# SAC3030

GaAs MMIC Low Noise Amplifier
0.7GHz~2.0GHz

Rev 2.1

## Features

- Frequency :0.7GHz~2.0GHz
- Gain:19.5dB
- Noise Figure:1.3dB
- Supply Voltage:+5V@30mA
- Die Size:1.1mm×1.24mm×0.1 mm

## Typical Applications

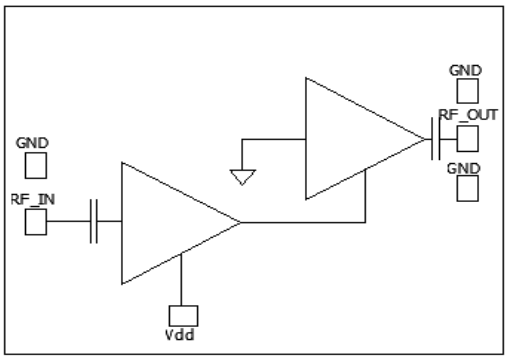
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and measurement
- Fiber Optics

## General Description

SAC3030 is a GaAs MMIC low noise amplifier die which operates between 0.7GHz~2.0GHz. The amplifier can provide 19.5dB gain, 16dBm Output$P_{-1}$dB and 1.3dB noise figure from a 30mA 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℃, $V_D$=+5V ,$I_D$=30mA, $Z_O$=50Ω )

| Parameter | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency Range | | 0.7~2.0 | | GHz |
| Gain | — | 19.5 | — | dB |
| Gain Flatness | — | 1 | — | dB |
| Reverse Isolation | — | -25 | — | dB |
| Input/Output VSWR | — | 1.4 | — | :1 |
| Noise Figure | — | 1.3 | — | dB |
| Output Power for 1 dB Compression (OP$_{-1}$dB) | — | 16 | — | dBm |
| Output Third Order Intercept (OIP$_3$) | — | 27 | — | dBm |
| Supply Current($I_D$) | — | 30 | — | mA |

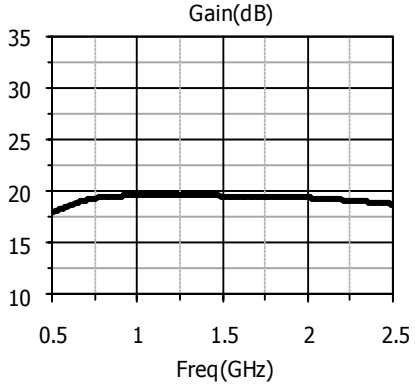
## Absolute Maximum Ratings

| | | | |
|---|---|---|---|
| Maximum Input Power | +18dBm | Operating Temperature | -55℃~+85℃ |
| Channel temperature | +150℃ | Storage Temperature | -65℃~+150℃ |

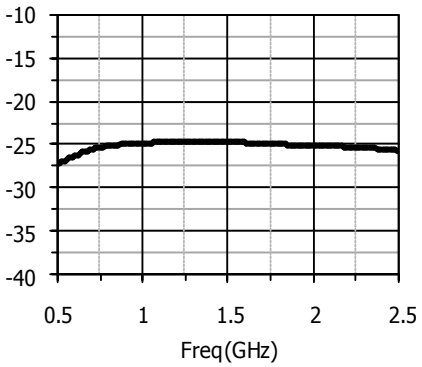
**SuperApex, LLC**
1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

## Typical Performance Curve

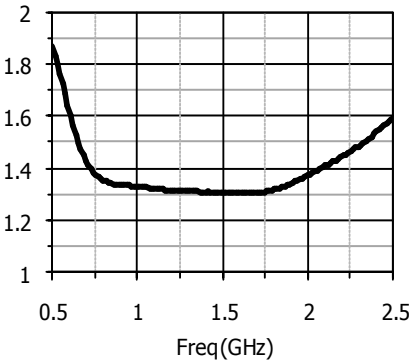
Gain(dB)



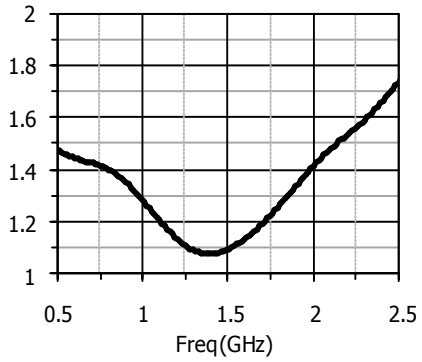

Reverse Isolation(dB)



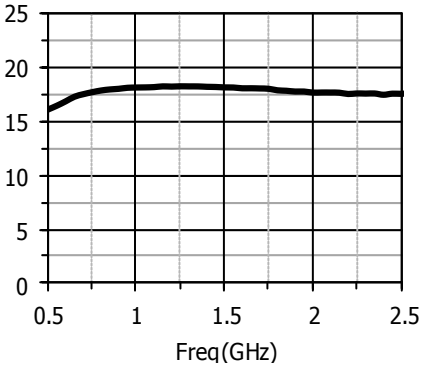

Input VSWR(:1)



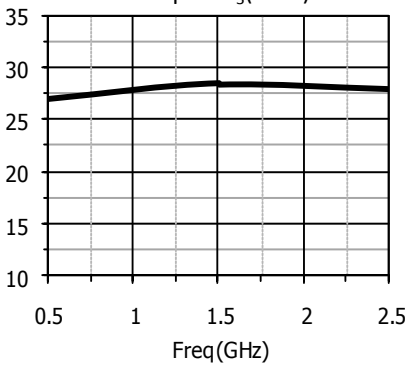

Output VSWR(:1)



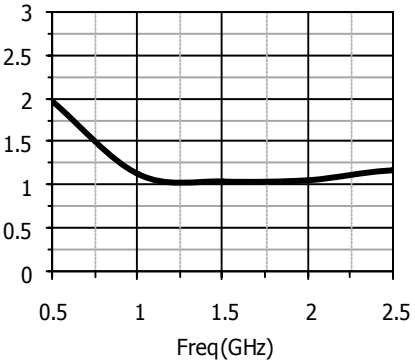

Output $P_{-1}$dB(dBm)




Output $IP_3$(dBm)

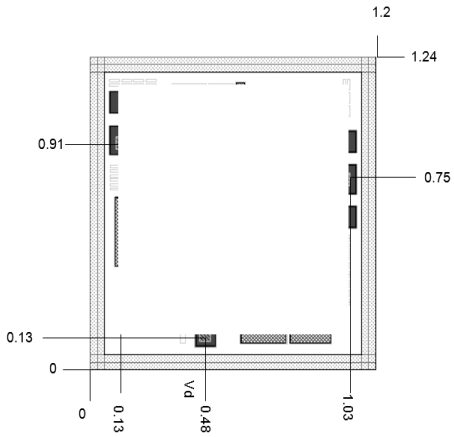



Noise Figure(dB)

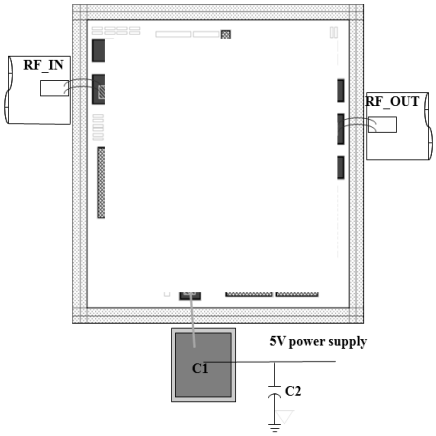



**SuperApex, LLC**
1580 S. Milwaukee Ave. Suite 405, Libertyville, IL 60048, USA
Tel: 1-847-505-8319, 1-847-573-9866
E-mail: sales@superapexco.com
Website: www.superapexco.com

## Die Outline
**(All dimensions in mm)**




## Assembly Diagram




## Components List

| Reference Des. | Value | Part Number | Manuf. | Size |
|---|---|---|---|---|
| C1 | 100pF | — | RADVISTA | CHIP |
| 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.