

SAC3904Q3

GaAs MMIC Driver Amplifier
7~12GHz

Rev 1.0

Features

- Frequency: 7~12GHz
- Gain: 24dB
- Output P-1dB: 17.5dBm
- Supply Voltage: +5V@68mA
- Size: 3mm×3mm×1.3mm

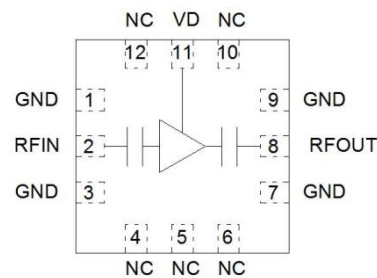
General Description

SAC3904Q3 is a GaAs MMIC driver amplifier which operates between 7~12GHz. The amplifier provides 24dB of gain, 17.5dBm output P-1dB power and 5.5dB noise figure while requiring 68 mA from a +5V supply voltage.

Typical Applications

- EW
- Cellular Infrastructure
- SATCOM
- Beamforming Modules
- Test Equipment and Sensors

Functional Diagram



Electrical Performance

$T_A=25^{\circ}\text{C}$, $V_D=+5\text{V}$, $I_D=68\text{mA}$, $Z_0=50\Omega$

Parameter	Min.	Typ.	Max.	Units
Frequency Range	7~12			GHz
Small Signal Gain	—	24	—	dB
Small Signal Gain Flatness	—	1.5	—	dB
Reverse Isolation	—	-47	—	dB
Input/Output Return Loss	—	-15	—	dB
Noise Figure	—	5.5	—	dB
Output Power for 1 dB Compression (OP-1dB)	—	17.5	—	dBm
Output Third Order Intercept (OIP ₃)	—	27	—	dBm
Supply Current(I _D)	—	68	—	mA

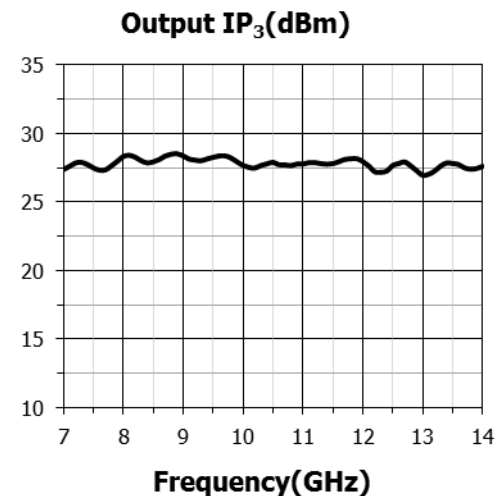
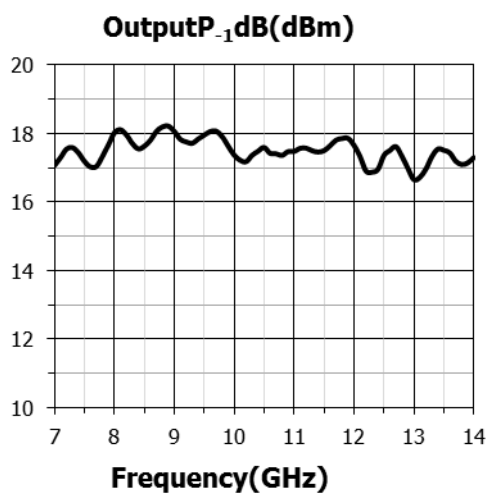
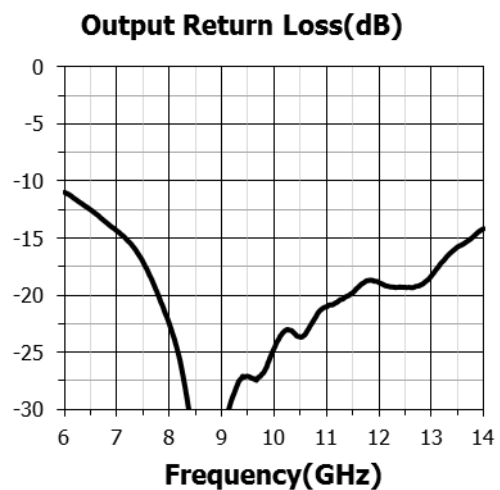
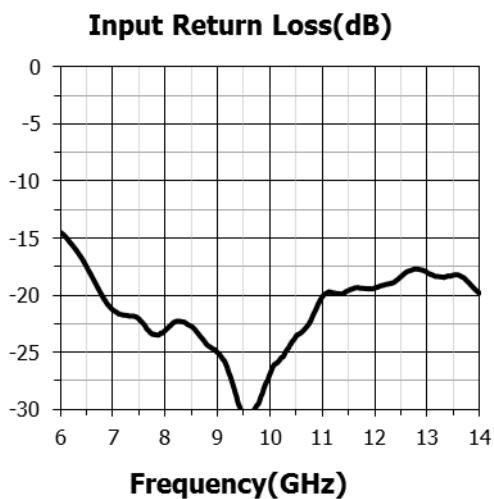
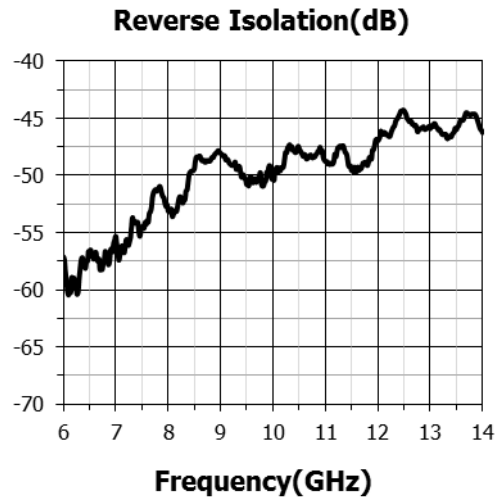
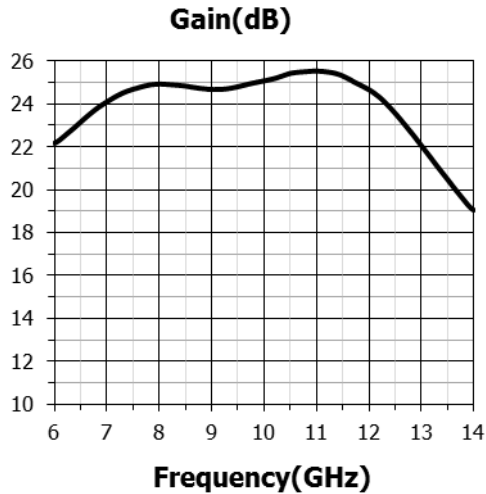
Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel temperature	150°C	Storage Temperature	-65°C~+150°C

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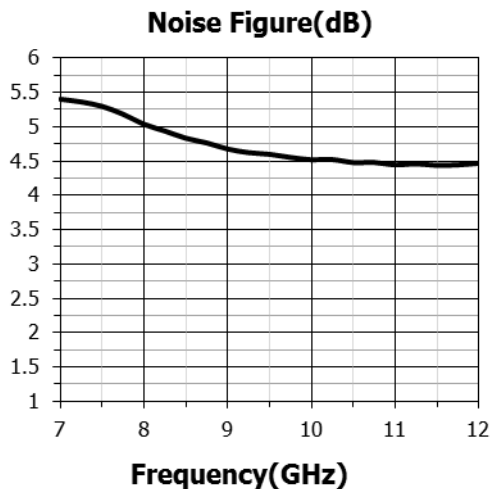
Typical Performance Curve



SAC3904Q3

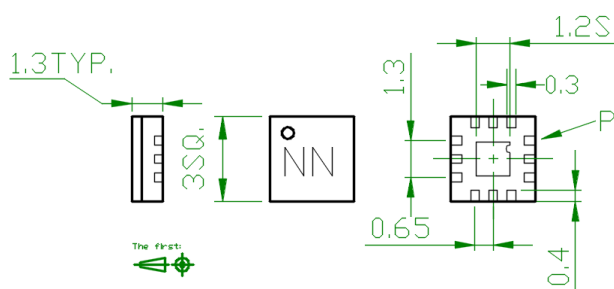
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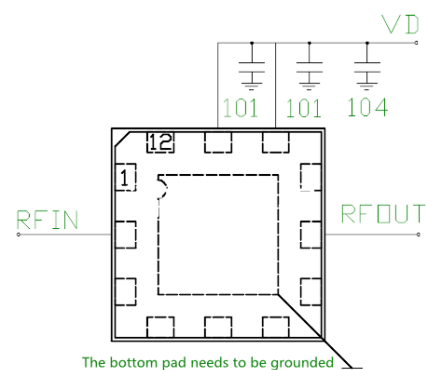


Outline Drawing

(All dimensions in mm)



Assembly Diagram



Attention:

1. The moisture resistant grade of SAC3904Q3 is 2a, the storage environment $\leq 30^{\circ}\text{C}/60\%$, the surrounding workshop life is 4 weeks.
2. After un-packing, it is necessary to bake the parts for 6 hours in $125\pm 5^{\circ}$ degree environment before soldering.
3. GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.
4. Do not use ultrasonic cleaning!
5. Do not use a hot air gun to blow the chip surface!
6. The bottom center pad of the package needs low impedance grounding.

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