

Features

- Frequency: 0.02~6GHz
- Gain: 20dB
- Noise Figure: 0.9dB
- Power Supply: +5V@68mA
- Bare die: 0.82mmx1.21mmx0.1mm

Typical Applications

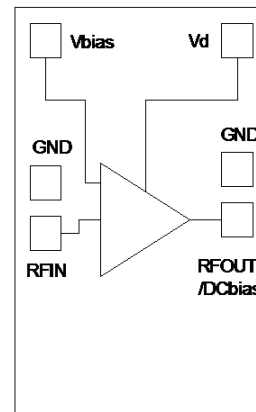
- Microwave radio
- Telecommunication
- Weather radar
- Optical communication
- Test instrumentation
- SatCom
- VSAT
- Military and Aerospace

General Description

SAC3050 is a GaAs MMIC Low Noise Amplifier bare die which operates between 0.02 to 6GHz. The amplifier can provide 20dB gain, 19dBm OutputP_{-1dB}, 0.9dB 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.

Functional Diagram



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	22.5	dB
Gain Flatness	—	2	3	dB
Input/Output VSWR	—	1.5	1.9	:1
Noise Figure	—	0.9	1.4	dB
Reverse Isolation	—	-25	—	dB
Output Power for 1 dB Compression (OP _{-1dB})	17.5	19	—	dBm
Output Third Order Intercept (OIP ₃)	30	33	—	dBm
Output Third Order Intercept (OIP ₂)	—	48	—	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

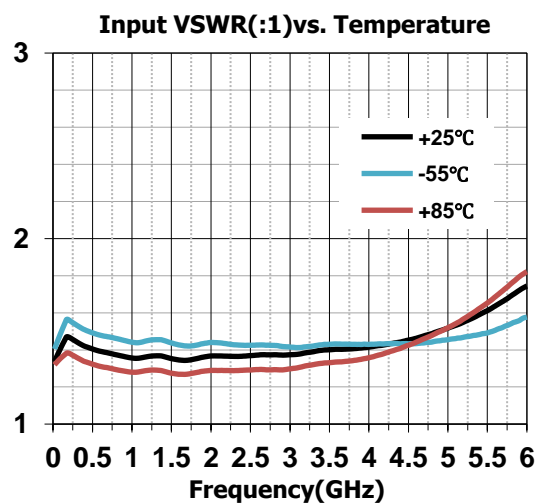
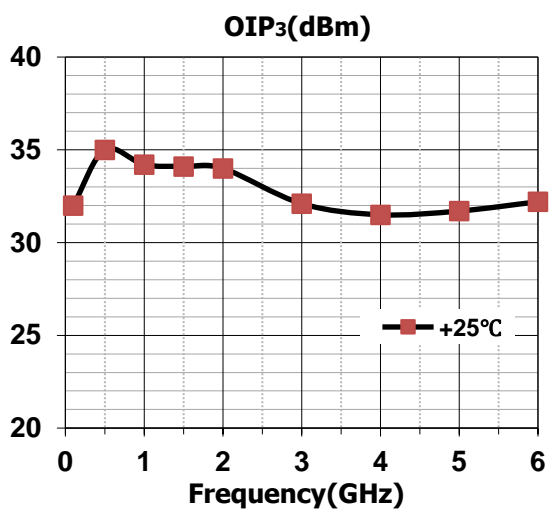
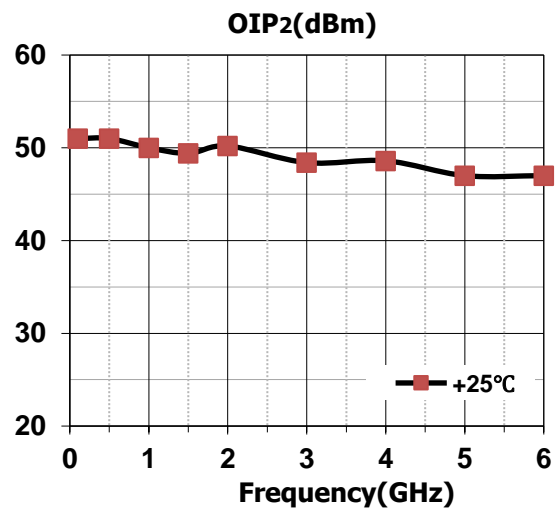
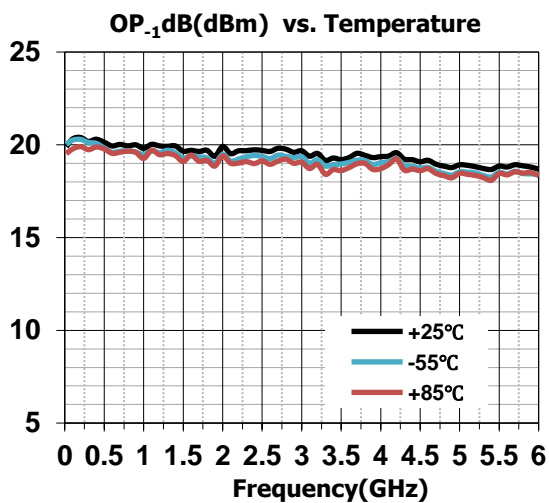
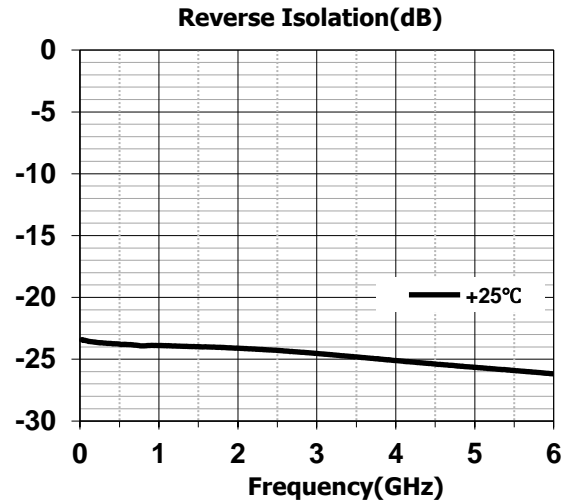
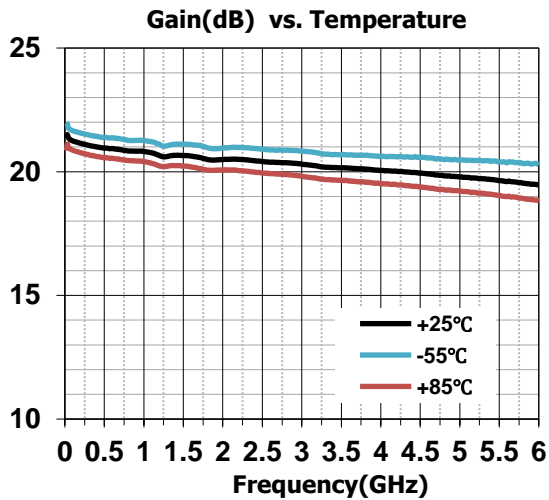
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GaAs MMIC Low Noise Amplifier
0.02~6GHz

Rev3.4

Typical Performance Curve



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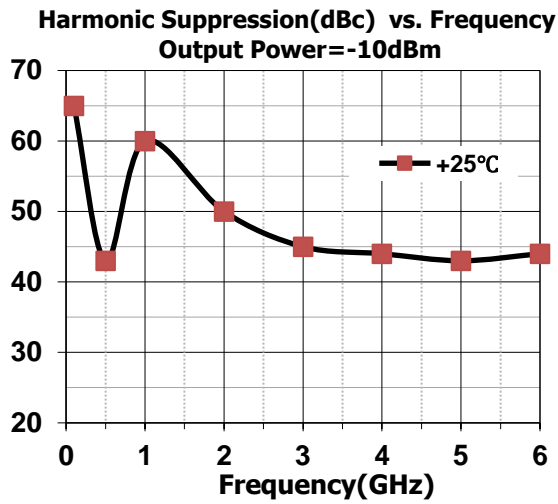
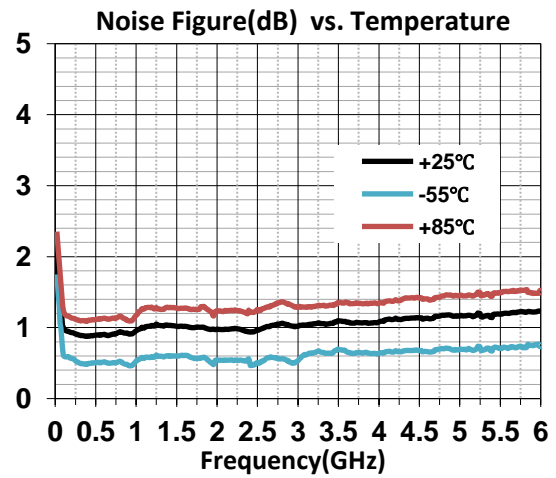
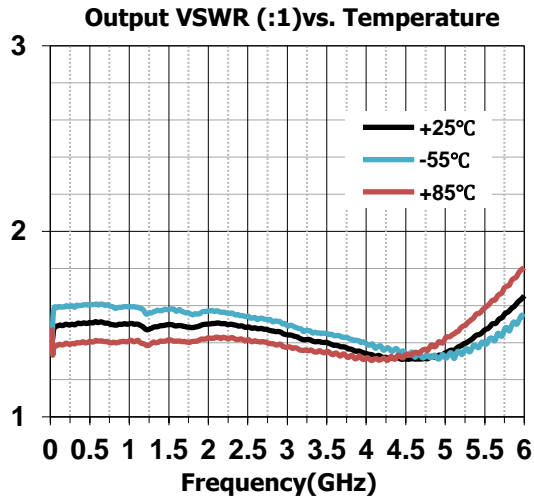
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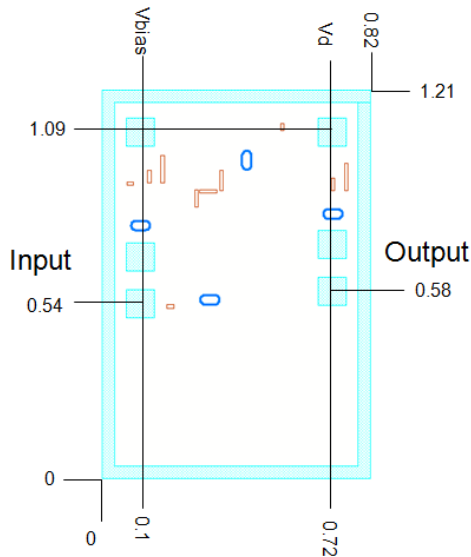


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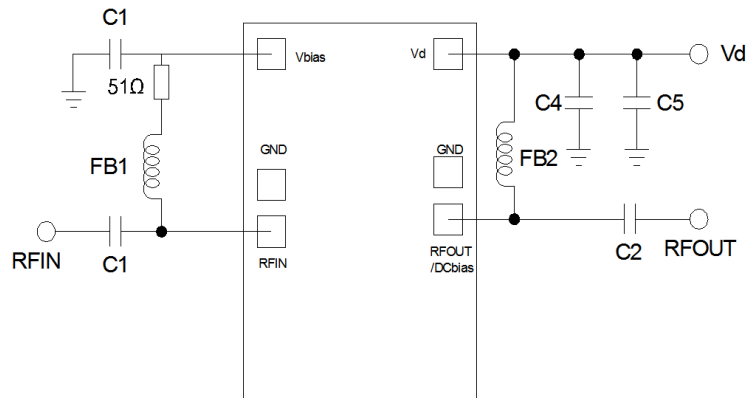
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Rev3.4

Die Outline
(All dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.
C1,C2,C3	1000pF	GRM188R61H102KA01	MURATA
C4	100pF	GRM188R61H101KA01	MURATA
C5	10nF	GRM1857U1A103JA44	MURATA
FB1,FB2	—	MMZ1005A222ET	TDK

Attention:

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