SAC3071

GaAs MMIC Low Noise Amplifier
2.2～8.5GHz

Rev 1.2

Features

- Frequency: 2.2 ~ 8.5GHz
- Gain: 27dB
- Noise Figure: 1dB
- Output P_{-1}dB: 10dBm
- Power Supply: +5V/55mA
- Die Size: 1.24mm×1.21mm×0.1mm

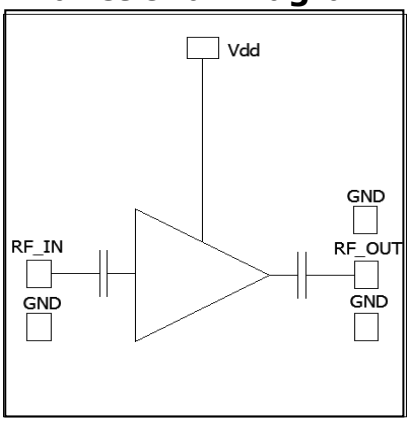
Typical Applications

- Wide Band Receiver
- High Density MCM
- EW

General Description

SAC3071 is a GaAs MMIC low noise amplifier die which operates from 2.2GHz to 8.5GHz. The amplifier can provide 27dB gain, 10dBm Output P_{-1}dB and 1dB 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℃, V_d=+5V, I_D=55mA, Z_0=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		2.2 ~ 8.5		GHz
Gain	25	27	—	dB
Gain Flatness	—	±1.5	—	dB
Input VSWR	—	1.8	2.2	:1
Output VSWR	—	1.6	2	:1
Noise Figure	—	1	1.3	dB
Output P_{-1}dB	7	10	—	dBm
Supply Current (I_D)	—	55*	65	mA

*** V_D=+4.5V, I_D=25mA typ., V_D=+5V, I_D=55mA typ., V_D=+6V, I_D=65mA typ.**

Absolute Maximum Ratings

Maximum Input Power	+13dBm	Operating Temperature	-55°C ~ +85°C
Channel Temperature	+150°C	Storage Temperature	-65°C ~ +150°C

RoHS

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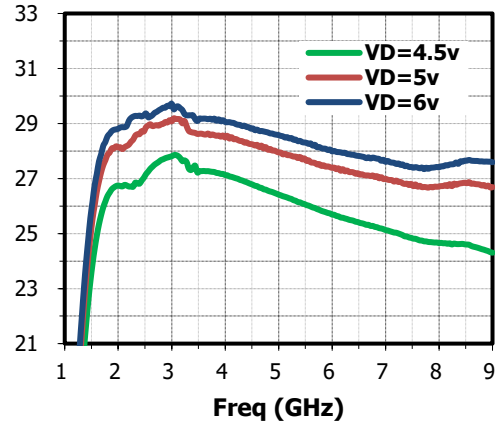
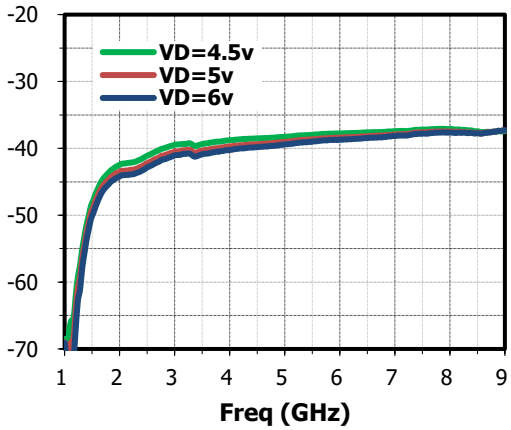
Typical Performance Curve

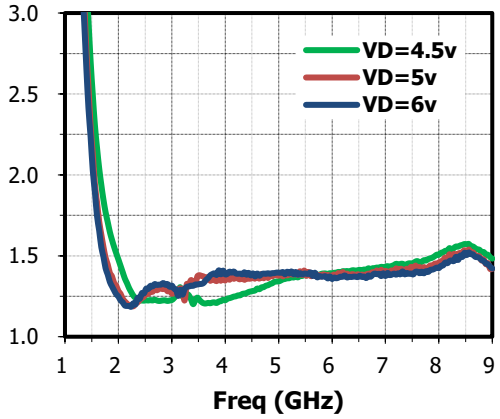
Small Signal Gain (dB) vs. Freq



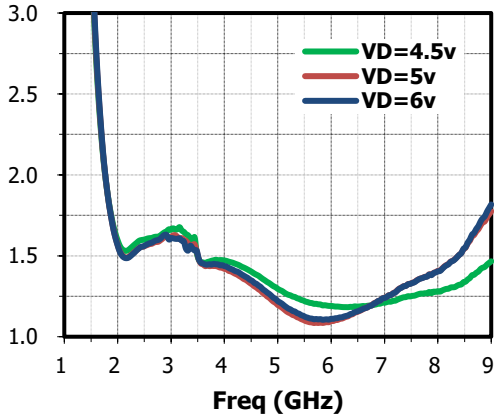
Reverse Isolation (dB) vs. Freq



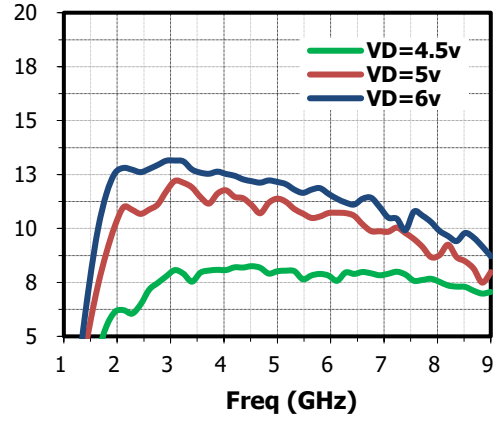
Input VSWR (:1) vs. Freq



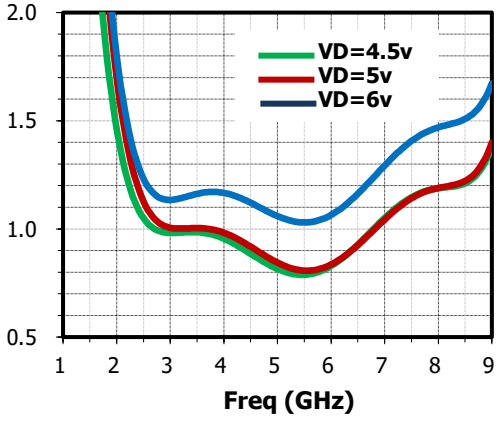
Output VSWR (:1) vs. Freq



OP$_{-1}$dB (dBm) vs. Freq



Noise figure (dB) vs. Freq



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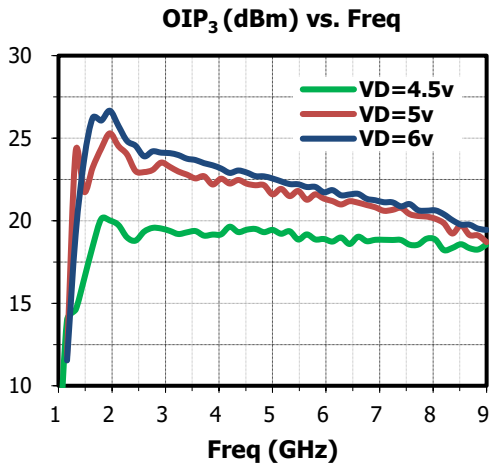
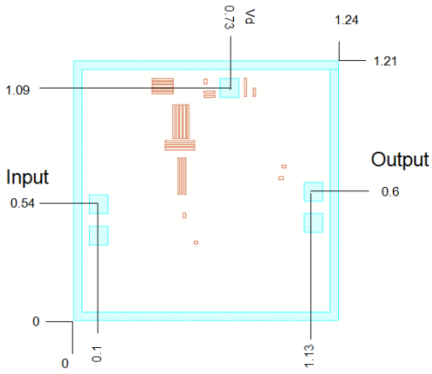
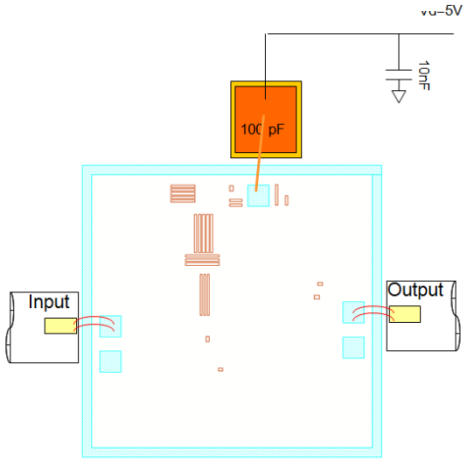


Outline
(All dimensions in mm)



Assembly Diagram



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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