

SAC3050HP



GaAs MMIC Low Noise Amplifier
0.02~6GHz

Rev 2.0

Features

- Frequency: 0.02~6GHz
- Gain: 20dB
- Noise Figure: 1.2dB
- Power Supply: +5V@68mA
- Package Size:
0.14inchX0.14inchX0.059inch

Typical Applications

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

General Description

SAC3050HP is a GaAs MMIC Low Noise Amplifier which operates between 0.02 to 6GHz. The amplifier can provide 20dB gain, 19dBm Output P_{1dB}, 1.2dB noise figure from a 68mA 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=68mA, Z_O=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.02~6			GHz
Gain	18.5	20	21.5	dB
Gain Flatness	—	2	3	dB
Input/Output VSWR	—	1.5	1.9	:1
Noise Figure	—	1.2	1.5	dB
Output Power for 1 dB Compression (OP _{1dB})	17.5	19	—	dBm
Output Third Order Intercept (OIP ₃)	30	33	—	dBm
Output second Order Intercept (OIP ₂)	45	50	—	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

SuperApex, LLC

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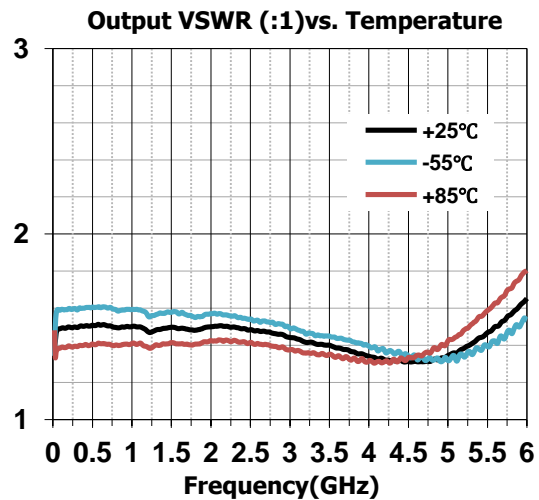
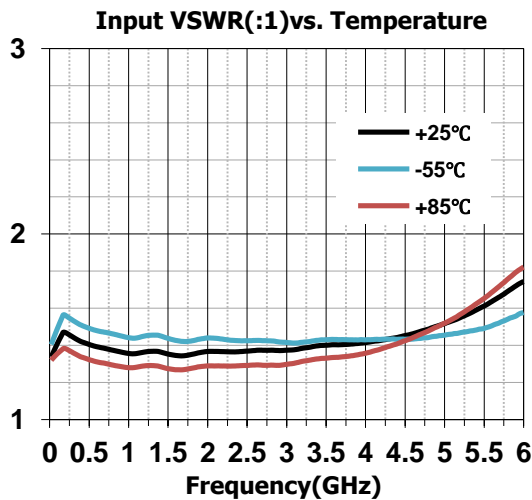
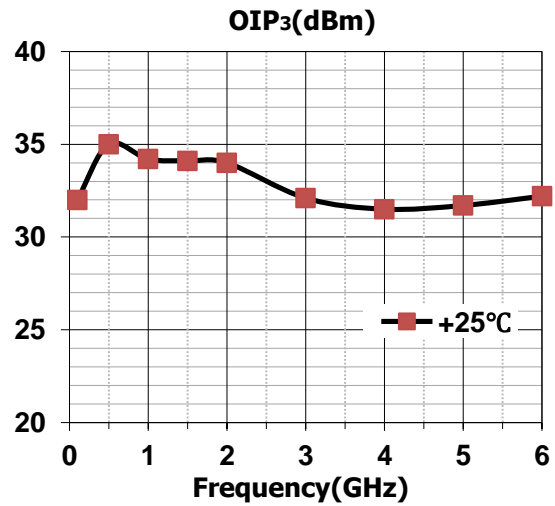
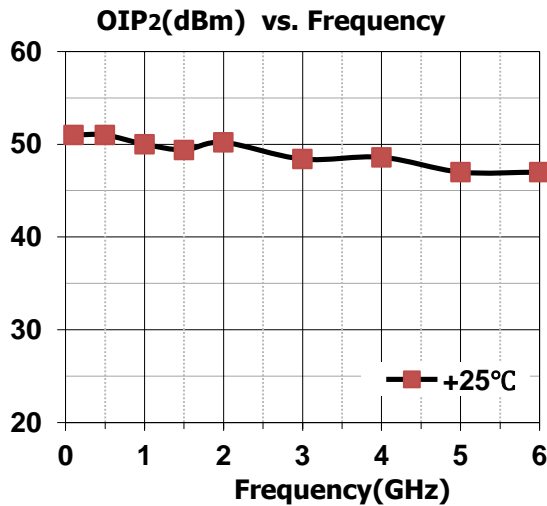
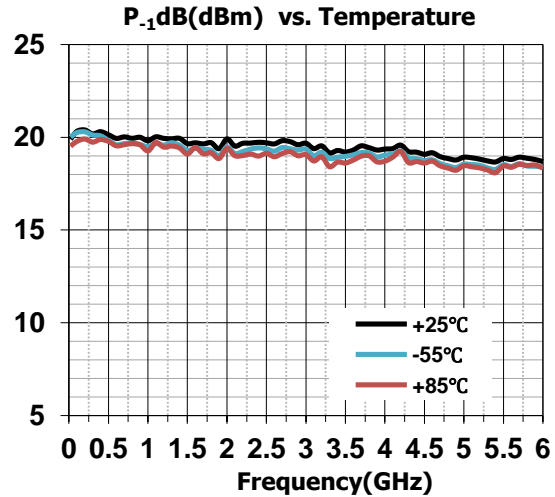
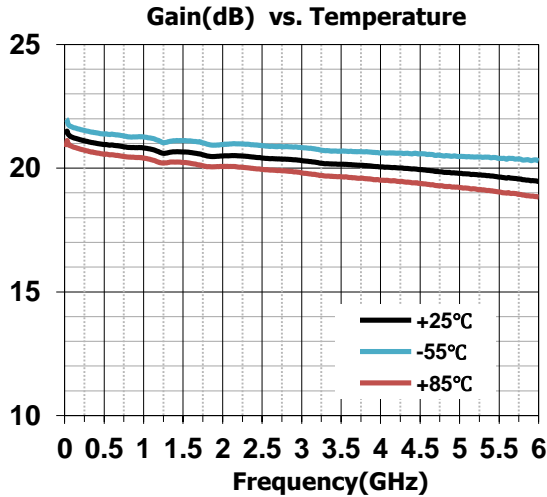
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Typical Performance Curve



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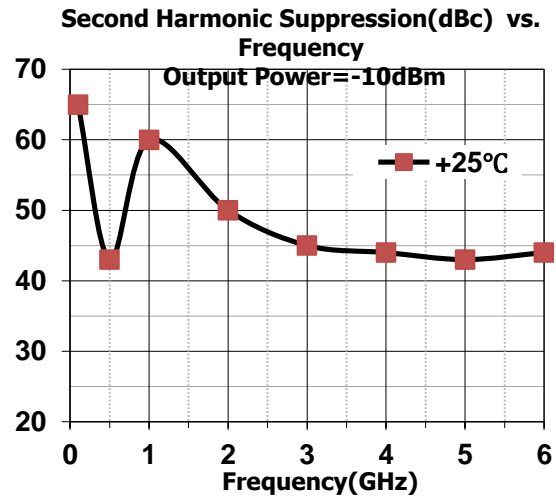
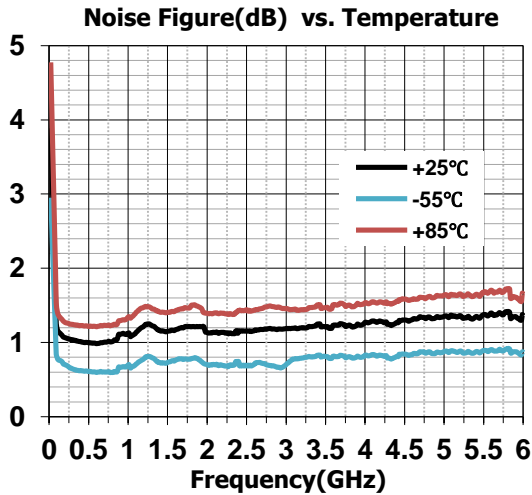
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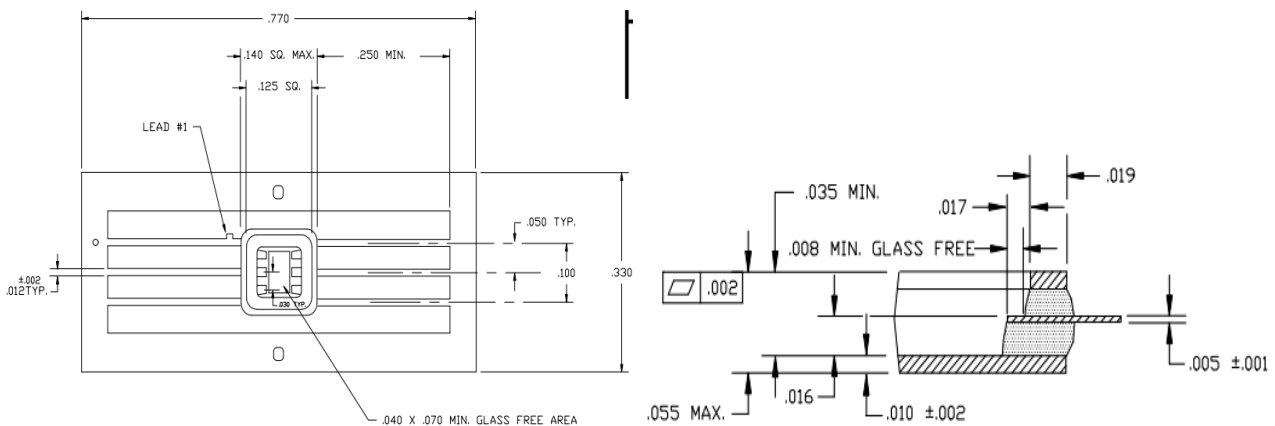


Components List

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

Package Drawing

(All dimensions in inch)



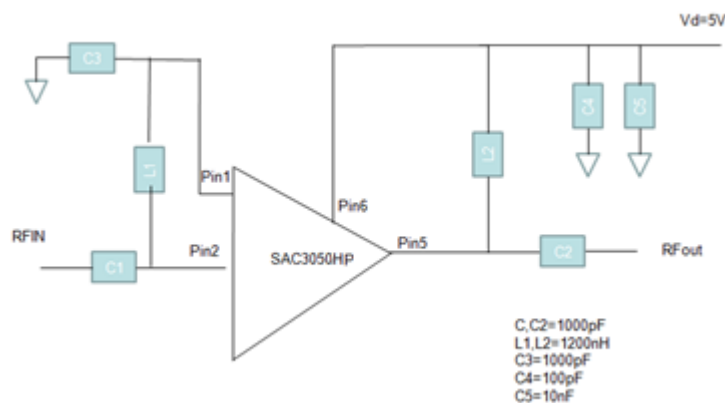
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Pin Names and Descriptions

Pin	Name	Description
1	Vbias	Supply voltage to the gate of first stage FET
2	RFin	RF input pin.This pin requires the use of an external blocking capacitor chose for the frequency of operation
3/4	GND	connect to RF/DC ground
5	RFOUT/DC Bias	RF output and bias pin.This pin requires the use of an external blocking capacitor chose for the frequency of operation
6	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.