

Features

- Frequency: 15~37GHz
- Gain: 22dB
- Output P_{-1dB}: 8dBm@28GHz
- Supply Voltage: +5V@44mA
- Die Size: 1.0mm×1.7mm×0.1mm

Typical Applications

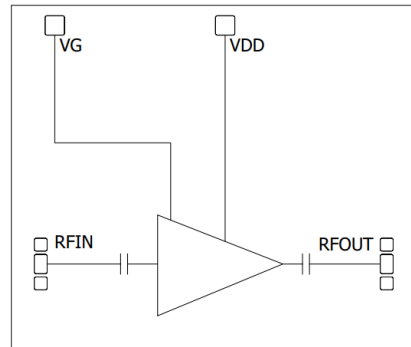
- Microwave radio including point to point communication
- Telecommunication
- Test instrumentation
- SatCom

General Description

SAC4016 is a GaAs MMIC Low Noise Amplifier die which operates between 15GHz~37GHz. The amplifier can provide 22dB gain, 7dBm OutputP_{-1dB}, 1.8dB noise figure from a 44mA 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=44mA, Z₀=50Ω)

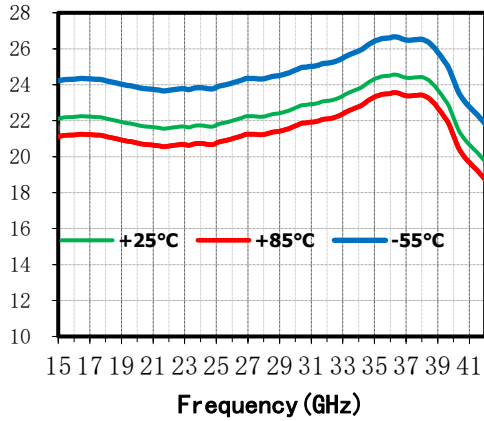
Parameter	Min.	Typ.	Max.	Units
Frequency Range	15~37			GHz
Gain	19	22	24	dB
Gain Flatness	—	±1	±2	dB
Reverse Isolation	—	50	—	dB
Inpu VSWR	—	1.8	2.5	:1
Output VSWR	—	1.5	2.1	:1
Noise Figure	—	1.8	2.5	dB
Output Power for 1 dB Compression (OP _{-1dB})	7	8	—	dBm
Supply Current (I _b)	—	44	—	mA

Absolute Maximum Ratings

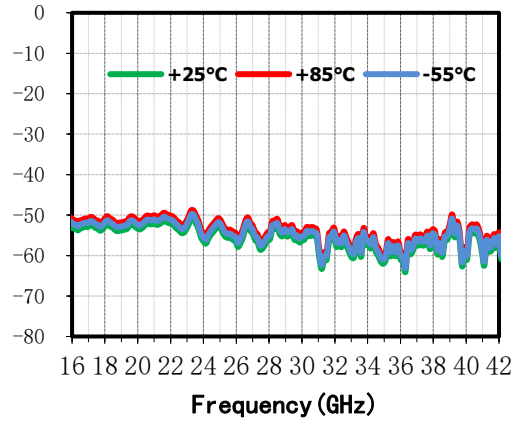
Maximum Input Power	+15dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

Typical Performance Curve

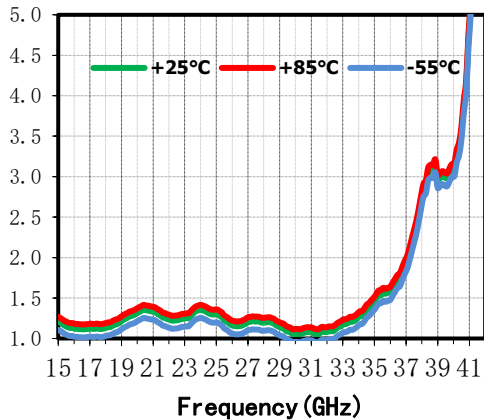
Small Sigal Gain(dB) vs.Temperature



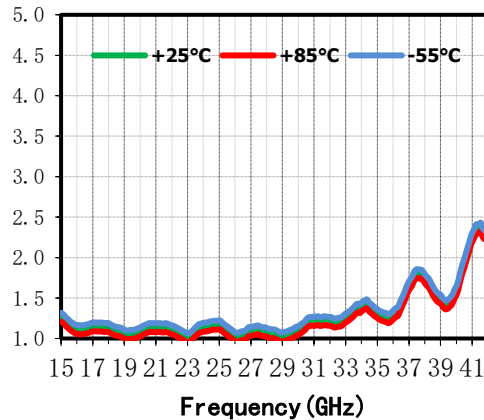
Isolation(dB) vs.Temperature



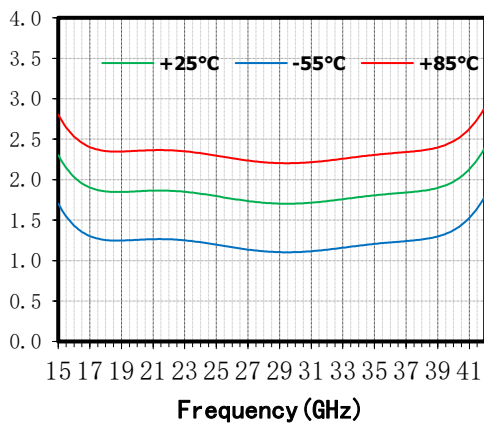
Input VSWR(:1) vs.Temperature



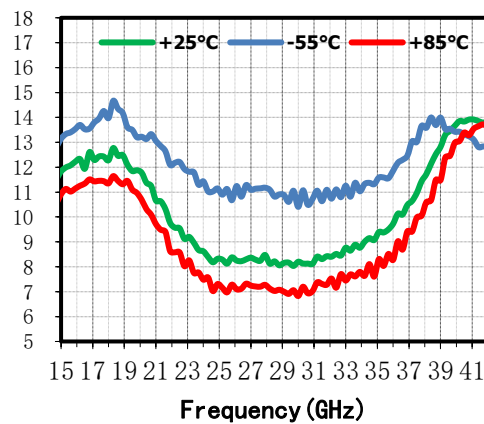
Output VSWR(:1) vs.Temperature



Noise Figure(dB) vs.Frequency



OP-1dB (dBm) vs. Temperature

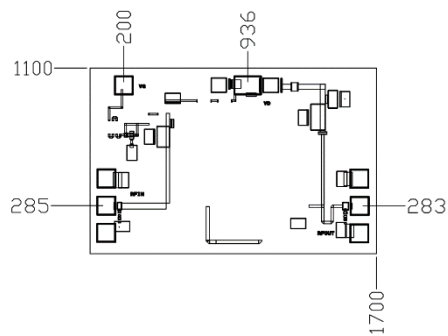


SAC4016

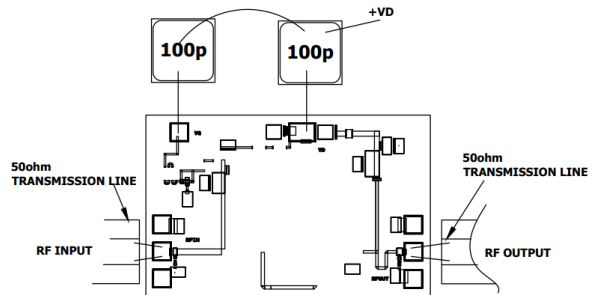
GaAs MMIC Low Noise Amplifier
15~37GHz

Rev 1.0

Die Outline
(All dimensions in μm)



Assembly Diagram



Attention:

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

1. Esd is level 0 (<250V) at HBM;