

Features

- Frequency :2.0GHz~4.0GHz
- Gain: 28dB
- Noise Figure: 1dB
- Supply Voltage: +5V@45mA
- Die Size: 1.2mm×1.24mm×0.1mm

Typical Applications

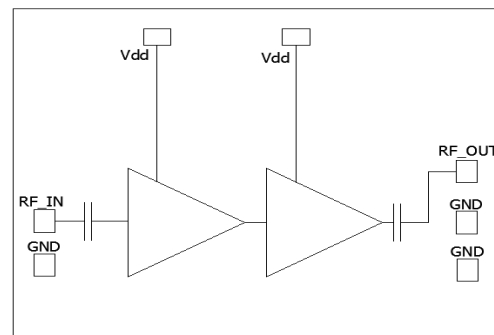
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and measurement
- Fiber Optics

General Description

SAC3031 is a GaAs MMIC low noise amplifier die which operates between 2.0GHz~4.0GHz. The amplifier can provide 28dB gain, 13dBm OutputP₁dB, 1dB noise figure from a 45mA 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



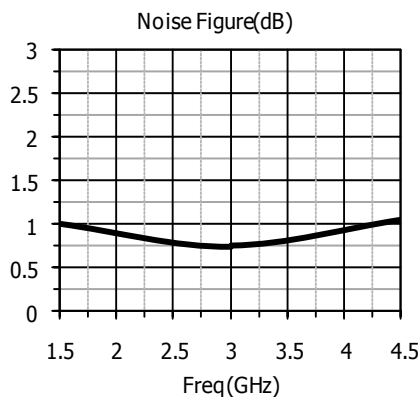
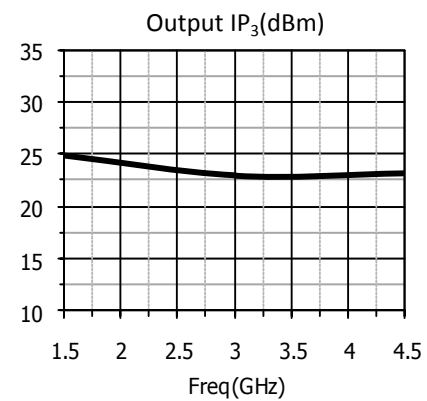
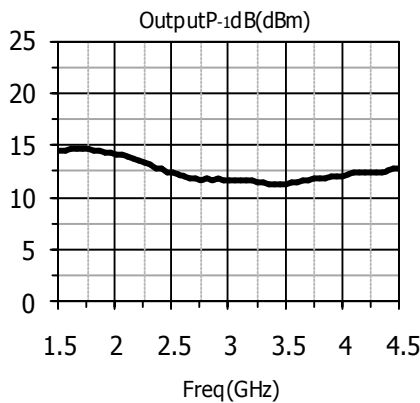
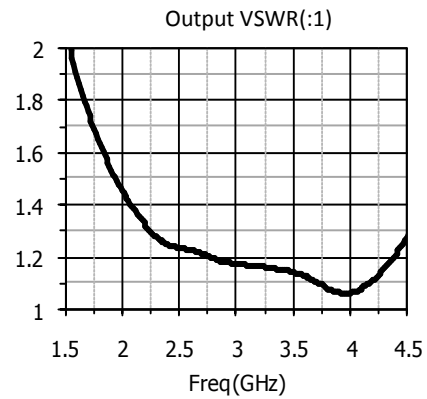
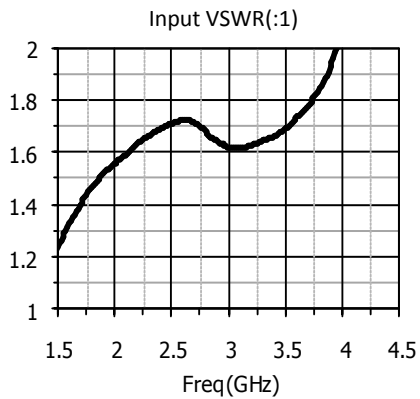
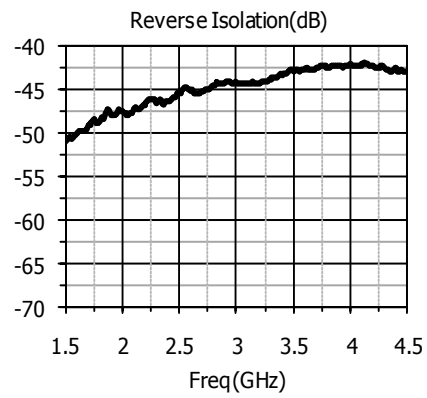
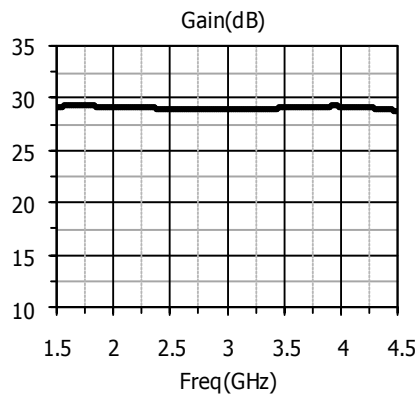
Electrical Performance (T_A=25°C, V_D= +5V, I_D=45mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2.0~4.0			GHz
Gain	—	28	—	dB
Gain Flatness	—	0.8	—	dB
Reverse Isolation	—	-45	—	dB
Input/Output VSWR	—	1.8	—	:1
Noise Figure	—	1	—	dB
Output Power for 1 dB Compression (OP ₁ dB)	—	13	—	dBm
Output Third Order Intercept (OIP ₃)	—	24	—	dBm
Supply Current(I _D)	—	45	—	mA

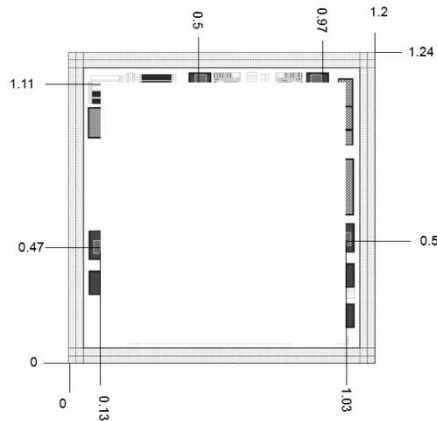
Absolute Maximum Ratings

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

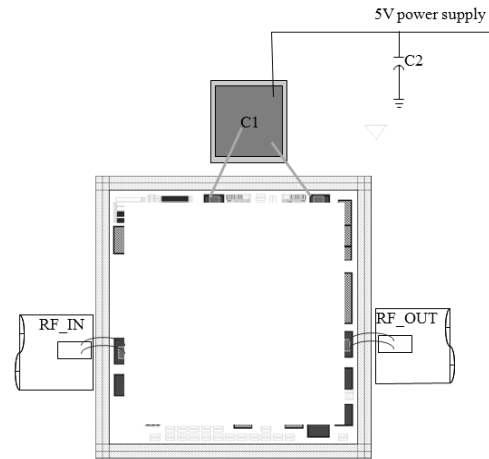
Typical Performance Curve



Die Outline
(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	100pF	—	RADVISTA	CHIP
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.