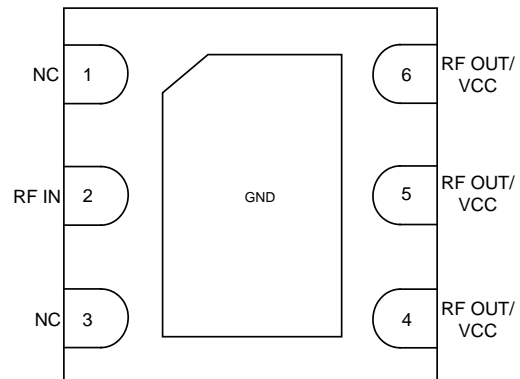


Features

- Operating Frequency 50MHz to 4GHz
- 17.3dB Gain at 2.0GHz
- 22.2dBm P1dB at 2.0GHz
- 32.3dBm OIP3 at 2.0GHz
- Single Power Supply
- Integrated Active Bias Circuit
- Small Size DFN Package
- ESD protection all ports above 1000V HBM



Functional Block Diagram

Applications

- 2G / 3G / 4G / 5G
- ISM
- WLAN

Product Description

The YG380 is a high performance InGaP/GaAs HBT MMIC gain block amplifier utilizing a darlington pair configuration with an active bias network. The active bias network provides stable current over temperature and process variations. The YG380 is internally matched to 50Ω, its typical bias condition is a single 5V supply, and does not require a dropping resistor as compared to typical darlington amplifiers. The YG380 is assembled in an industry standard DFN package. It is internally integrated with ESD protection unit.

Pin Description

Pin No.	Symbol	Description
1, 3	NC	No connect
2	RF IN	RF input
4, 5, 6	RF OUT/VCC	RF output and power supply



Absolute Maximum Ratings

Parameter	Rating	Unit
Input RF Power	+20	dBm
Supply Voltage	-0.5 to +6.0	V
Device Current	200	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.

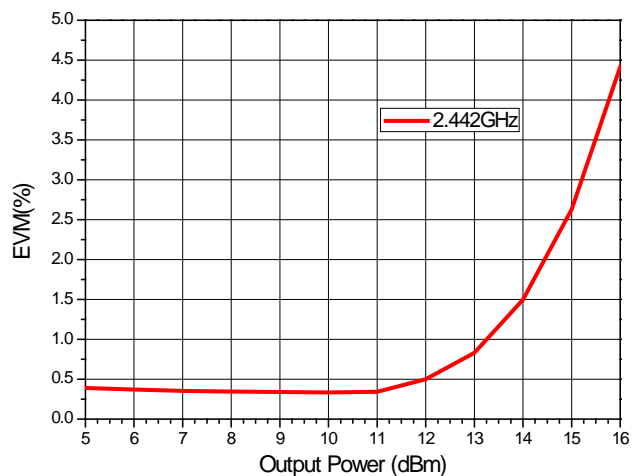
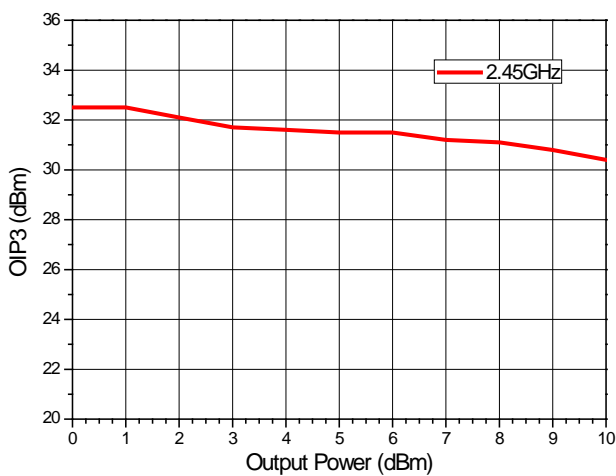
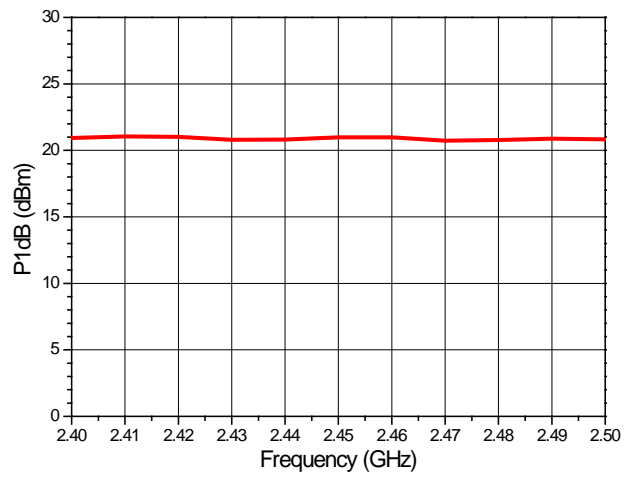
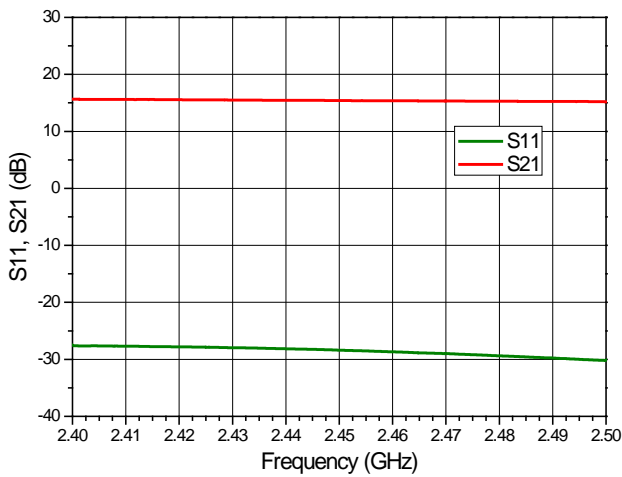
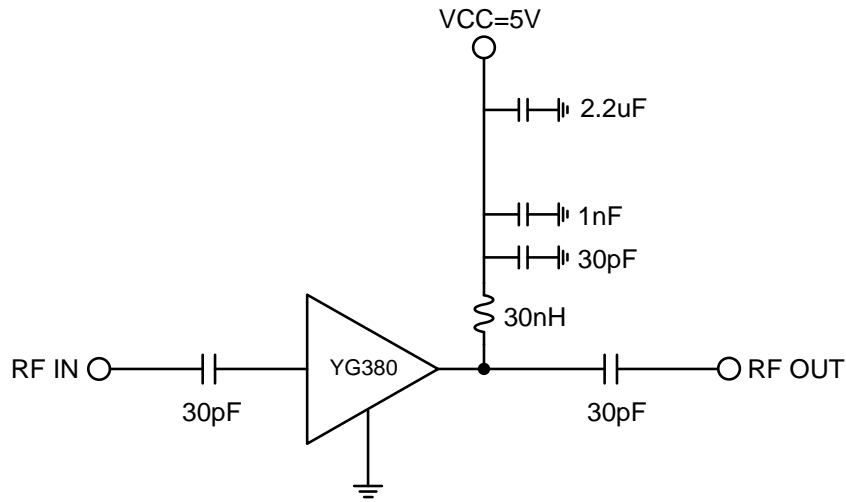
Electrical Specifications

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Small Signal Gain		9.5		dB	4800MHz
		11.7		dB	3500MHz
		17.3		dB	2000MHz
		23.5		dB	900MHz
P1dB Output Power		14.2		dBm	4800MHz
		14.7		dBm	3500MHz
		22.2		dBm	2000MHz
		20.2		dBm	900MHz
Input Return Loss		17.5		dB	4800MHz
		14.0		dB	3500MHz
		23.1		dB	2000MHz
		21.7		dB	900MHz
Output Return Loss		11.0		dB	4800MHz
		4.8		dB	3500MHz
		3.6		dB	2000MHz
		5.1		dB	900MHz
Reverse Isolation		25.1		dB	4800MHz
		27.5		dB	3500MHz
		29.8		dB	2000MHz
		31.1		dB	900MHz
OIP3 ¹⁾		22.5		dBm	4800MHz
		23.0		dBm	3500MHz
		32.3		dBm	2000MHz
		31.2		dBm	900MHz
Noise Figure		4.8		dB	2000MHz
Supply Voltage		5.0		V	
Device Current		70		mA	

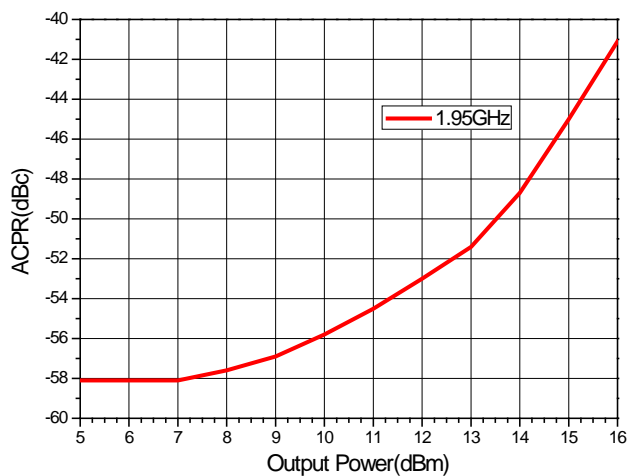
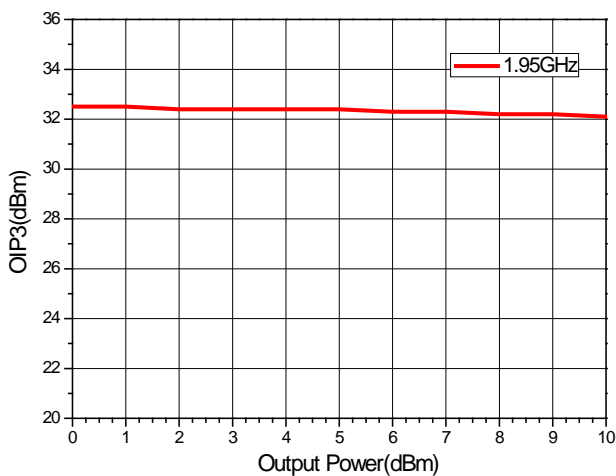
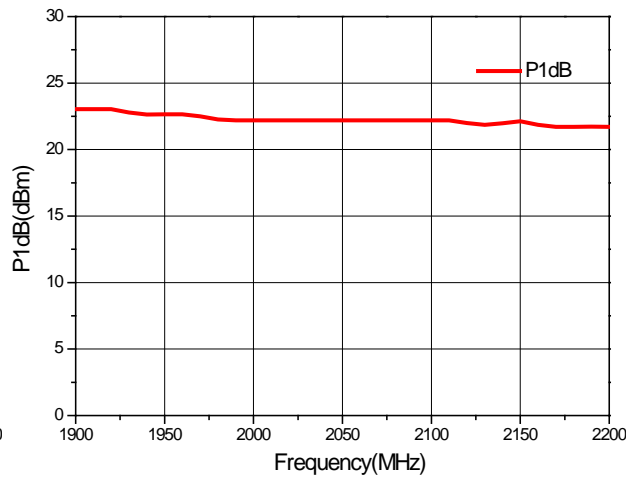
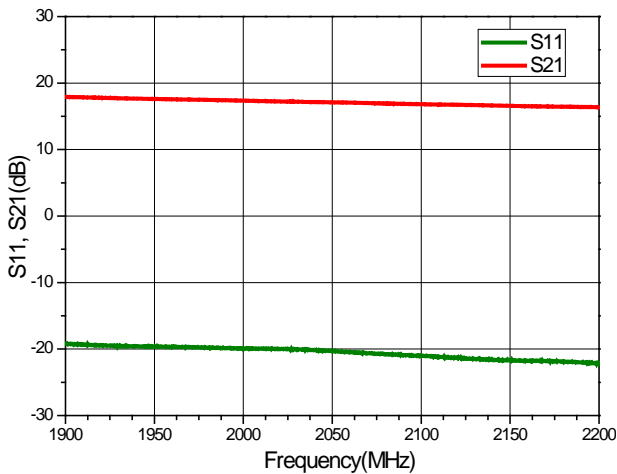
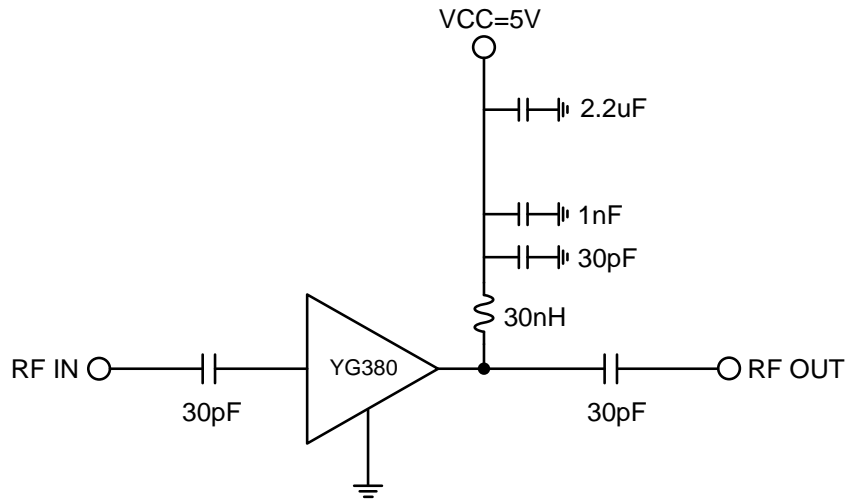
1) OIP3 measured with two tones at an output power of 0dBm/ tone separated by 1MHz.

Typical Performance

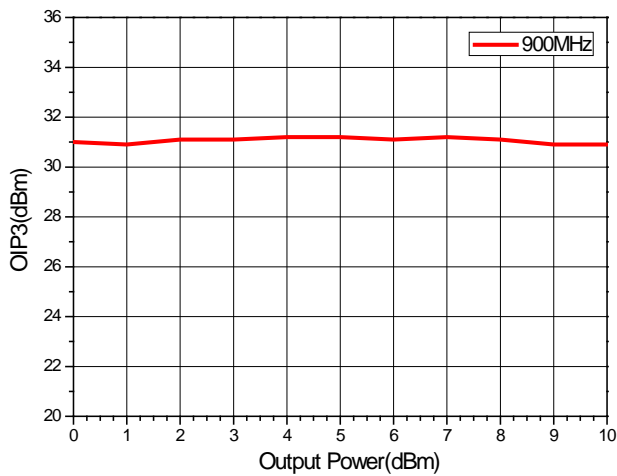
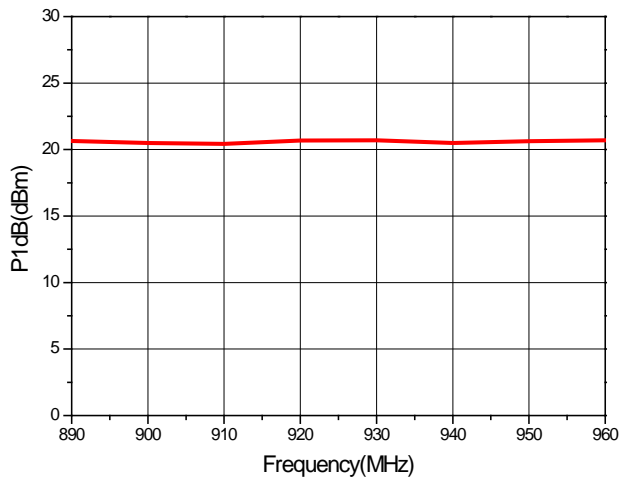
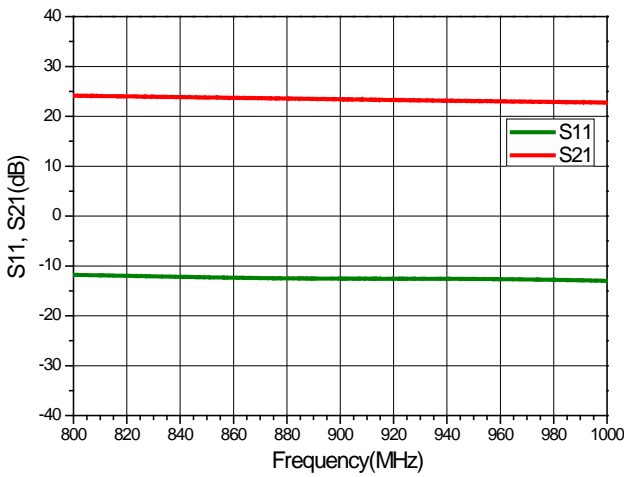
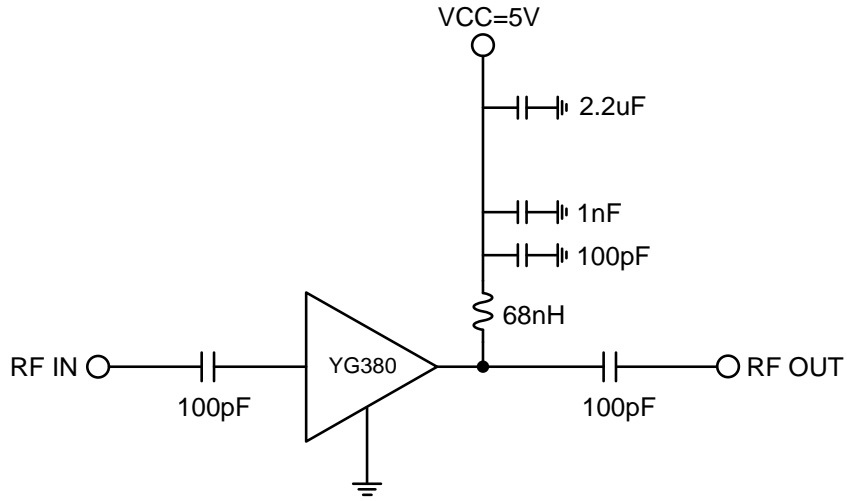
WLAN (2400~2500MHz) Application:



WCDMA (1900~2200MHz) Application:

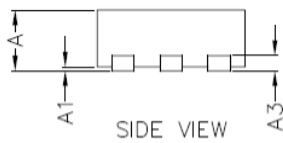
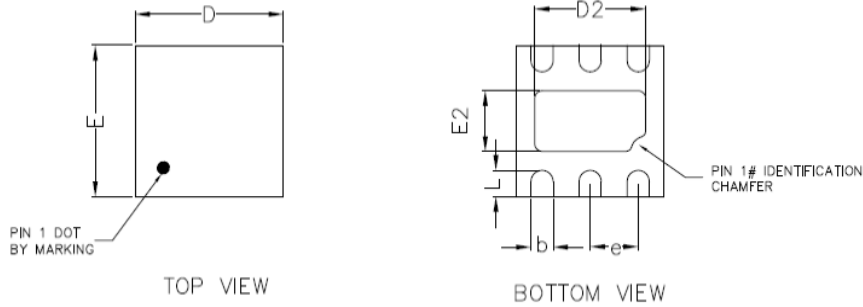


GSM (890~960MHz) Application:



Package Diagram

(Units: millimeters)



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		