

Features

- Frequency: 0.7GHz~6GHz
- Gain: 16dB
- OutputP_{-1dB}: 16.5dBm
- Supply Voltage: +5V@45mA
- Die Size: 1.2mm×1.25 mm×0.1 mm

Typical Applications

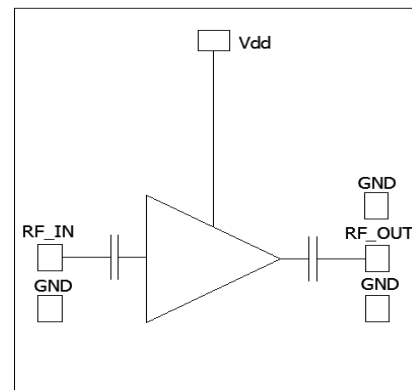
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

SAC3010 is a GaAs MMIC low noise amplifier die which operates between 0.7GHz~6GHz. The amplifier can provide 16dB gain, 16.5dBm OutputP_{-1dB} and less than 2.3dB 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	0.7~6			GHz
Gain	—	16	—	dB
Gain Flatness	—	1.8	—	dB
Reverse Isolation	—	-25	—	dB
Input/Output VSWR	—	1.7	—	: 1
Noise Figure	—	2	—	dB
Output Power for 1 dB Compression (OP _{-1dB})	—	16.5	—	dBm
Output Third Order Intercept (OIP ₃)	—	27	—	dBm
Supply Current(I _D)	—	45	—	mA

Absolute Maximum Ratings

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SAC3010



GaAs MMIC Low Noise Amplifier
0.7GHz~6GHz

Rev 2.1

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

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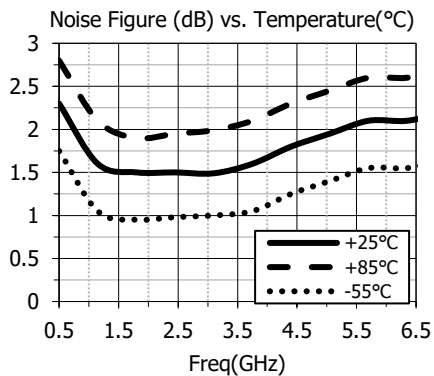
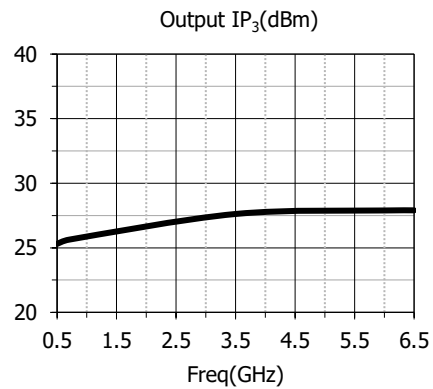
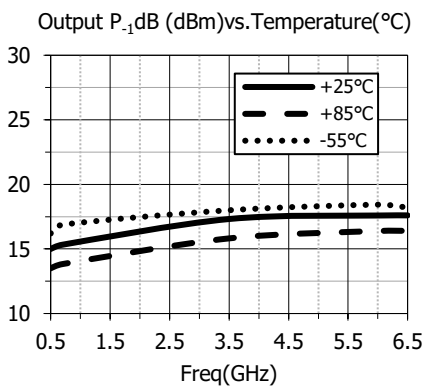
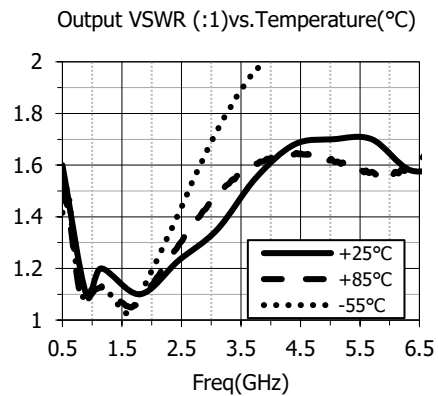
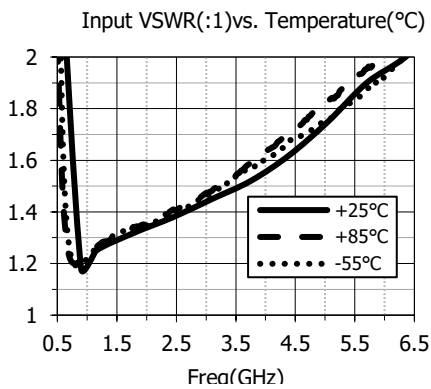
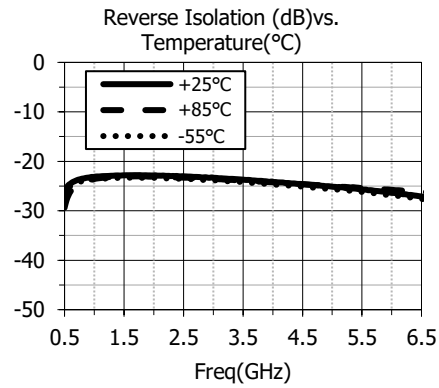
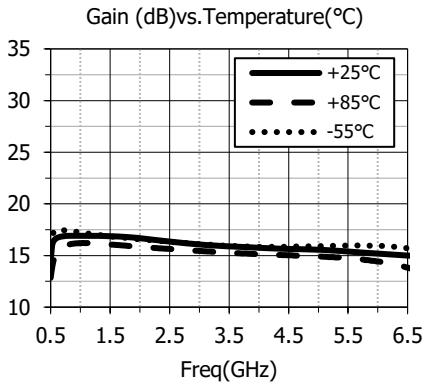
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Typical Performance Curve



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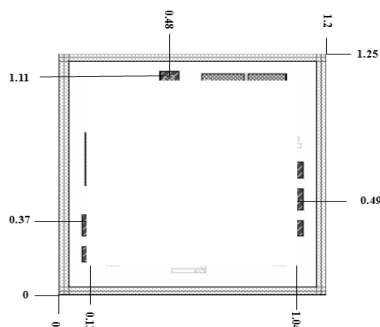
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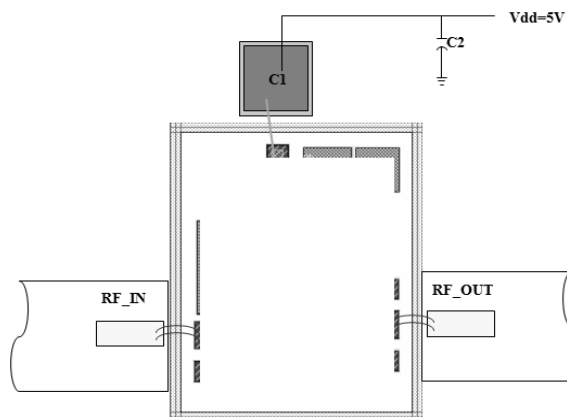
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Die Outline
(all dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	300pF	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.