

Features

- Frequency: 0.8GHz~4GHz
- Gain: 38dB
- Output P_{-1dB}: 19.5dBm
- Supply Voltage: +5V@120mA
- Die Size: 1.57mm×1.25mm×0.1mm

Typical Applications

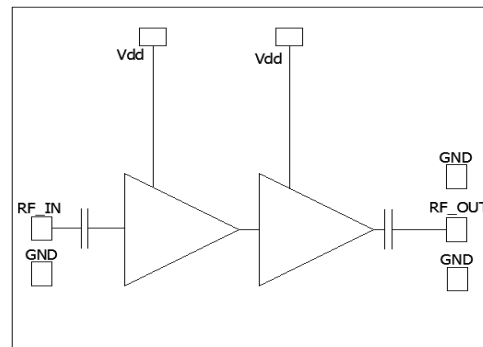
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

SAC3011 is a GaAs MMIC low noise amplifier die which operates between 0.8GHz~4GHz. The amplifier can provide 38dB gain, 19.5dBm Output P_{-1dB} and 1.5dB noise figure from 120 mA 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°C, V_D=+5V, I_D=120mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.8~4			GHz
Gain	—	38	—	dB
Gain Flatness	—	0.8	—	dB
Gain Variation Over Temperature	—	0.015	—	dB/°C
Input/Output VSWR	—	1.7	—	:1
Noise Figure	—	1.5	—	dB
Output Power for 1 dB Compression (OP _{-1dB})	—	19.5	—	dBm
Output Third Order Intercept (OIP ₃)	—	30	—	dBm
Supply Current(I _D)	—	120	—	mA

Absolute Maximum Ratings

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

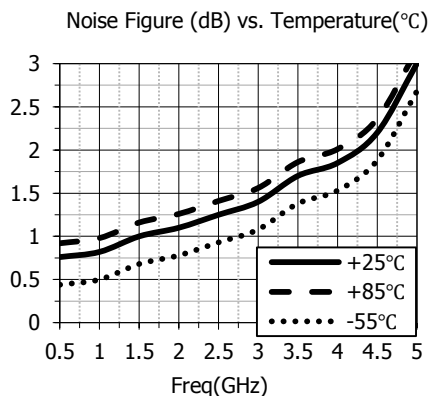
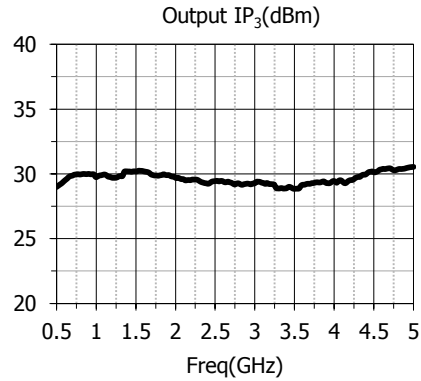
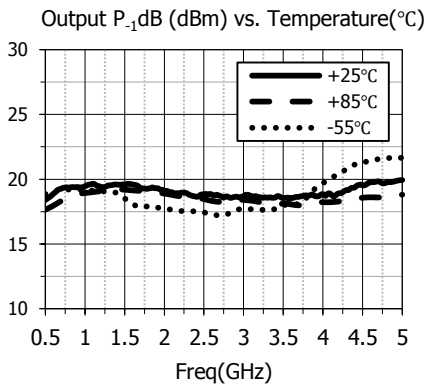
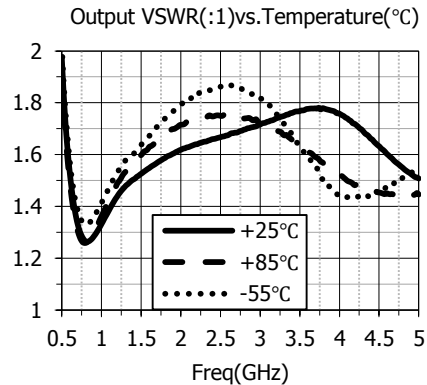
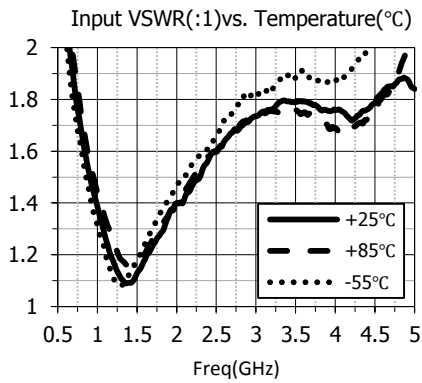
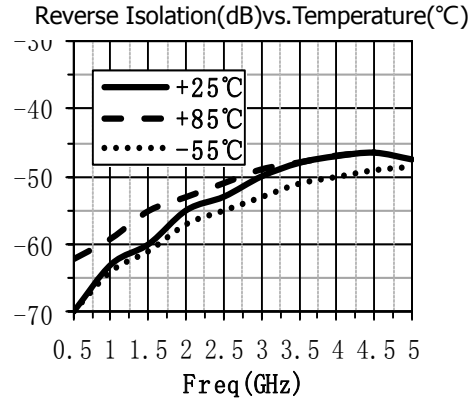
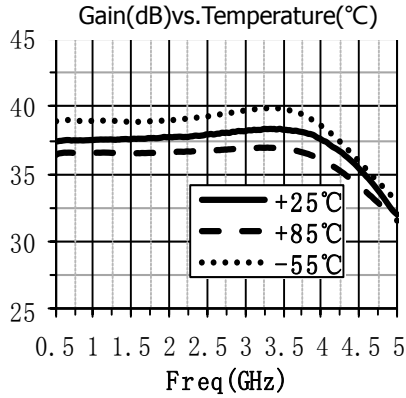
SAC3011



GaAs MMIC Low Noise Amplifier
0.8GHz~4GHz

Rev 2.1

Typical Performance Curve



SuperApex, LLC

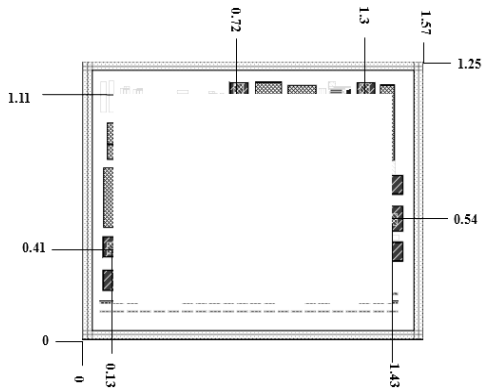
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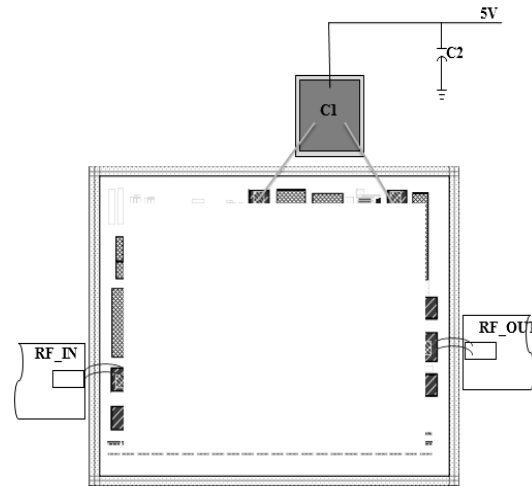
GaAs MMIC Low Noise Amplifier
0.8GHz~4GHz

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Die Outline
(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	200pF	CHIP CAPACITOR	RADVISTA	—
C2	10nF	GRM155R71H103KA88D	MURATA	0402

Attention:

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