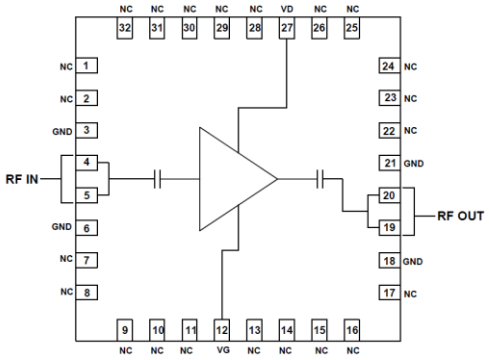
5 – 6 GHz Gain block Amplifier

Features

- **Frequency Range : 5 – 6GHz**
- **14 dB small signal gain**
- **17 dBm output P1dB**
- **Input Return Loss :Typ 15 dB**
- **Output Return Loss : Typ 15 dB**
- **Dual bias operation**
- **No external matching required**
- **DC decoupled input and output**
- **32 Lead 5 x 5 mm QFN Package**

Functional Diagram



Typical Applications

- **RADAR**
- **Military & space**
- **LMDS, VSAT**

Description

The ASL4026P5 is a C-band Gain block amplifier with 17dBm output power. The Gain Block operates in 5–6GHz frequency range. The Gain Block features 14 dB of gain with input and output return losses of 15 dB and 15 dB respectively. The GB has a high P1dB of 17dBm. This feature enables it to be used in the applications requiring efficiency along with linearity. The Gain Block operates with dual bias supply voltage.

Absolute Maximum Ratings (1)

Parameter	Absolute Maximum	Units
Drain bias voltage (Vd)	+9	volts
Drain current (Idq)	120	mA
RF input power (RFin at Vd=9V)	23	dBm
Operating temperature	-50 to +85	^{o}C
Storage Temperature	-65 to +150	^{o}C

1. Operation beyond these limits may cause permanent damage to the component

Electrical Specifications [1] @ T_A = 25 °C, V_D = 5V, V_g = -0.9V, Zo =50 Ω

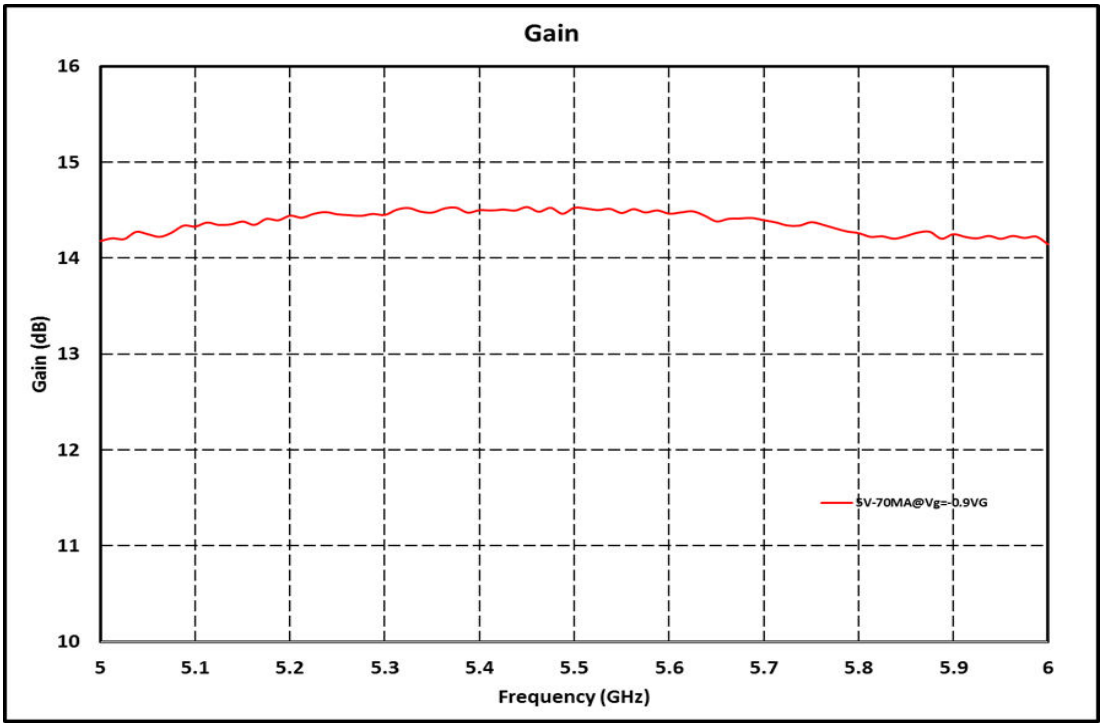
Parameter	Typ.	Units
Frequency Range	5 – 6	GHz
Small signal Gain	14	dB
Gain Flatness	+/-0.5	dB
Output Power (P1 dB)	17	dBm
Input Return Loss	15	dB
Output Return Loss	15	dB
Supply Current(Idq)	70	mA

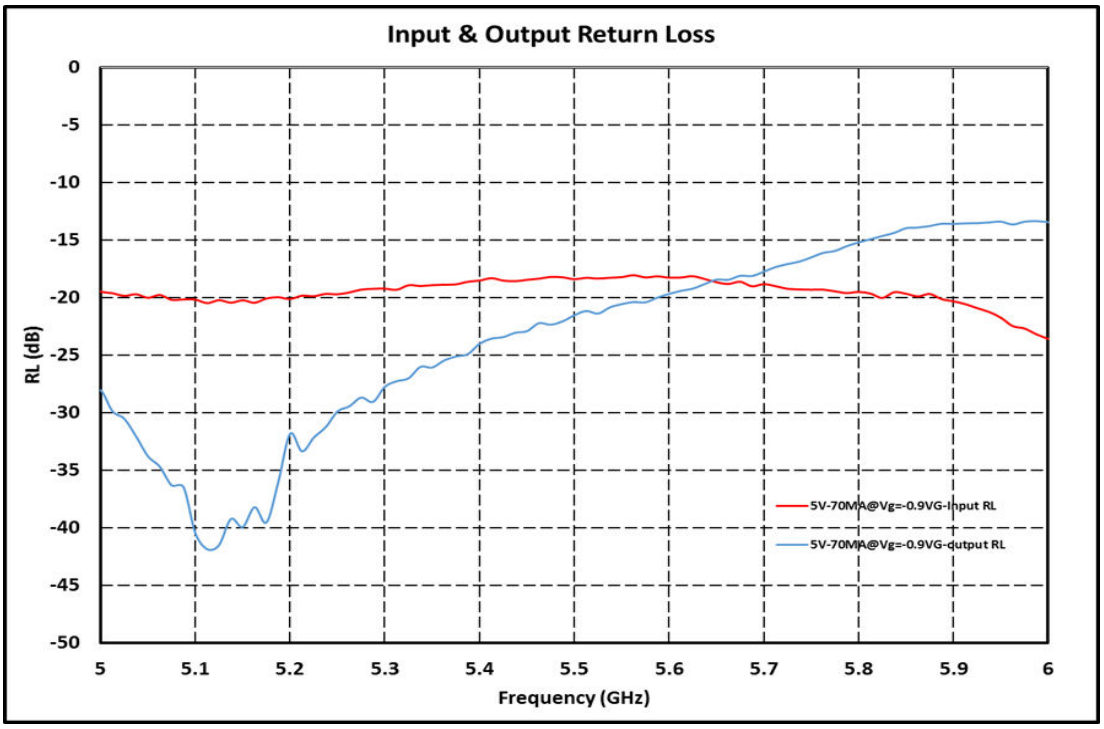
Note:

1. Electrical specifications as measured in test fixture.

Test fixture data

V_d = 5V, V_g = -0.9V, Total Crurent =70ma, T_A = 25 °C





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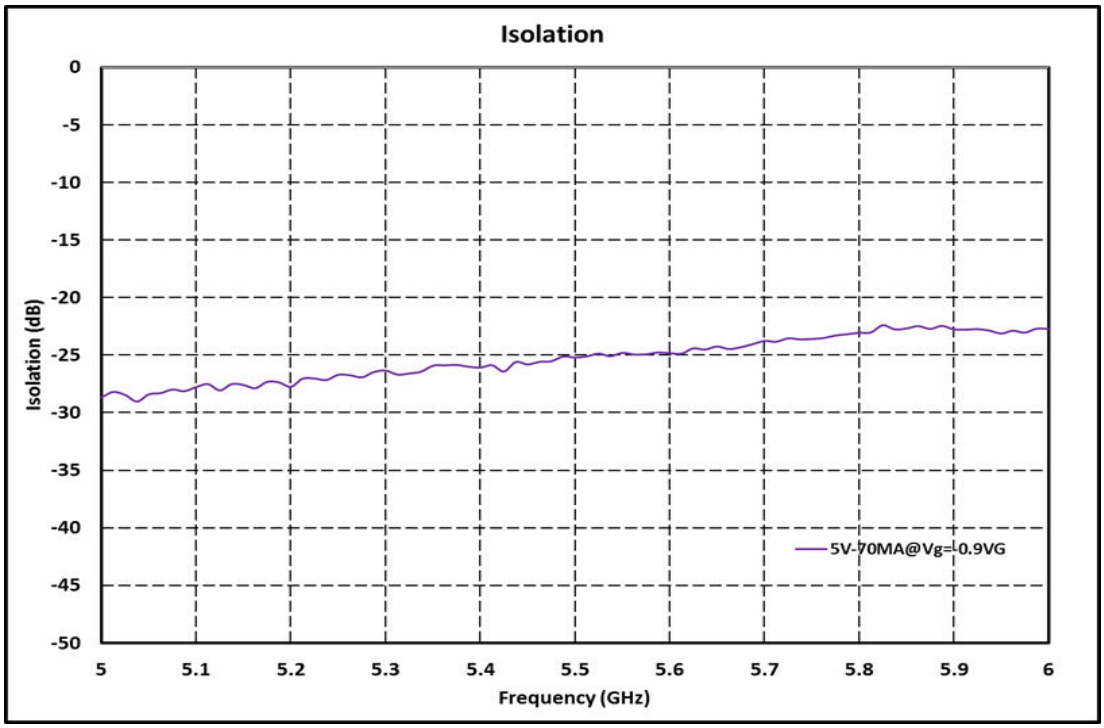
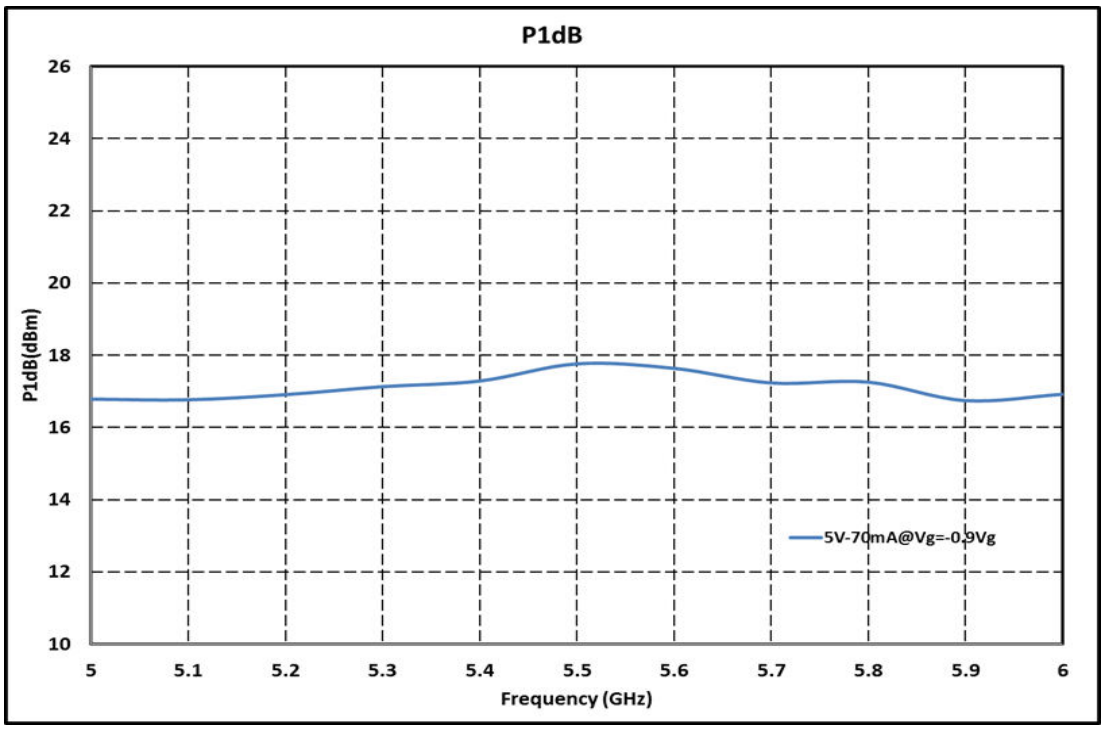
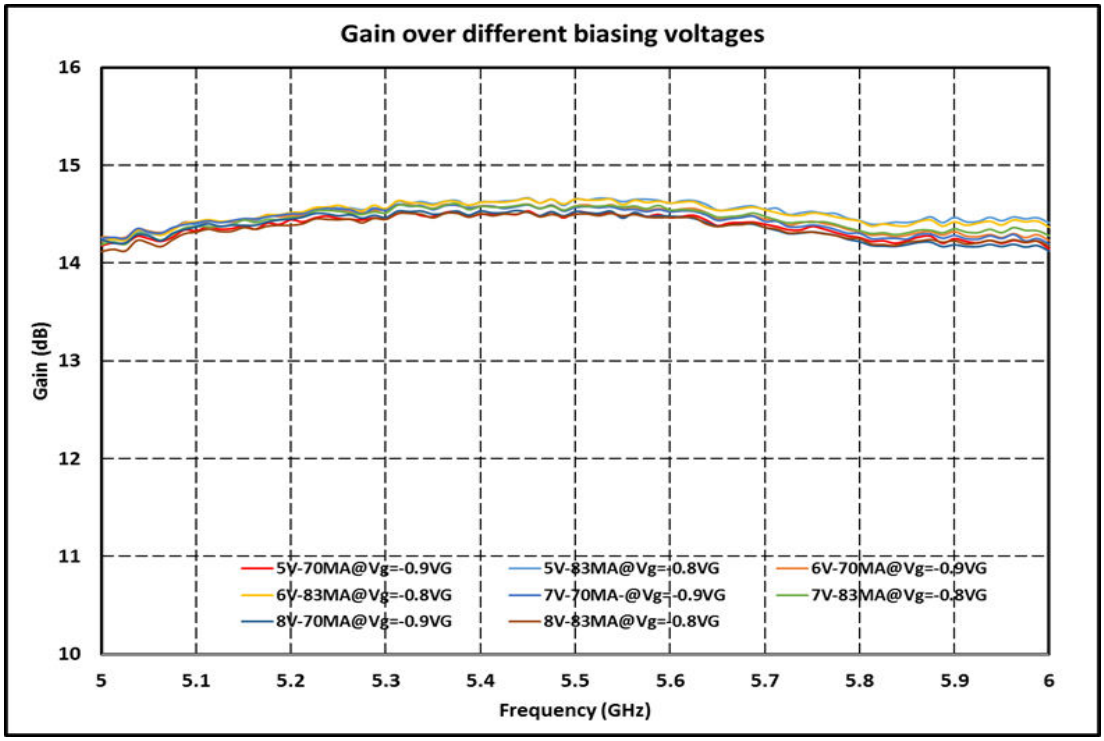
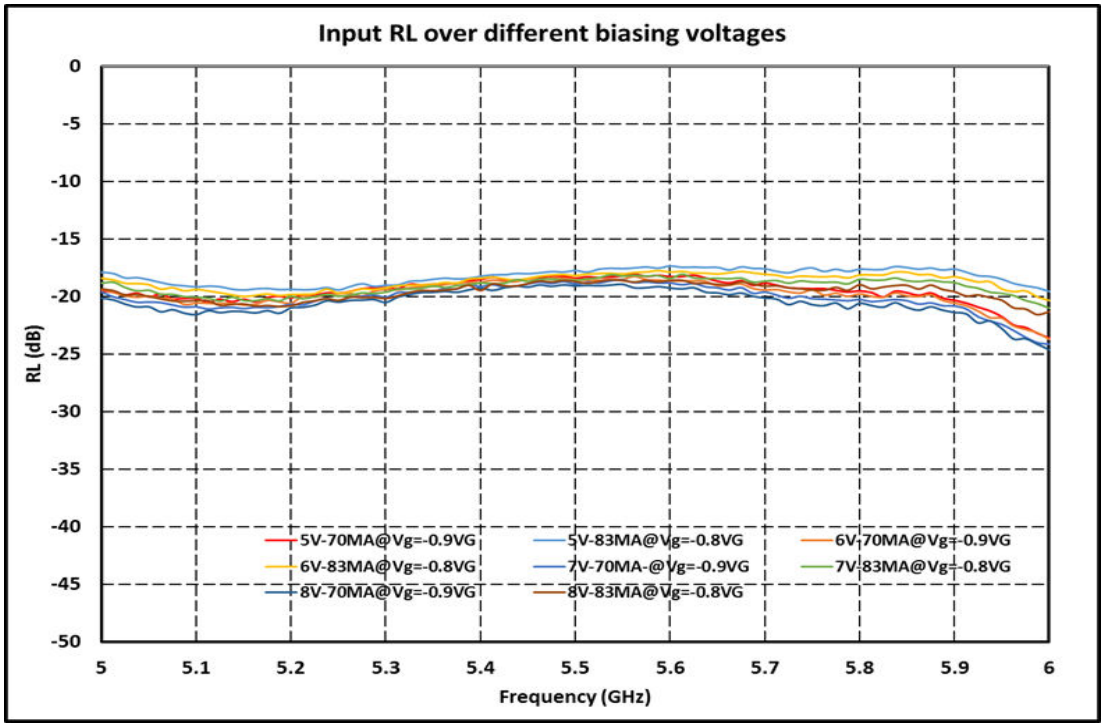




Test fixture data, T_A = 25 °C

At Different Biasing Conditions





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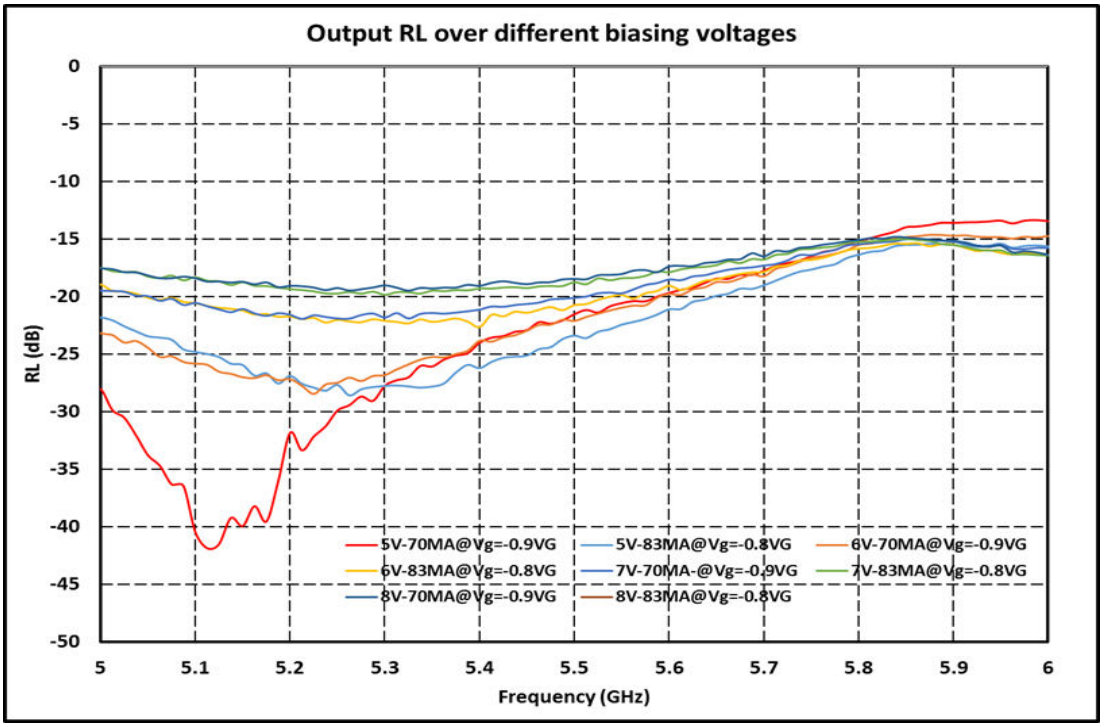
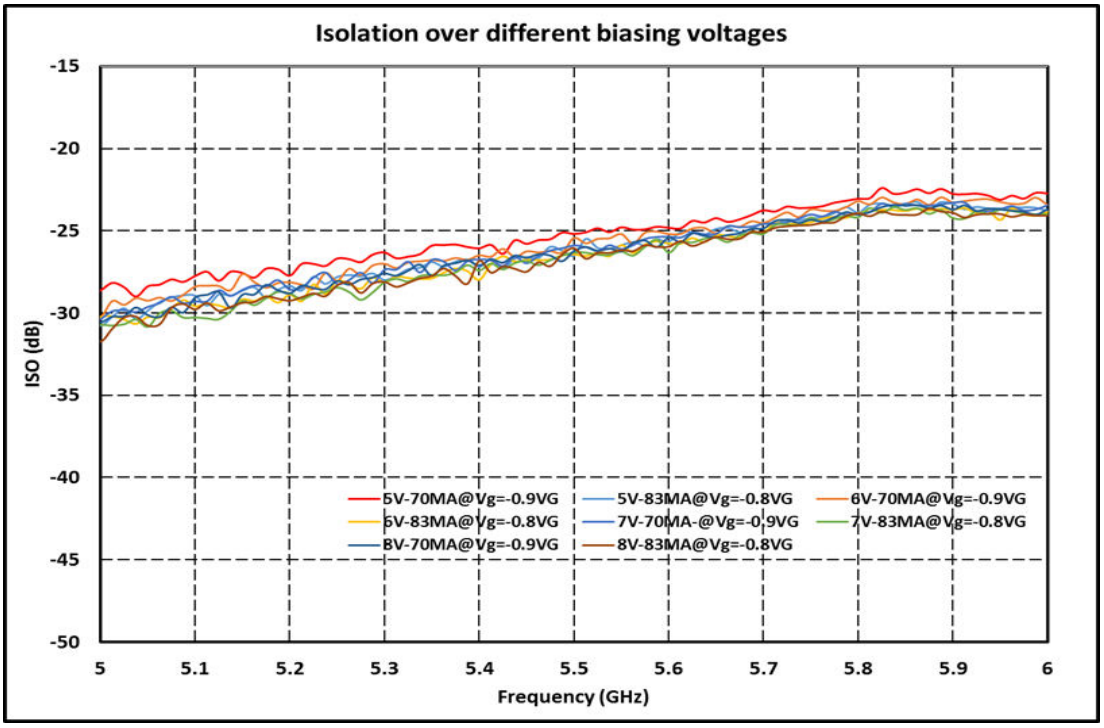
At Different Biasing Conditions





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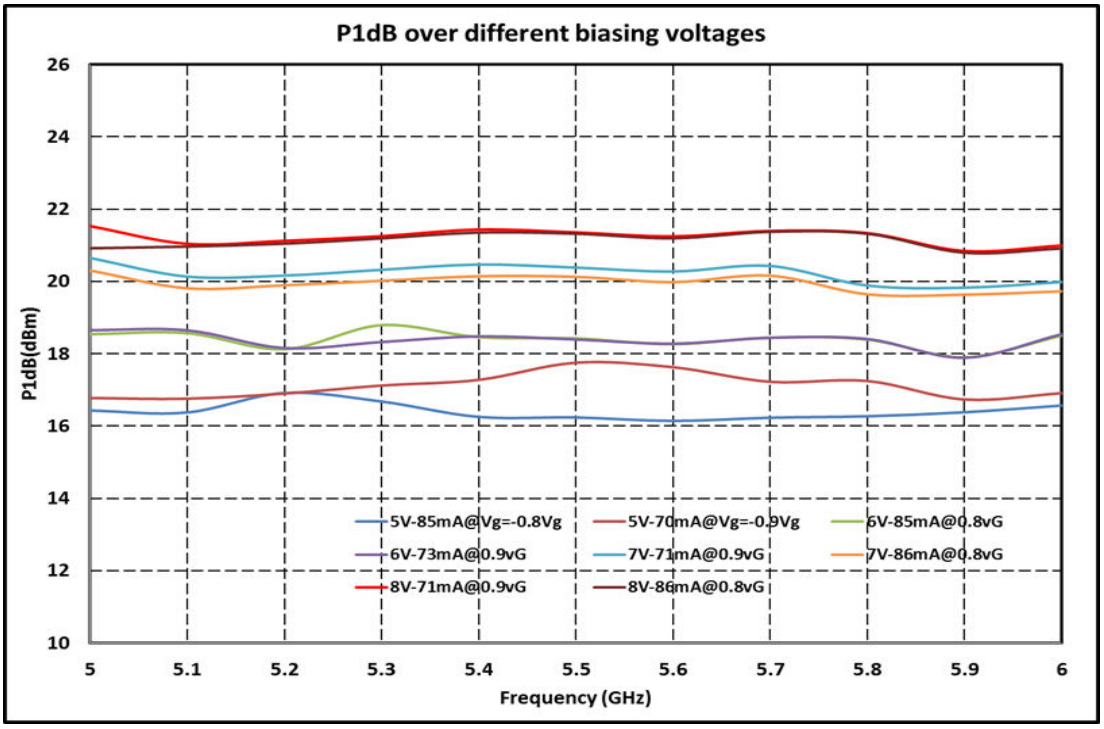
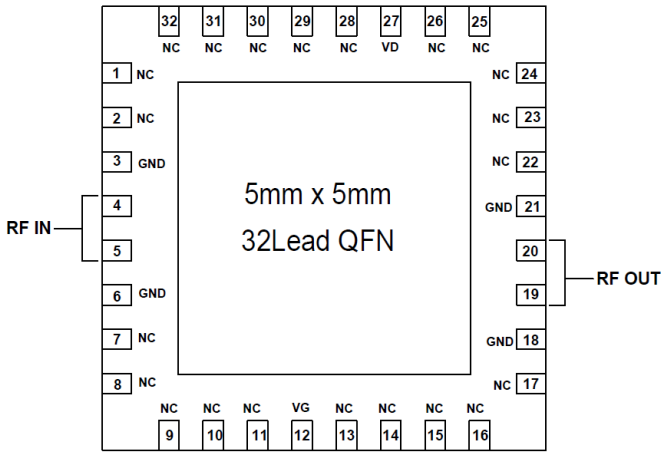


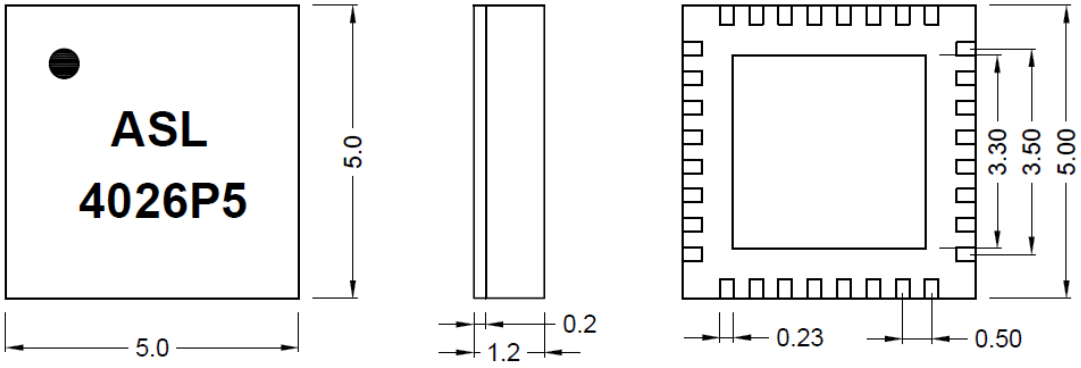
Pin Configuration



Pin Descriptions

PIN	Function	Description
27	VD	DC SUPPLY Voltage
12	VG	DC SUPPLY Voltage
19,20	RF OUT	RF Output
4,5	RF IN	RF Input
1,2,3,6,7,8,9,10,11,13,14,15,16,17,18 21,22,23,24,25,26,28,29,30,31,32	NC	No Connection

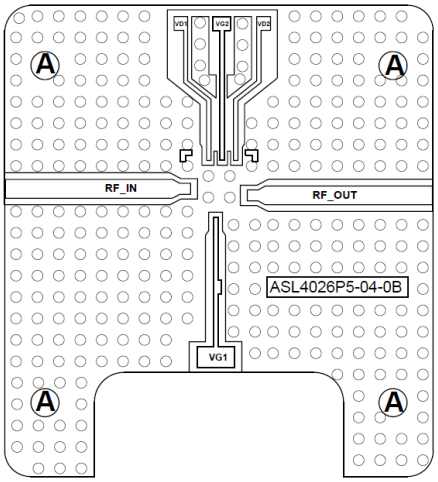
Package Outline Drawing



TOP VIEW BOTTOM VIEW

Note: All dimensions are in Millimeters.

Recommended Assembly Diagram



Note:

1. Circuit board material: RT Duroid 5880
2. Input\Output signal lines have 50Ω impedance
3. 0.1μf Capacitor off chip components are required at VG &VD biasing points.

GaAs MMIC devices are susceptible to Electrostatic discharge. Proper precautions should be observed during handling, assembly & testing

All information and Specifications are subject to change without prior notice