

SAC3048HP



GaAs MMIC Low Noise Amplifier
1~3.5GHz

Rev 2.0

Features

- Frequency: 1~3.5GHz
- Gain: 25dB
- Noise Figure: 1.2dB
- Power Supply: +5V@60mA
- Package Size:
0.18inchX0.18inchX0.062inch
- Hermetically Packaged

Typical Applications

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

General Description

SAC3048HP is a GaAs MMIC Low Noise Amplifier which operates between 1 to 3.5GHz. The amplifier can provide 25dB gain, 12dBm OutputP_{-1dB}, 1.2dB noise figure from a 60mA supply current.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

Electrical Performance (T_A=25°C, V_D= +5V, I_D=60mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	1~3.5			GHz
Gain	23	25	27	dB
Gain Flatness	—	2	3	dB
Input/Output VSWR	—	1.3	1.8	:1
Noise Figure	—	1.2	1.5	dB
Output Power for 1 dB Compression (OP _{-1dB})	10	12	—	dBm
Output Third Order Intercept (OIP ₃)	—	22	—	dBm
Supply Current(I _D)	—	60	—	mA

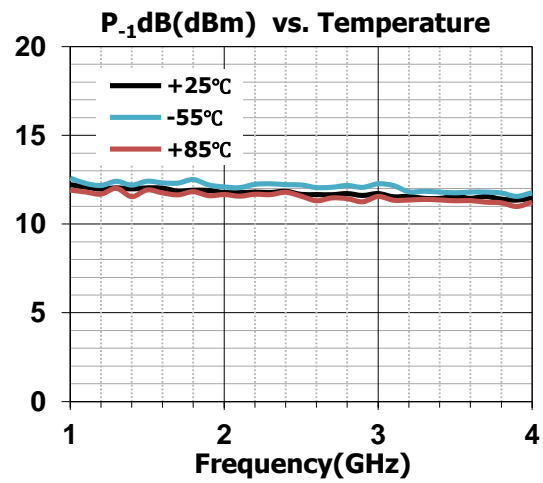
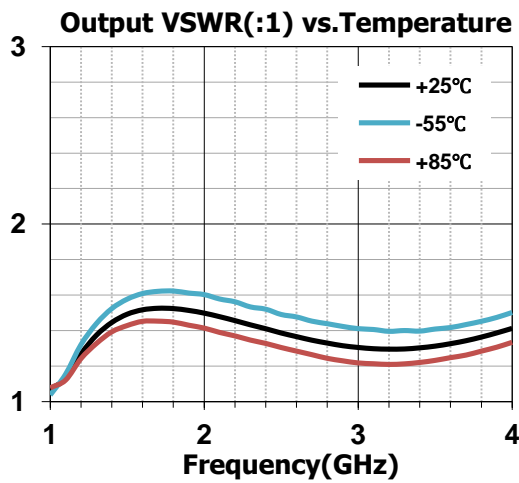
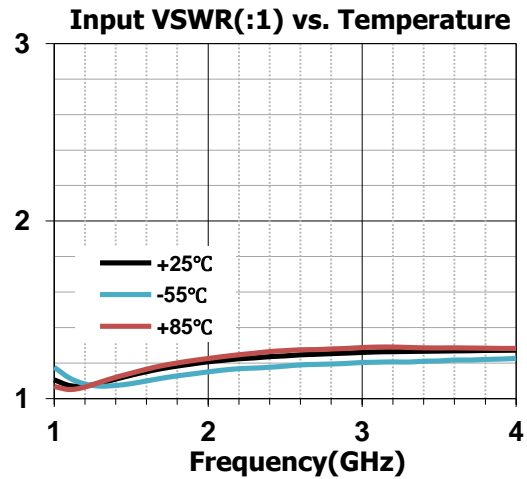
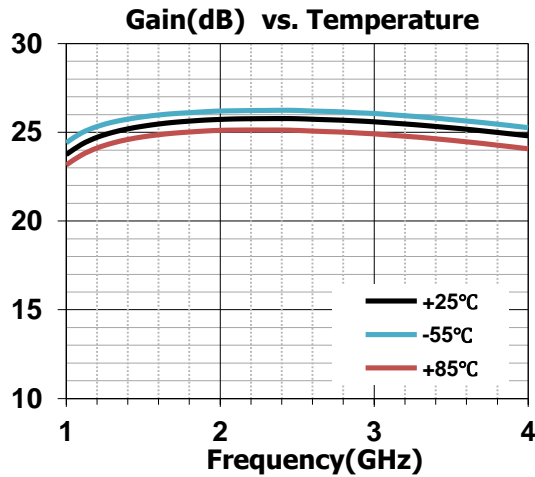
Absolute Maximum Ratings

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

SuperApex, LLC

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Typical Performance Curve

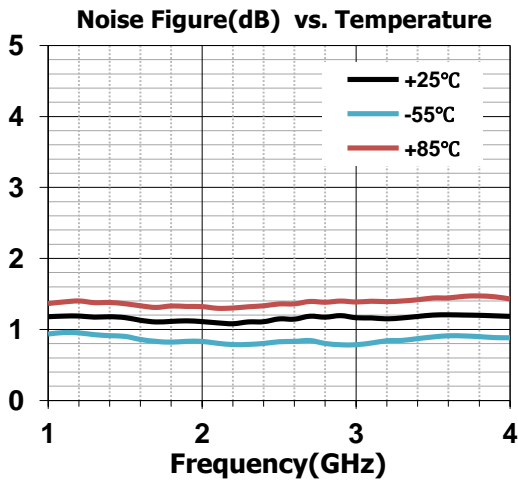


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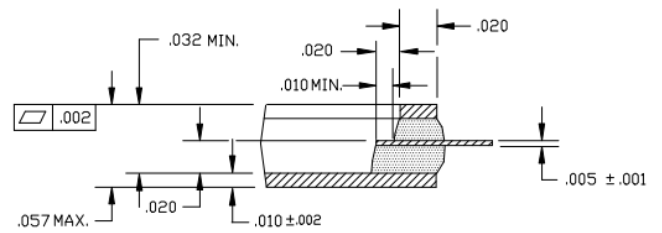
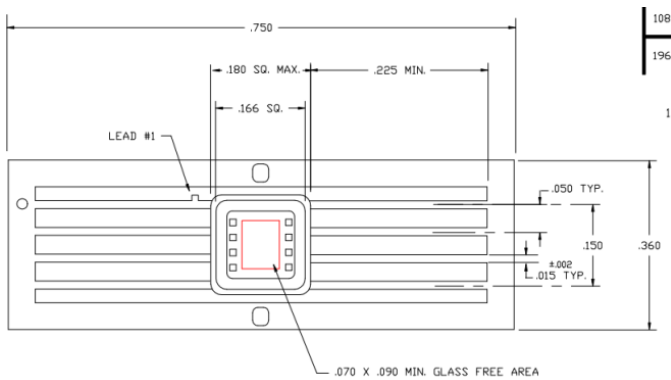


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Package Drawing



Components List

Reference Des.	Value	Part Number	Manuf.
C1,C2,C3	1000pF	GRM188R61H102KA01	MURATA
C4	100pF	GRM188R61H101KA01	MURATA
C5	10nF	GRM1857U1A103JA44	MURATA
L1,L2	1200nH	CC19T40K240G5	Piconics

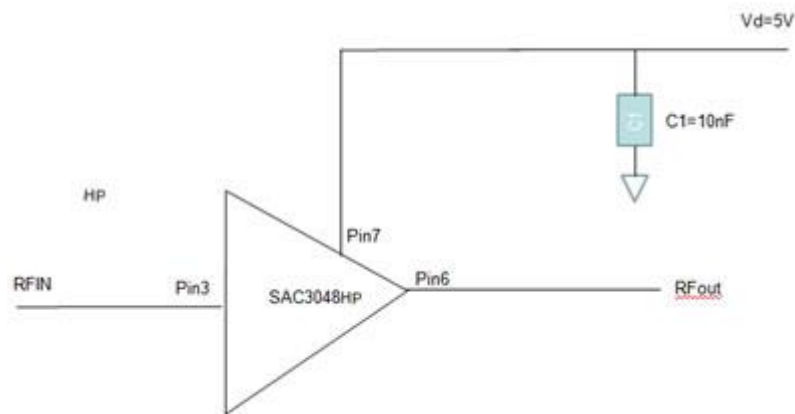
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Pin Names and Descriptions

Pin	Name	Description
3	RFin	RF input pin.
6	RFOUT	RF output pin
7	Vd	Connect to +5V power supply
Package paddle	GND	Package backside must be connected to RF/DC ground

Typical Application Schematics



Attention:

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