

SAC4019Q4



GaAs MMIC Low Noise Amplifier
18~40GHz

Rev 1.0

Features

- Frequency: 18~40GHz
- Gain: 20dB
- Output P_{-1dB}: 9dBm@28GHz
- Supply Voltage: +5V@33mA
- Package: QFN4x4

Typical Applications

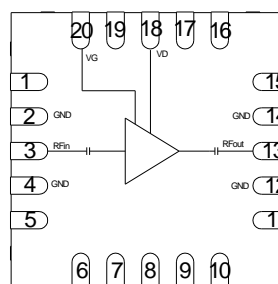
- Microwave radio including point to point communication
- Telecommunication
- Test instrumentation
- SatCom

General Description

SAC4019Q4 is a GaAs MMIC Low Noise Amplifier which operates between 18GHz~40GHz. The amplifier can provide 20dB gain, 9dBm Output P_{-1dB}, 2.5dB noise figure from a 37mA supply current.

The device assembled in a 4x4mm air cavity QFN package.

Functional Diagram



Electrical Performance

T_A=25°C, V_D=+5V, I_D=37mA, Z₀=50Ω

Parameter	Min.	Typ.	Max.	Units
Frequency Range	18~40			GHz
Gain	18	20	23	dB
Gain Flatness	—	±1	±2	dB
Reverse Isolation	—	50	—	dB
Input VSWR	—	2.0	2.8	:1
Output VSWR	—	1.5	2.2	:1
Noise Figure	—	2.5	—	dB
Output Power for 1 dB Compression (OP _{-1dB})	7	9	—	dBm
Supply Voltage (V _D)	—	5	6	V
Supply Current (I _b)	—	37	—	mA

Absolute Maximum Ratings

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

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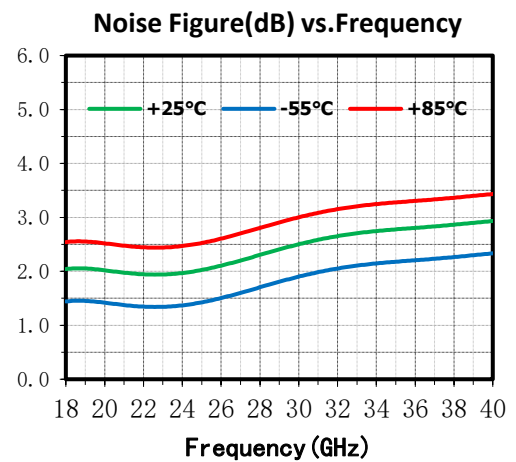
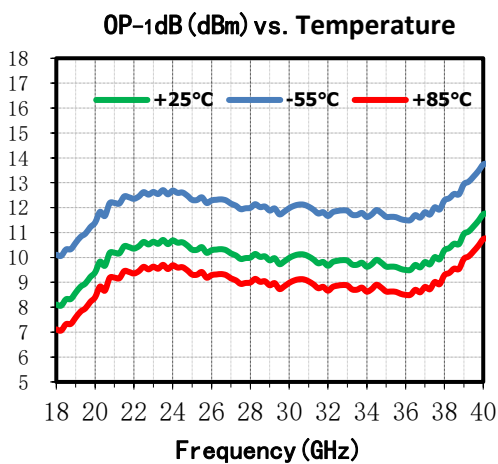
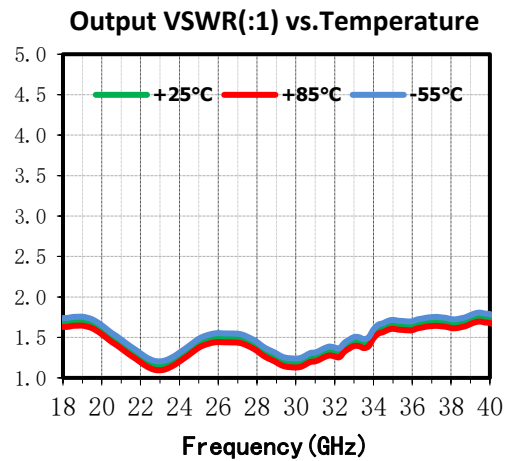
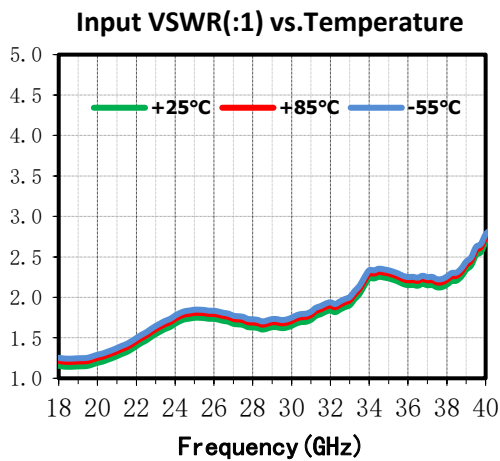
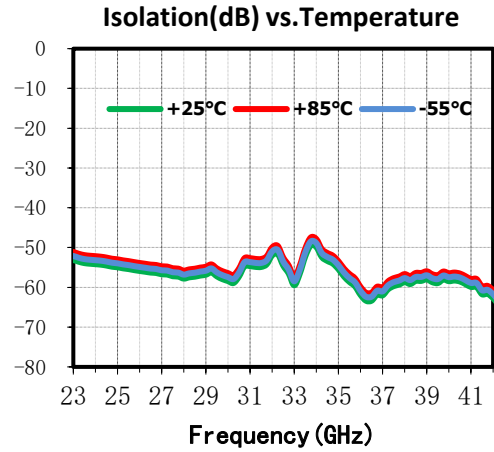
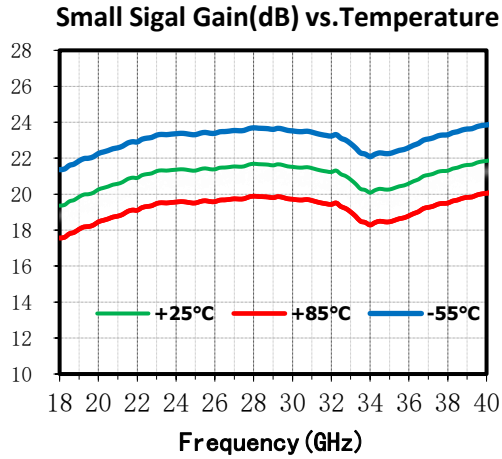
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Typical Performance Curve



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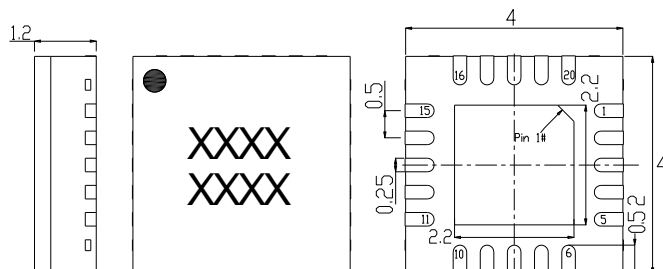


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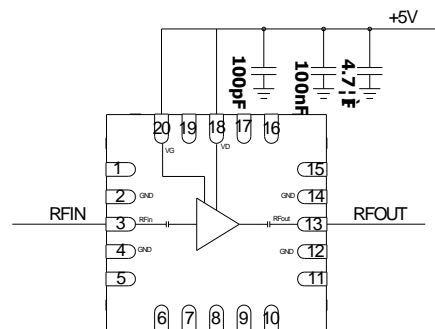
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Outline Drawing

All dimensions in mm



Assembly Diagram



Attention:

1. GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.
2. The RF input and RF output ports withstand voltage is 12V,
3. The ESD Sensitivity (HBM) of SAC4019Q4 is Class 0.

Revision History

Revision	Date	Comment
1.0	AUG 05, 2024	First Release

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