

SAC3008B

GaAs MMIC Low Noise Amplifier
0.4~6GHz

Rev 1.0

Features

- Frequency: 0.4~6GHz
- Gain: 18dB
- Output P_{1dB}: 17.5dBm
- Supply Voltage: +5V@58mA
- Die Size: 1.24mm×1.21mm×0.1mm

Typical Applications

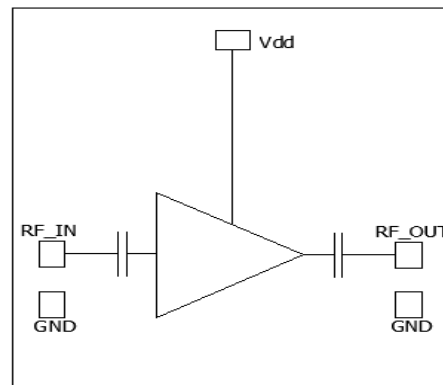
- Microwave radio including point to point communication
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

General Description

SAC3008B is a GaAs MMIC Low Noise Amplifier die which operates between 0.4GHz~6GHz. The amplifier can provide 18dB gain, 17.5dBm Output P_{1dB}, 1.2dB noise figure from a 58 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=58mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.4~6			GHz
Gain	16	18	—	dB
Gain Flatness	—	±1	±2	dB
Reverse Isolation	—	-25	—	dB
Input/Output VSWR	—	1.5	1.7	:1
Noise Figure	—	1.2	1.8	dB
Output Power for 1 dB Compression (OP _{1dB})	16	17.5	—	dBm
Output Third Order Intercept (OIP ₃)	25	30	—	dBm
Supply Current(I _D)	—	58	—	mA

Absolute Maximum Ratings

Maximum Input Power	+15dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

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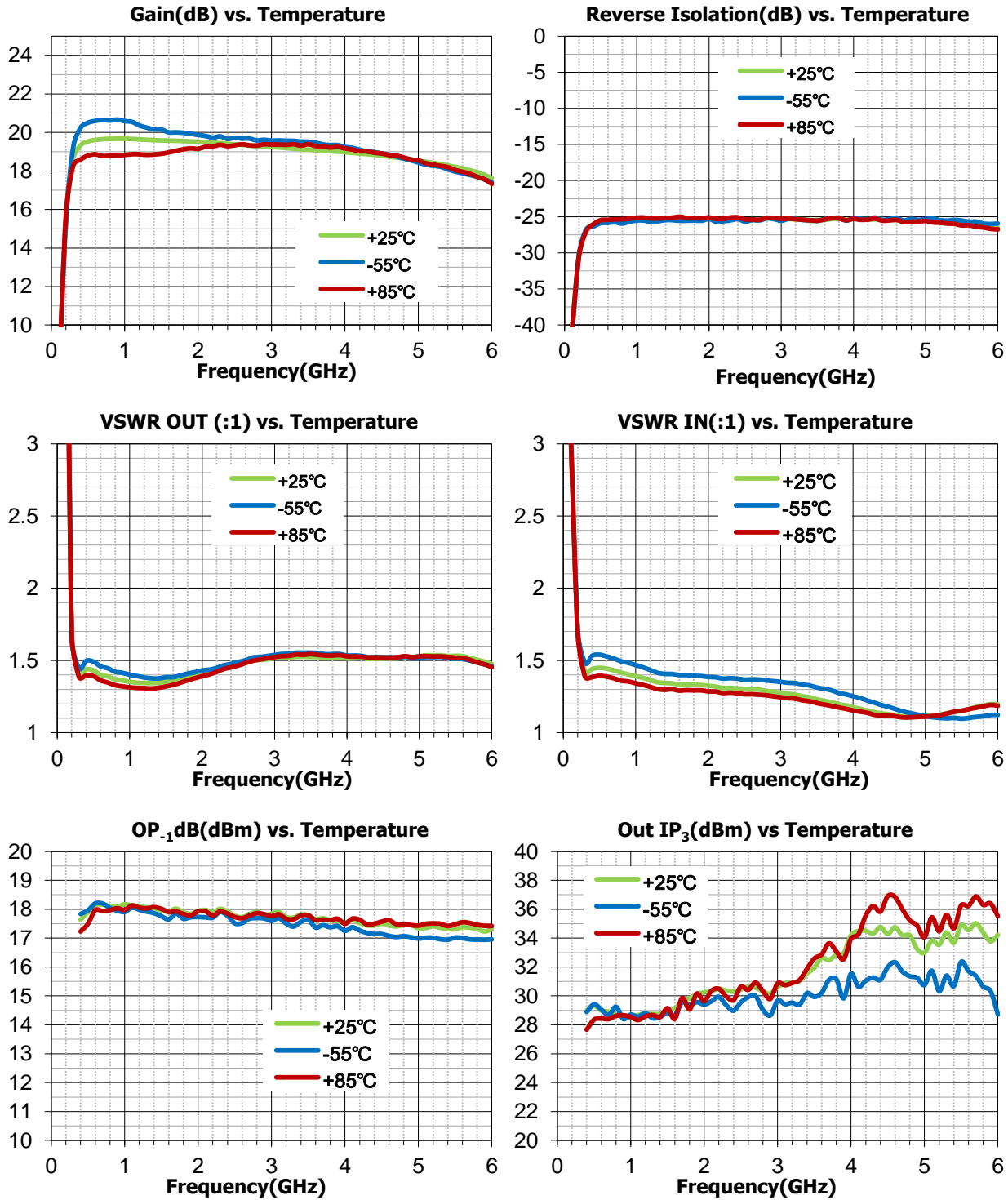
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Typical Performance Curve



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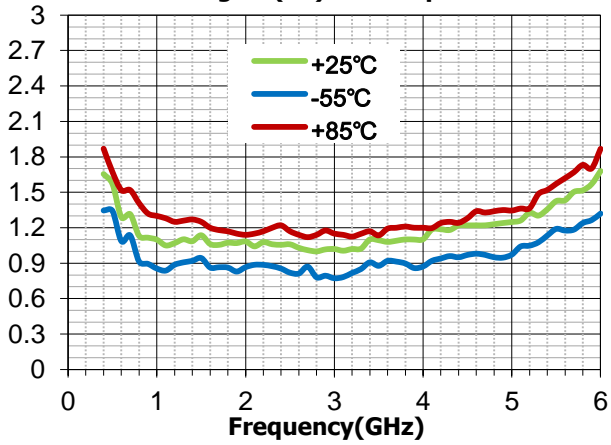
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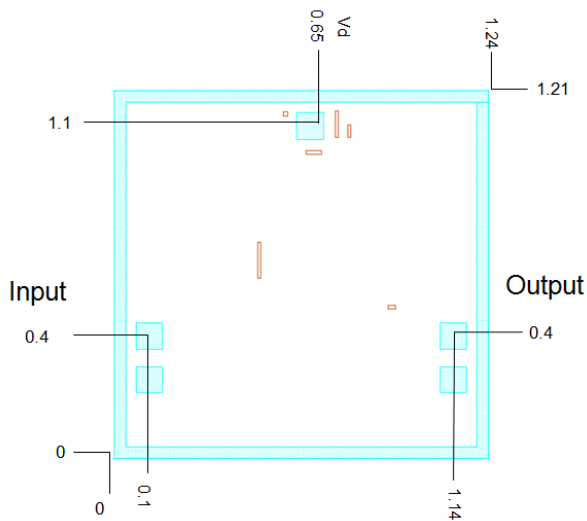
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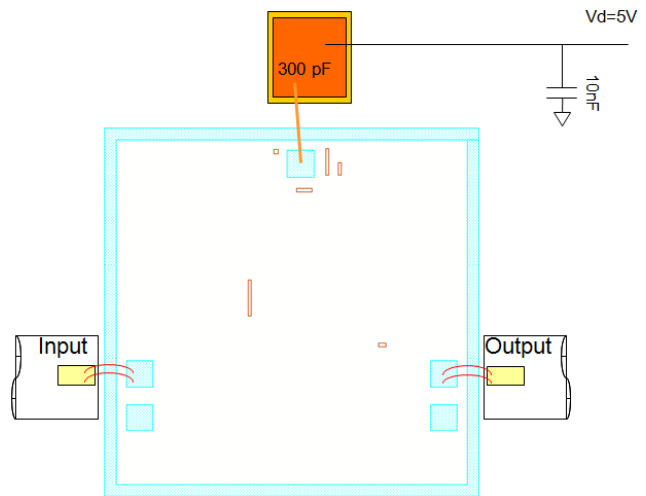
Noise Figure(dB) vs. Temperature



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.

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