

Features

- Frequency: 0.4~0.6GHz
- Gain: 35.5dB
- Noise Figure: 0.5dB
- Power Supply: 5V/80mA
- Die Size: 1.3mm×1.21mm×0.1mm

Typical Applications

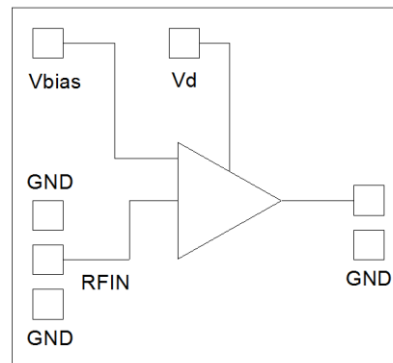
- Wide Band Receiver
- High Density MCM
- EW

General Description

SAC3059 is a GaAs MMIC low noise amplifier die which operates between 0.4~0.6GHz. The amplifier can provide 35.5dB gain, 15dBm Output P₁dB and 0.5dB noise figure from a 80mA 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



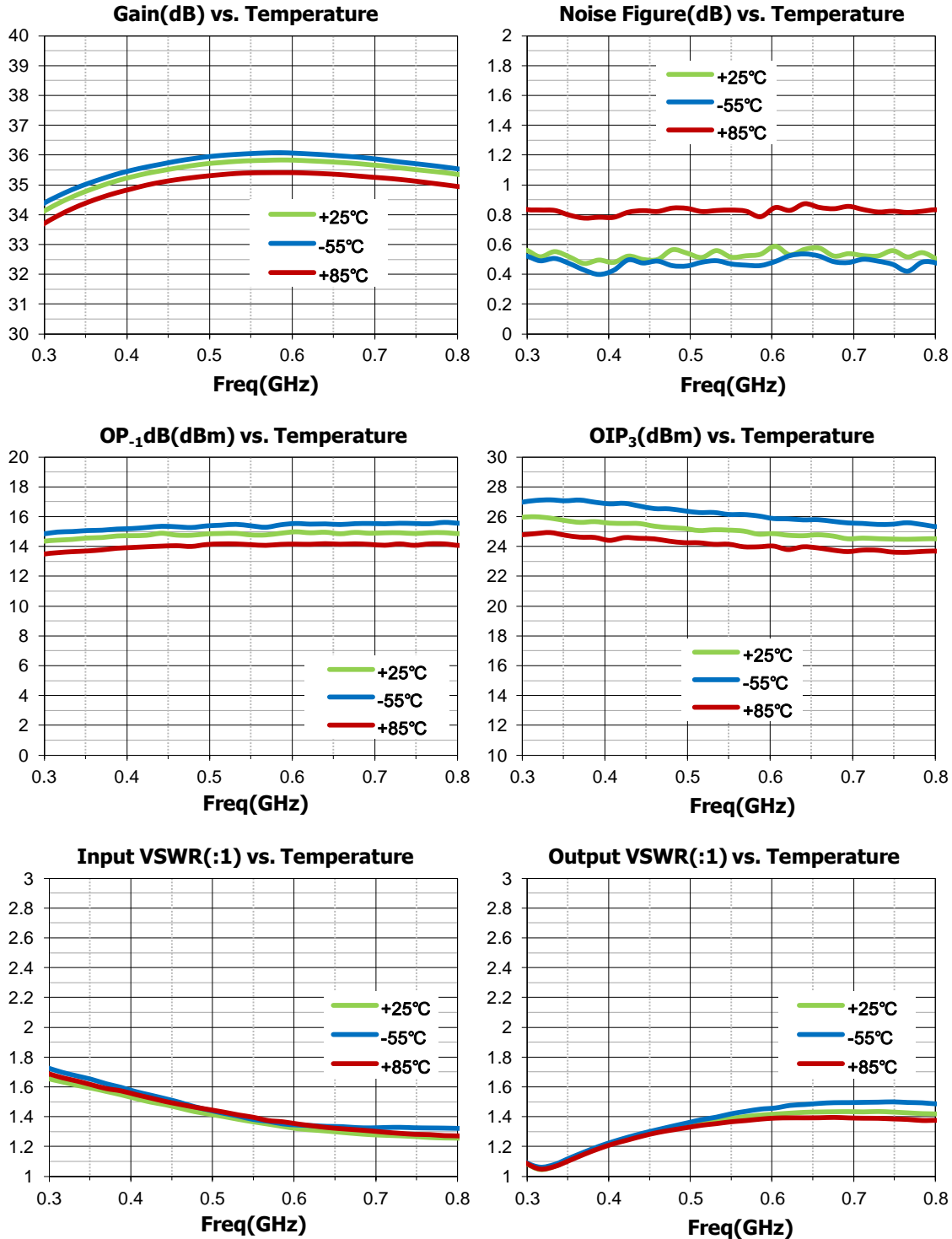
Electrical Performance (T_A=25°C, V_d=+5V, I_D=80mA, Z₀=50Ω)

Parameter	Min.	Typ.	Max.	Units
Frequency Range	0.4 ~ 0.6			GHz
Gain	—	35.5	—	dB
Gain Flatness	—	±0.5	—	dB
Reverse Isolation	—	-48	—	dB
Input VSWR	—	1.4	1.8	:1
Output VSWR	—	1.3	1.8	:1
Noise Figure	—	0.5	0.75	dB
Output P ₁ dB	—	15	—	dBm
Supply Current(I _b)	—	80	100	mA

Absolute Maximum Ratings

Maximum Input Power	+15dBm	Operating Temperature	-40°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

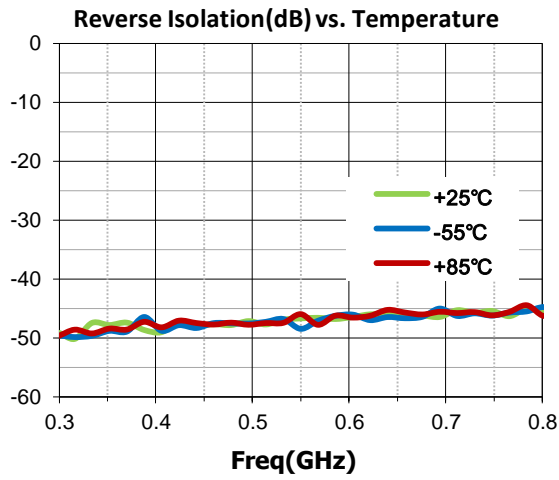
Typical Performance Curve



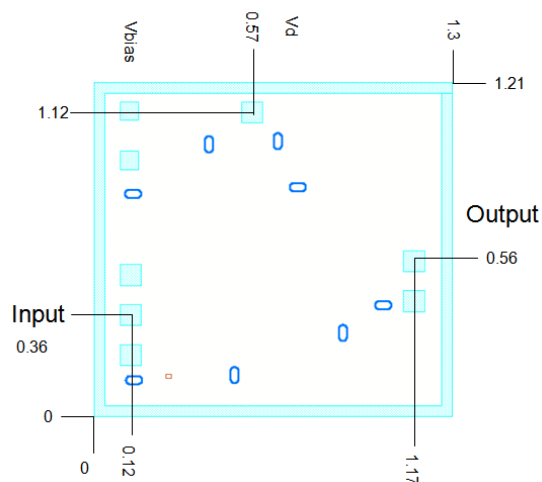
SAC3059

GaAs MMIC Low Noise Amplifier
0.4GHz~0.6GHz

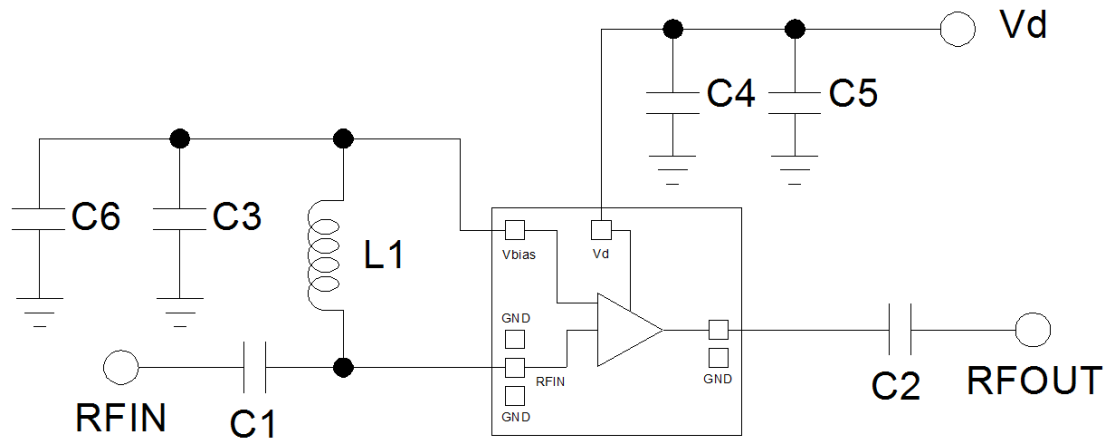
Rev 1.2



Outline (all dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.
C3, C4	300pF	SLC	ANY
C5,C6	10nF	GRM1857U1A103JA44	MURATA
L1	47nH	0603CS-47NXGLW	COILCRAFT
C1, C2,	47 pF	GRM1885C2A470FA01J	MURATA

Attention:

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