

SAC3062

GaAs MMIC Low Noise Amplifier
1~12GHz

Rev 1.1

Features

- Frequency: 1~12GHz
- Gain: 18dB
- Noise Figure: 1.6dB
- Output P_{-1dB}: 15dBm
- Die Size: 1.24mm×1.21mm×0.1mm

Typical Applications

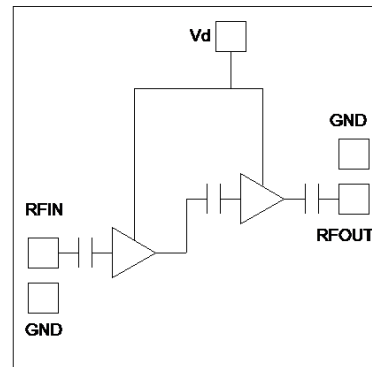
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

SAC3062 is a GaAs MMIC low noise amplifier die which operates between 1~12GHz. The amplifier can provide 18dB gain, 15dBm Output P_{-1dB} and 1.6dB 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.

Functional Diagram



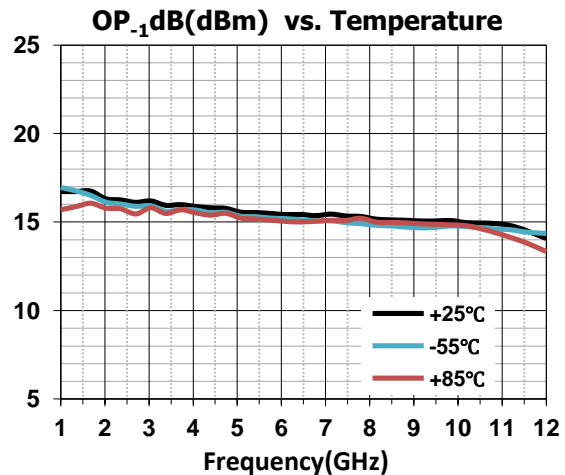
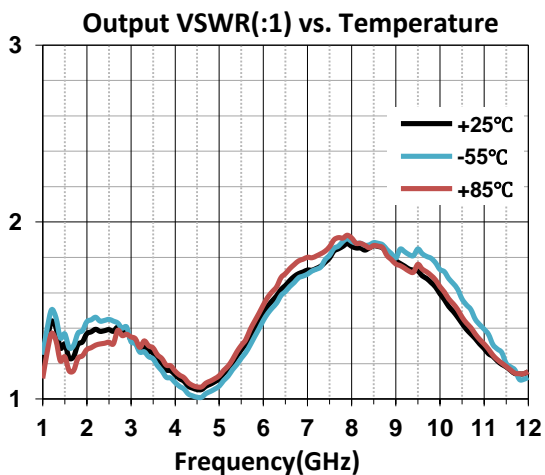
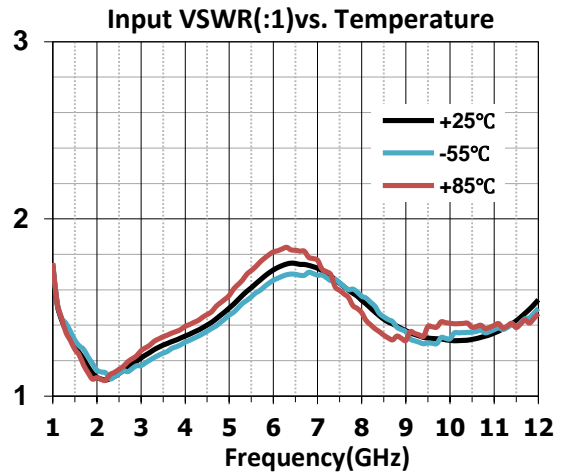
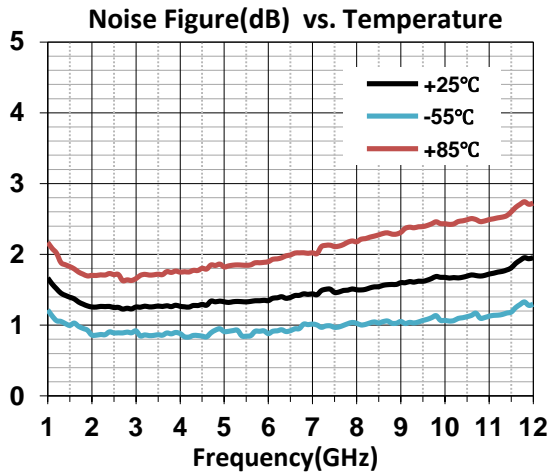
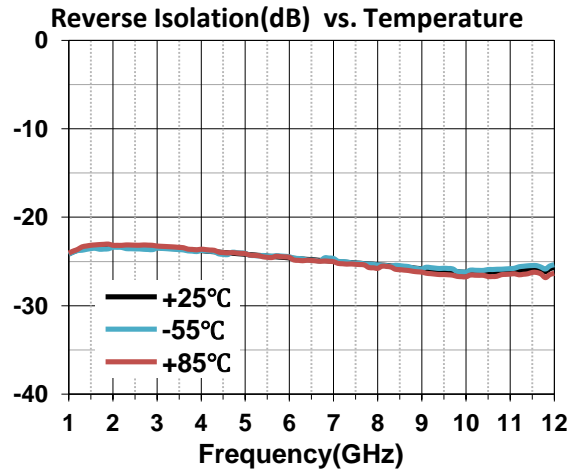
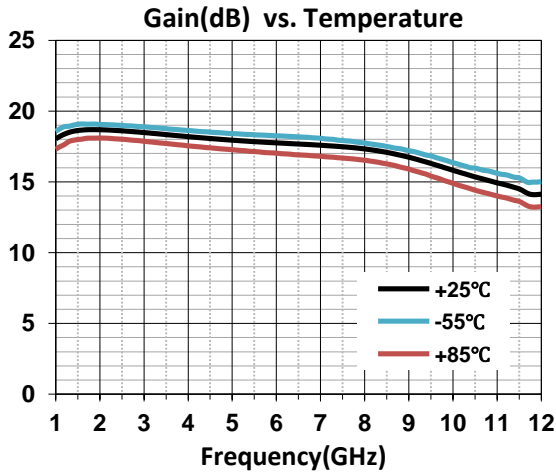
Electrical Performance (T_A=25°C, V_d=+5V, I_D=60mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	1~12			GHz
Gain	14	18	20	dB
Gain Flatness	—	±2	—	dB
Reverse Isolation	-20	-25	—	dB
Input VSWR	—	1.4	2.0	:1
Output VSWR	—	1.4	1.8	:1
Noise Figure	—	1.6	2.4	dB
Output IP ₃	22	25	—	dBm
Output P _{-1dB}	13	15	—	dBm
Supply Current(I _D)	—	60	—	mA

Absolute Maximum Ratings

Maximum Input Power	+10dBm	Operating Temperature	-40°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C
Supply Voltage	5.5VDC	Supply Current	170 mA

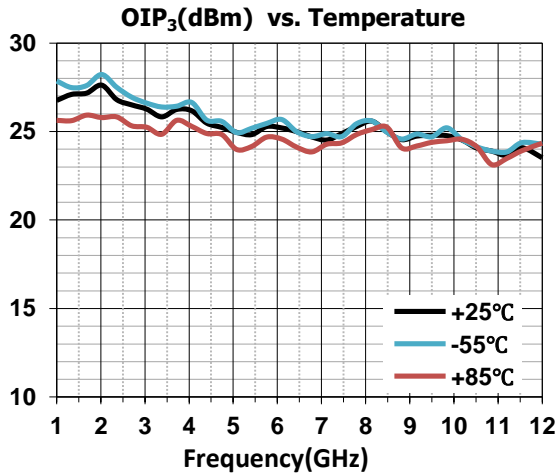
Typical Performance Curve



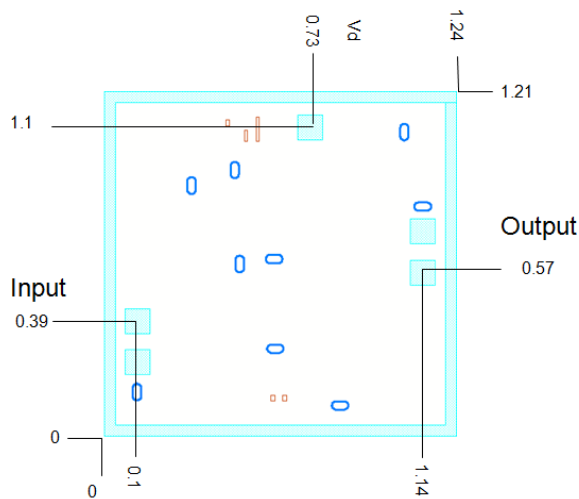
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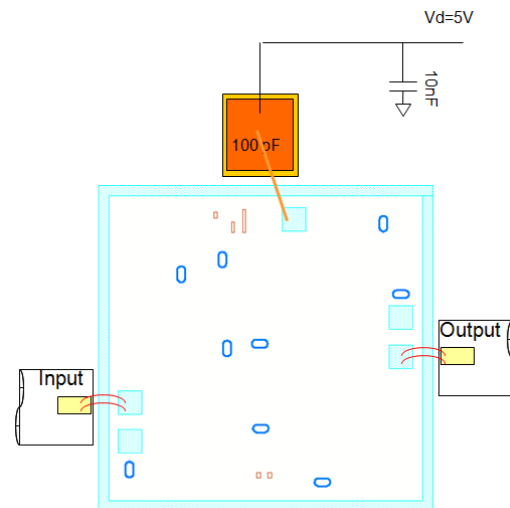
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Outline
(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.
C1	100pF	GRM188R61H101KA01	MURATA
C2	10nF	GRM1857U1A103JA44	MURATA

Attention:

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