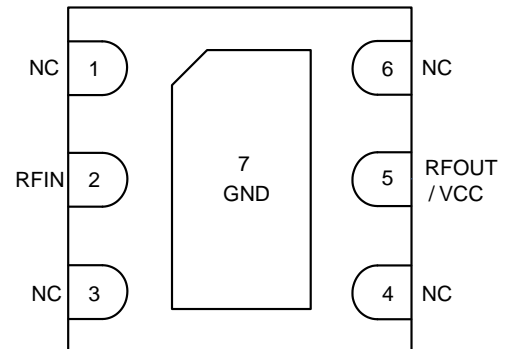


Features

- Operating Frequency DC to 4GHz
- Flat 32 dB gain (DC to 2.6 GHz at 1 dB flatness)
- 14dBm P1dB at 2.0GHz
- Device Current 20mA@VCC=5V
- Single Power Supply
- Internally matched to 50Ω
- Integrated Active Bias Circuit
- Industry Standard DFN 2mmx2mm-6L Package
- ESD protection all ports above 1000V HBM



Functional Block Diagram

Applications

- ISM
- LNB IF amplifiers
- GPS / COMPASS
- General Purpose
- Signal amplifier for high-speed broadband digital transmission system

Product Description

The YG403316W is a low current, high performance InGaP/GaAs HBT MMIC gain block amplifier with an active bias network. The active bias network provides stable current over temperature and process variations. The YG403316W is internally matched to 50Ω. It is assembled in an industry standard DFN 2mmx2mm-6L package. It is internally integrated with ESD protection unit.

Pin Description

Pin No.	Symbol	Description
2	RFIN	RF input
5	RFOUT/VCC	RF output and bias
7	GND	Ground connected
1, 3, 4, 6	NC	No Connection

Absolute Maximum Ratings

Parameter	Rating	Unit
Input RF Power	+0	dBm
Supply Voltage	-0.5 to +6.0	V
Device Current	100	mA
Operating Ambient Temperature	-40 to +85	°C
Storage Temperature	-40 to +150	°C



Caution!

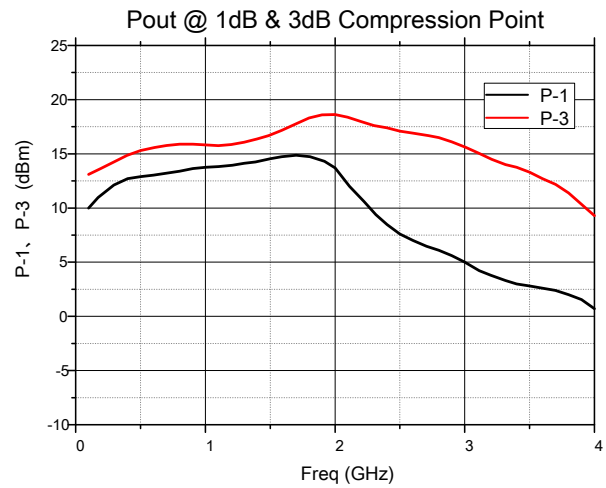
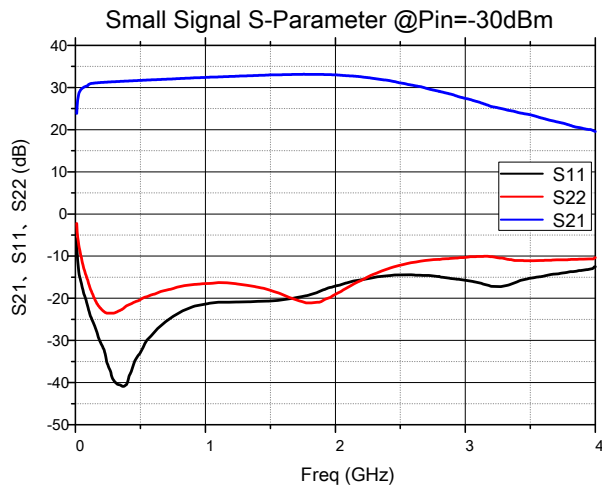
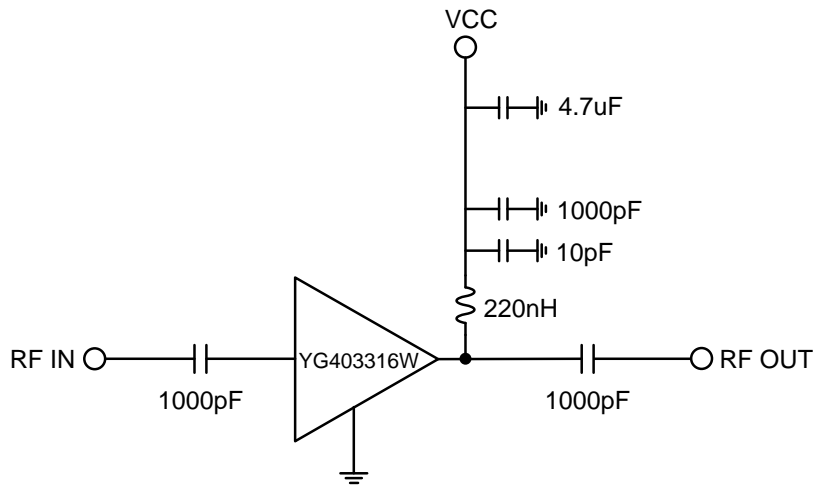
Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability.

Electrical Specifications

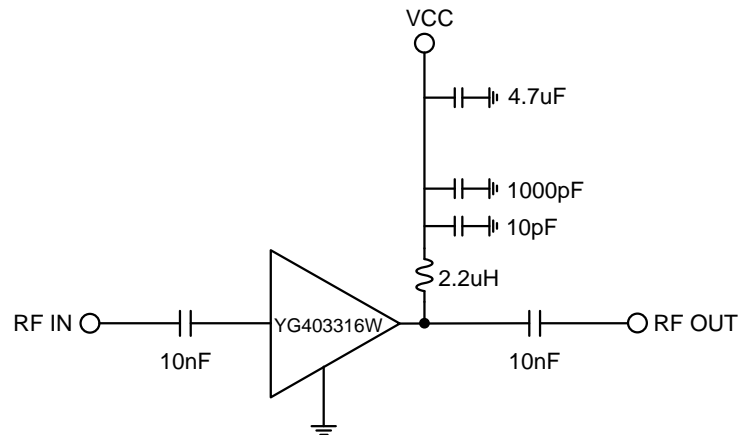
Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Small Signal Gain		33		dB	2000MHz
		32.3		dB	900MHz
		31.6		dB	433MHz
P1dB Output Power		13.7		dBm	2000MHz
		13.8		dBm	900MHz
		12.7		dBm	433MHz
Input Return Loss		17.1		dB	2000MHz
		22		dB	900MHz
		37.2		dB	433MHz
Noise Figure		4.5		dB	2000MHz
Supply Voltage	3	5	6	V	
Device Current		20		mA	VCC=5V
		12.5		mA	VCC=4.2V
		7		mA	VCC=3.5V

Typical Performance

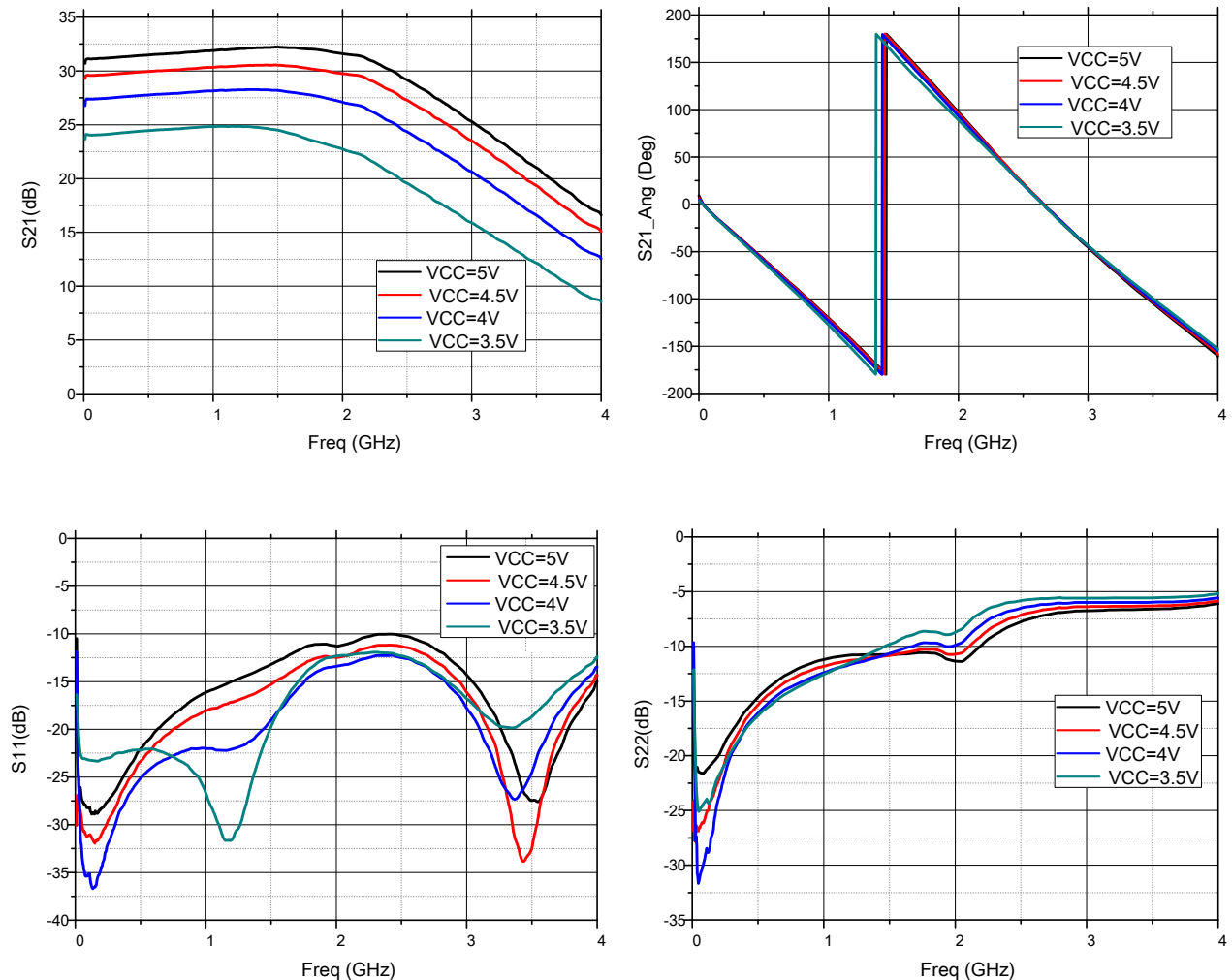
10MHz~4000MHz Application:



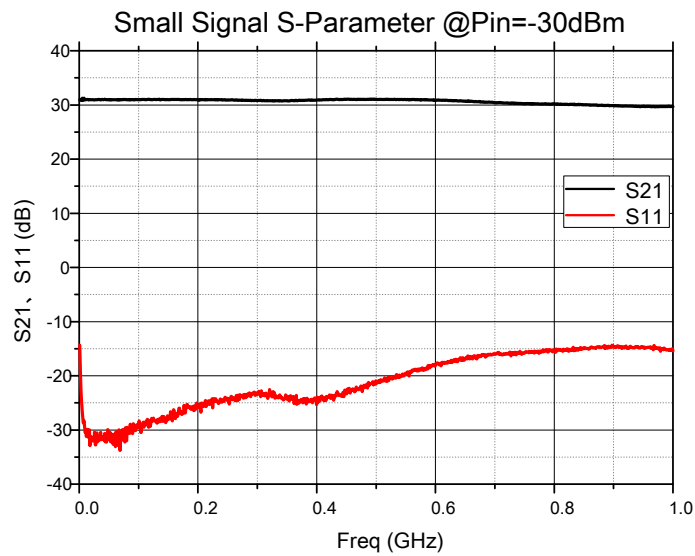
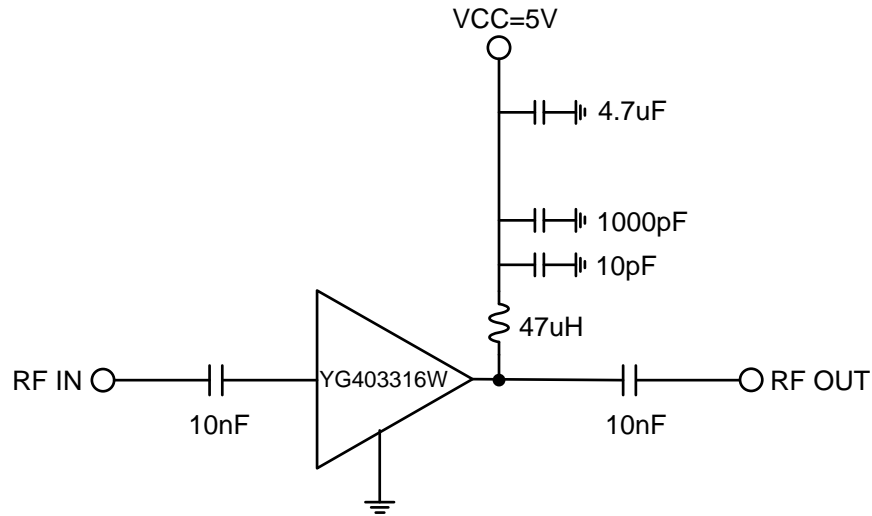
10MHz~2000MHz Application:



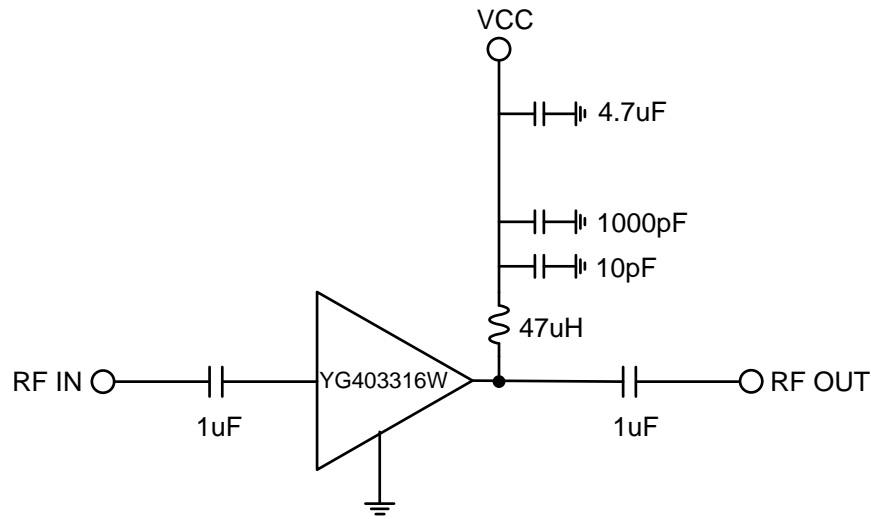
Small Signal S-Parameter v.s. VCC @Pin=-30dBm



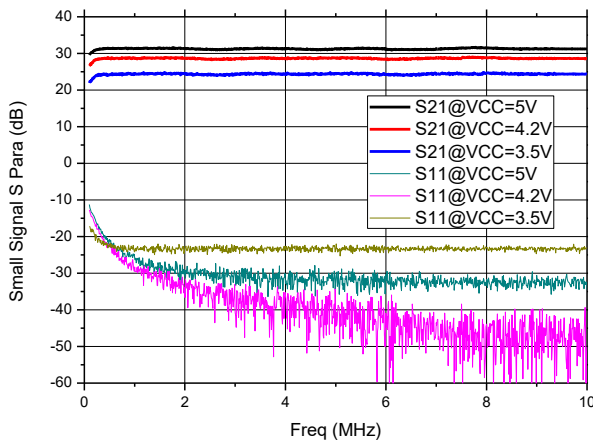
1MHz~500MHz Application:



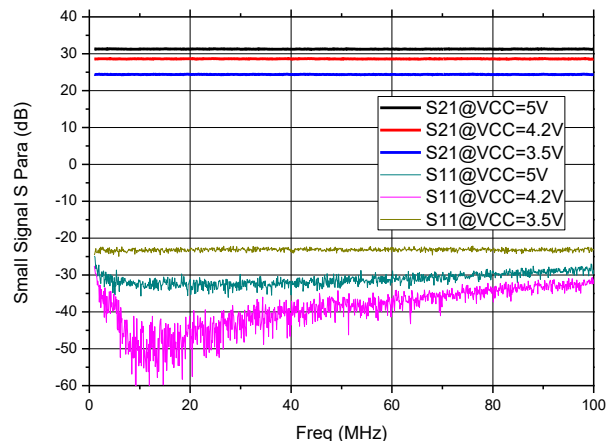
DC~100MHz Application:



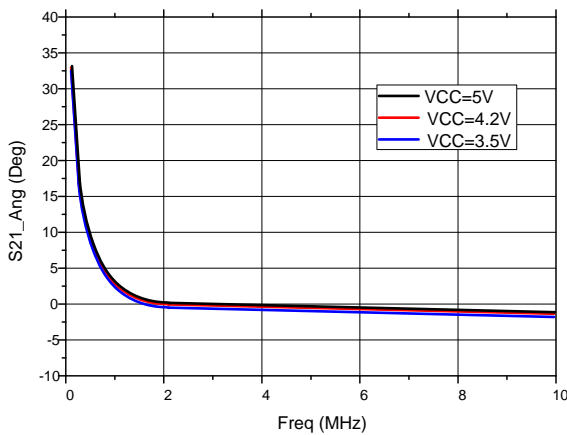
100kHz-10MHz Small Signal S Para v.s VCC



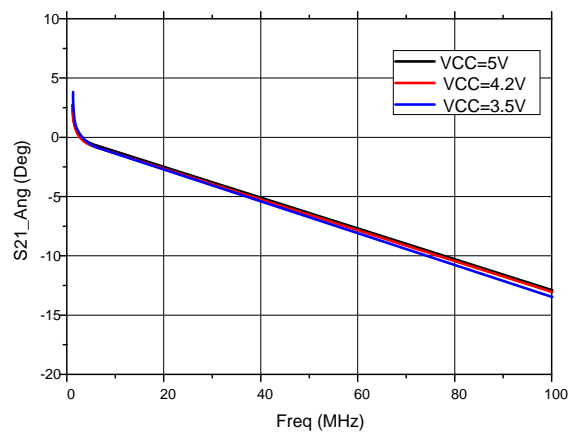
1MHz-100MHz Small Signal S Para v.s VCC



100kHz-10MHz S21_Ang v.s VCC

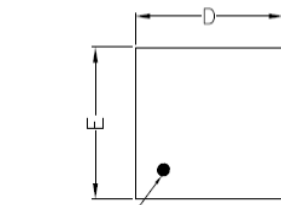


1MHz-100MHz S21_Ang v.s VCC

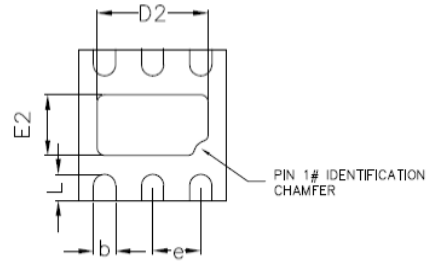


Package Diagram

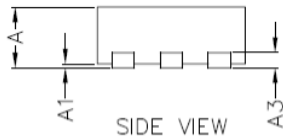
(Units: millimeters)



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSIONS(MM)			
PKG.	w: VERY VERY THIN		
REF.	MIN.	NOM.	MAX.
A	0.70	0.75	0.80
A1	0.00	-	0.05
A3	0.2 REF.		
D	1.95	2.00	2.05
F	1.95	2.00	2.05
D2	1.35	1.50	1.60
E2	0.65	0.80	0.90
L	0.25	0.35	0.45
b	0.25	0.30	0.35
e	0.65 Bsc		