

SAC3056B



GaAs MMIC Low Noise Amplifier
2~4GHz

Rev 1.2

Features

- Frequency: 2~4GHz
- Gain: 30dB
- Noise Figure: 0.4 dB typ. 0.6dB max.
- Single Power Supply: +5V/55mA
- Output IP₃: 27dBm@2.3GHz
- Die Size: 1.1mm×1.24mm×0.1mm

Typical Applications

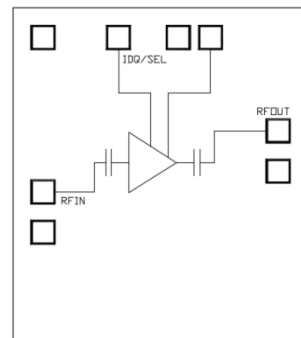
- Wide Band Receiver
- High Density MCM
- EW

General Description

SAC3056B is a GaAs MMIC low noise amplifier die which operates between 2~4GHz. The amplifier can provide 30dB gain, 20dBm Output P₁dB and less than 0.6dB noise figure.

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=55mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	2~4			GHz
Gain	28	30	32	dB
Gain Flatness	—	±0.75	—	dB
Reverse Isolation	—	-39	—	dB
Input VSWR/ Output VSWR	—	1.5	1.75	: 1
Noise Figure	—	0.4	0.6	dB
Output P ₁ dB	11	13	—	dBm
Output IP ₃	—	25*	—	dBm
Supply Current(ID)	—	55	70	mA
Supply Voltage(VD)	5	—	6	V

- Pout/Tone=0dBm Fc=2.3GHz,Δf=1MHz

Absolute Maximum Ratings

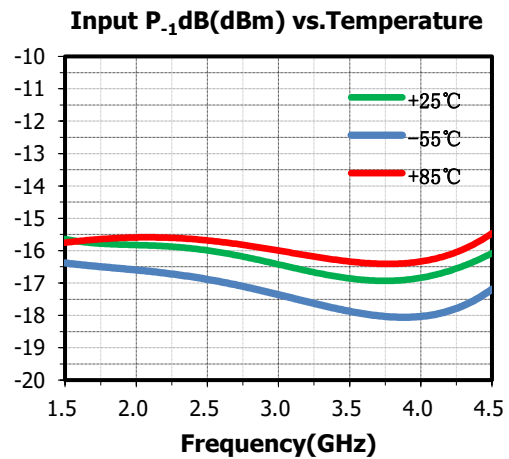
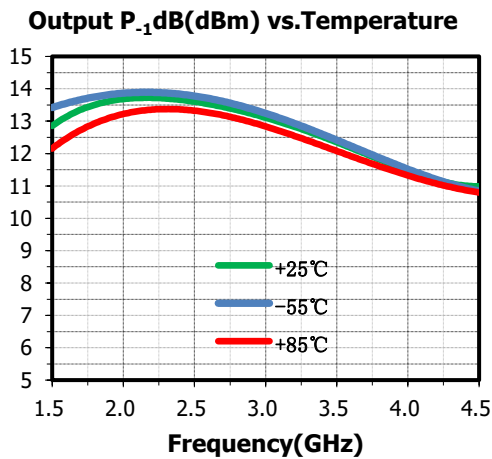
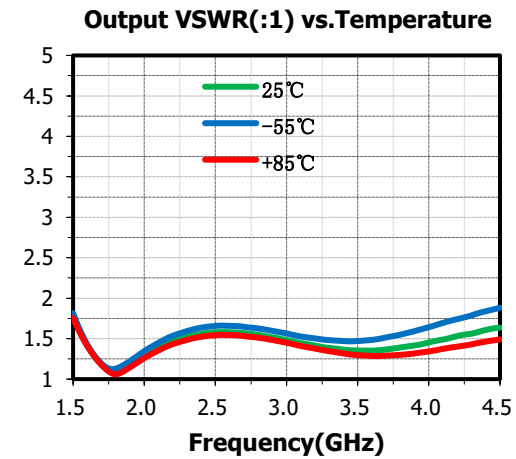
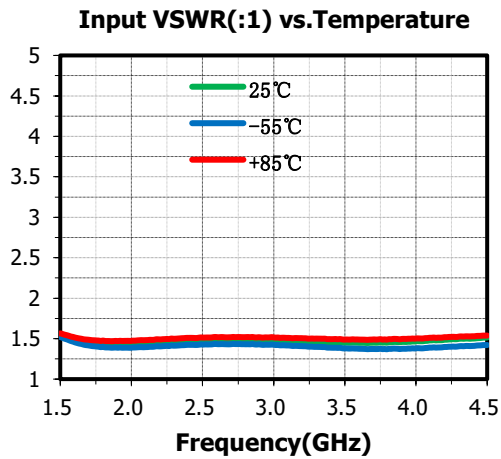
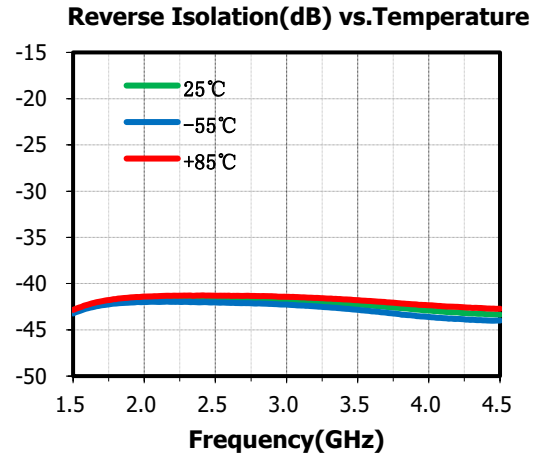
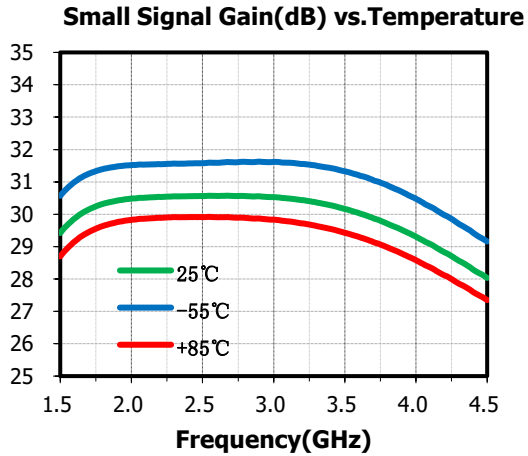
Maximum Input Power	+13dBm, CW, 1min	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C
Supply Voltage	7V		

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Typical Performance Curve

VD=+5V, IDQ=55mA

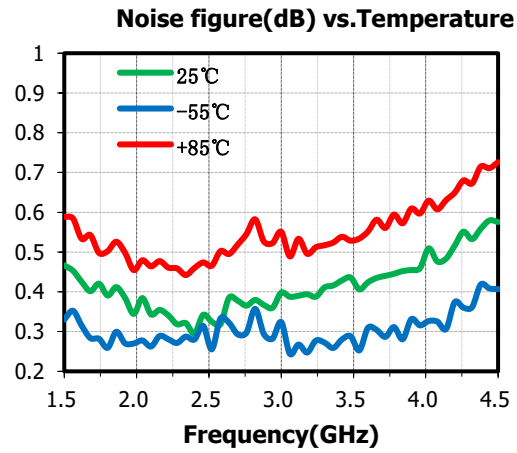
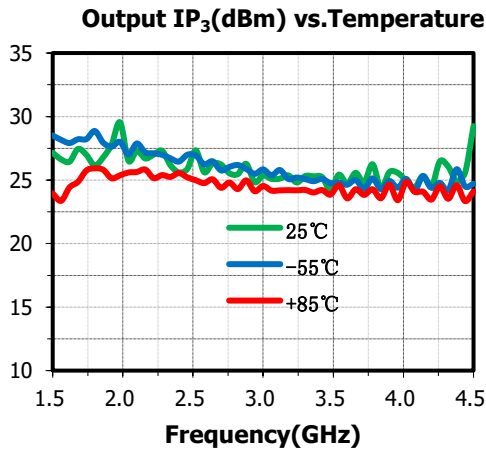


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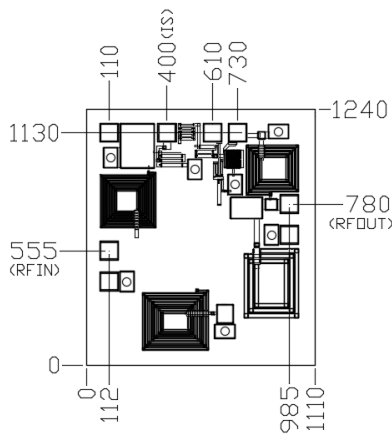


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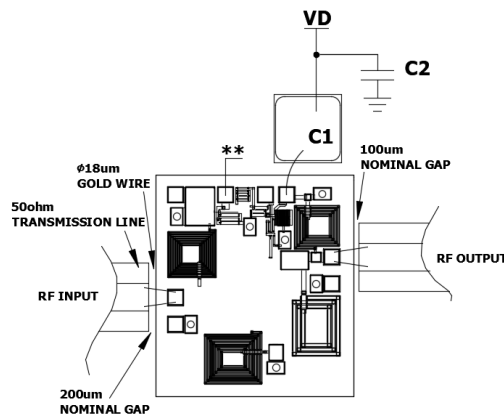
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Outline
(All dimensions in mm)



Assembly Diagram



Pads Size: 90*90um

** Connected to Ground IDQ ≈ 40mA, Floating IDQ = 55mA typ.

Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	100pF	SLC	ANY	—
C2	2.2uf	—	ANY	0603

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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