

# SAC3058

GaAs MMIC Low Noise Amplifier  
1~9GHz

Rev 1.2

## Features

- Frequency: 1~9GHz
- Gain: 19dB
- Noise Figure: 1.1dB
- Output P<sub>-1dB</sub>: 19dBm
- Die Size: 1.4mm×1.21mm×0.1mm

## Typical Applications

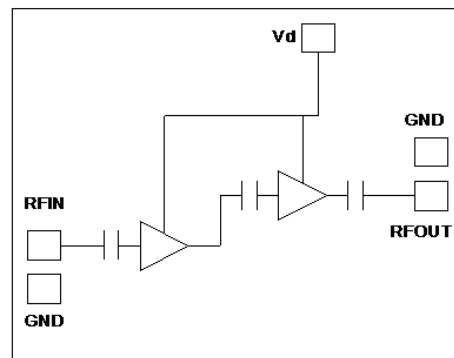
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

## General Description

SAC3058 is a GaAs MMIC low noise amplifier die which operates between 1~9GHz. The amplifier can provide 19dB gain, 19dBm Output P<sub>-1dB</sub> and 1.1dB noise figure from a 65mA 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<sub>A</sub>=25°C, V<sub>d</sub>=+5V, I<sub>D</sub>=65mA, Z<sub>0</sub>=50Ω)

| Parameter                       | Min. | Typ. | Max. | Units |
|---------------------------------|------|------|------|-------|
| Frequency Range                 | 1~9  |      |      | GHz   |
| Gain                            | 16.5 | 19   | 21   | dB    |
| Gain Flatness                   | —    | ±1.5 | —    | dB    |
| Reverse Isolation               | —    | -27  | -25  | dB    |
| Input VSWR                      | —    | 1.5  | 1.7  | :1    |
| Output VSWR                     | —    | 1.5  | 1.8  | :1    |
| Noise Figure                    | —    | 1.1  | 1.4  | dB    |
| Output IP <sub>3</sub>          | —    | 26   | —    | dBm   |
| Output P <sub>-1dB</sub>        | 16   | 19   | —    | dBm   |
| Supply Current(I <sub>D</sub> ) | —    | 65   | —    | mA    |

## Absolute Maximum Ratings

|                     |        |                       |              |
|---------------------|--------|-----------------------|--------------|
| Maximum Input Power | 15dBm  | Operating Temperature | -55°C~+85°C  |
| Channel Temperature | +150°C | Storage Temperature   | -65°C~+150°C |

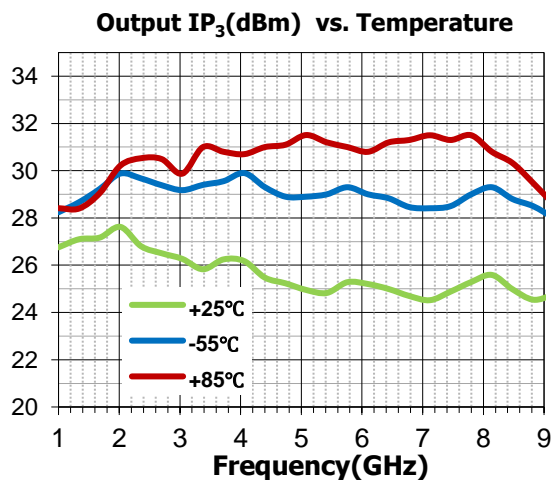
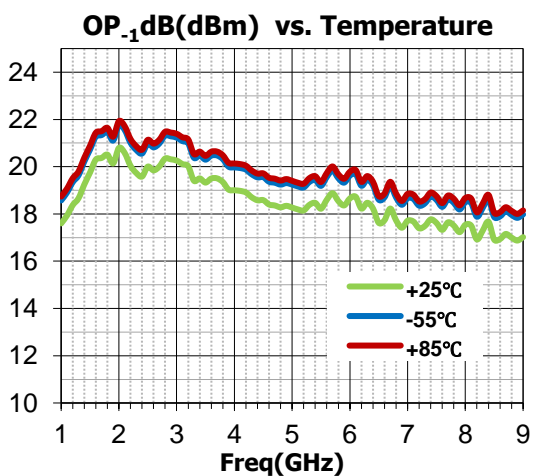
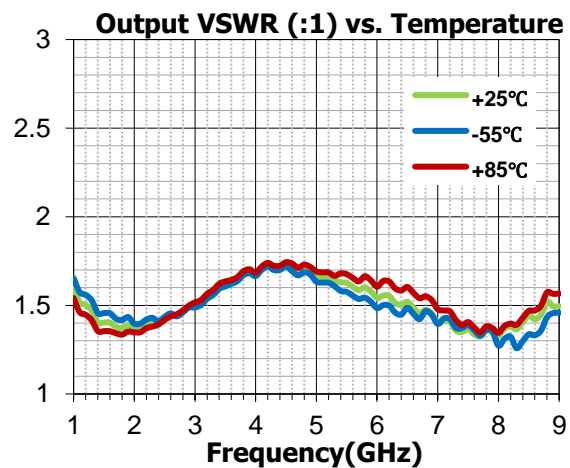
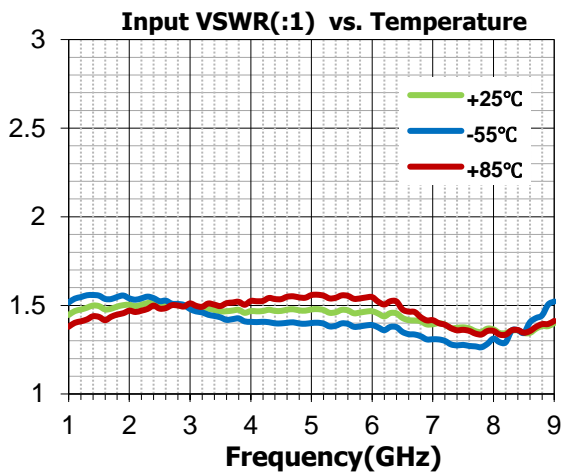
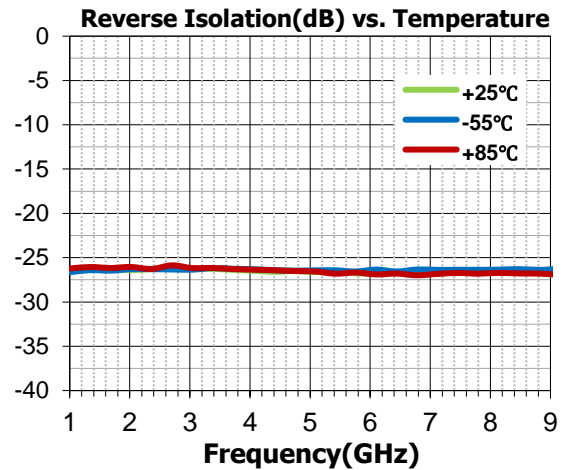
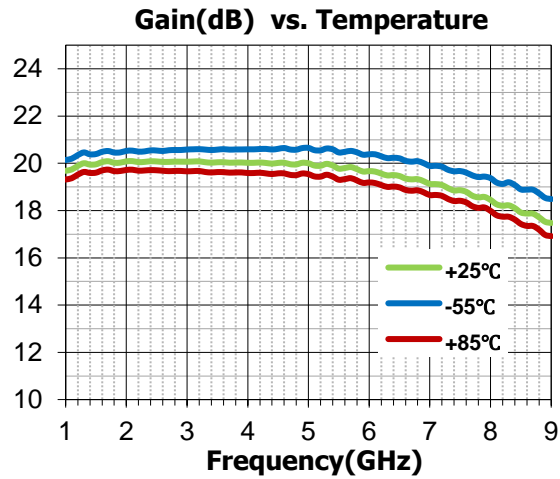
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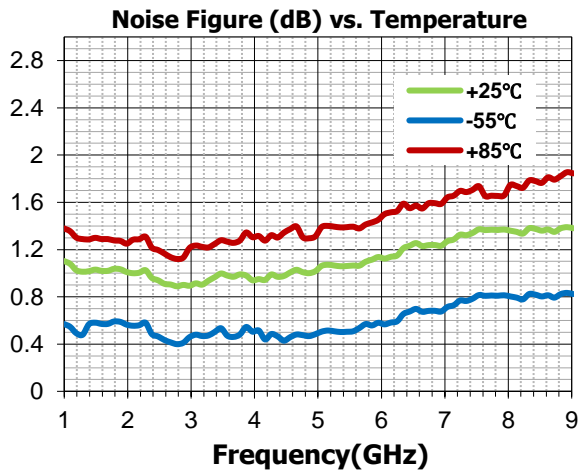
## Typical Performance Curve



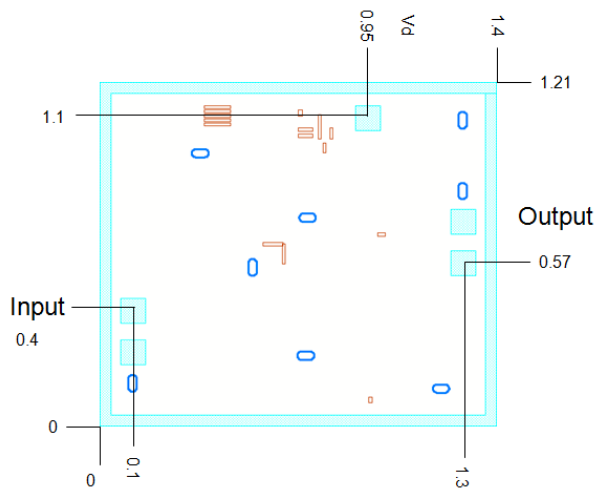
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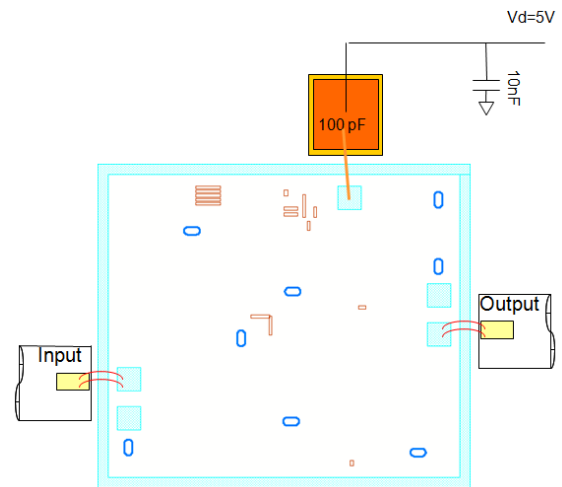
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### Outline (All dimensions in mm)



### Assembly Diagram



### Attention:

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