincolnshire, IL 60069,USA

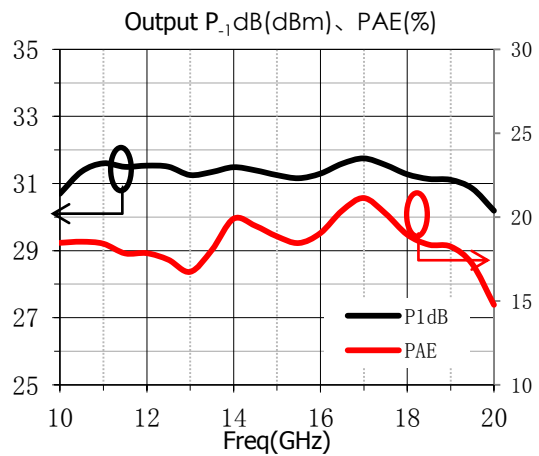
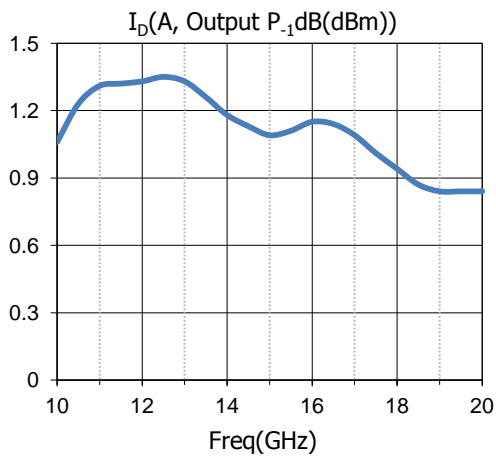
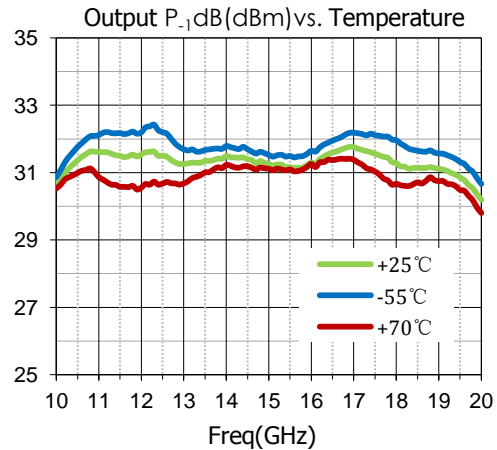
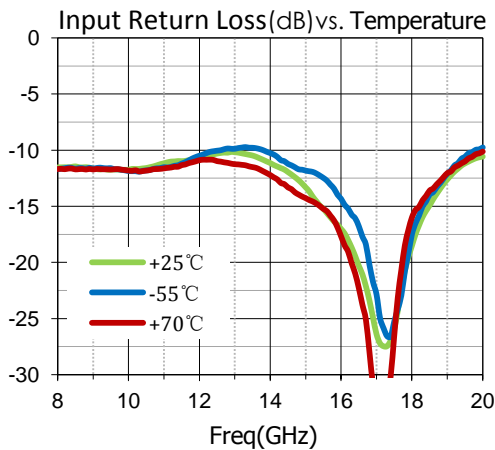
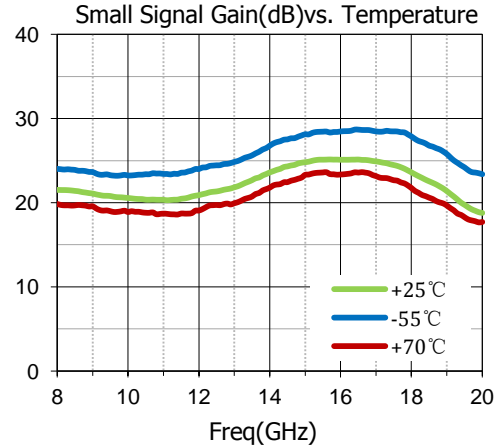
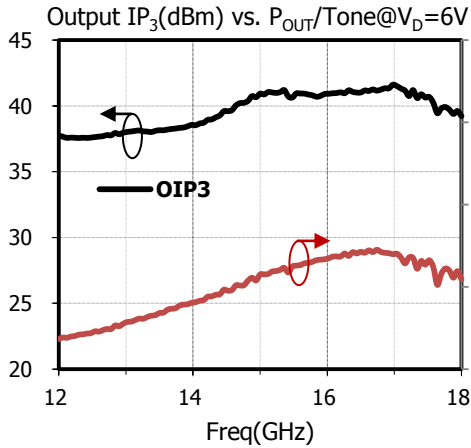
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## Typical Performance Curve

Bias condition:  $V_{d1} = V_{d2} = V_{d3} = 6V$ ,  $I_D = 1000mA$

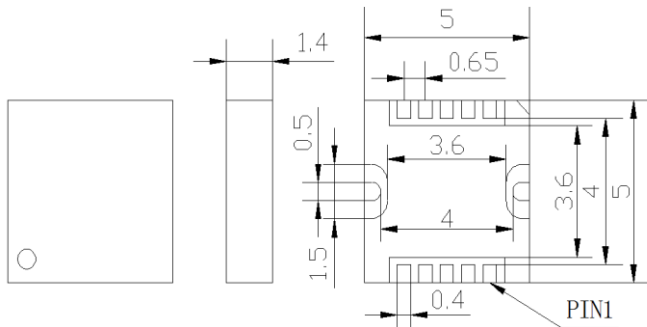


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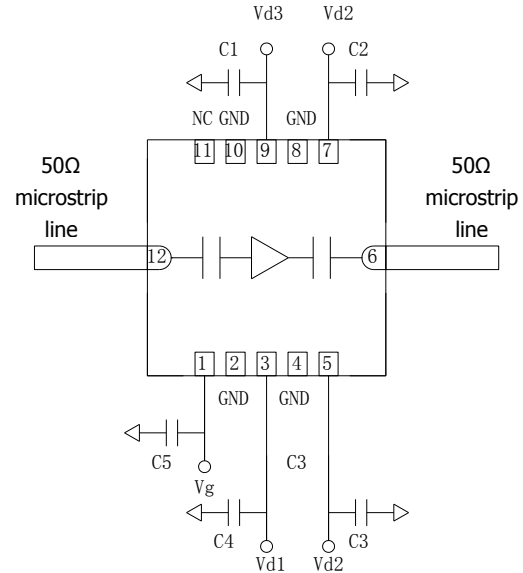
## Outline Drawing (all dimensions in mm)



RF bonding pad size: 100x150 $\mu$ m

VG/VD pad size: 100x100 $\mu$ m

## Application Circuit



## Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1、C2、C3、C4、C5	1uF	GRM155R61A105KE15D	Murata	0402

### Attention:



Electrostatic Discharge !

### Attention:

1. The moisture resistant grade of products is 2A, the storage environment  $\leq 30^{\circ}$  C/60% RH, The surrounding workshop Life is 4 weeks. 2. After un-packing, It is necessary to bake the parts for 6 hours in 125+/-5 degree environment before soldering.

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