Product Features

- 50 ~ 3000MHz
- GaAs MMIC
- 43dBm Output IP3
- 14.0dB Gain
- 22dBm P1 dB
- Single +5V Supply
- SOT-89 SMT Package

Application

- CDMA, W-CDMA Medium Power Amplifier
- High Linearity Drive Amplifier

Package Type: SOT-89

Description

AP205A is a high linearity amplifier designed with GaAs MMIC in a low cost SOT-89 package.
It is designed for applications such as GSM, CDMA, W-CDMA drive devices which require high IP3.

Absolute Maximum Ratings

PARAMETER	UNIT	MIN	MAX
Device Voltage	VDC		+9
RF Input Power(Continuous)	dBm		+7
Storage Temperature	℃	-40	+150

Operating Ranges

PARAMETER	UNIT	MIN	TYP	MAX
Operating Frequency	MHz	50		3000
Device Voltage	VDC		+5	+6
Case Temperature	℃	-40		+85

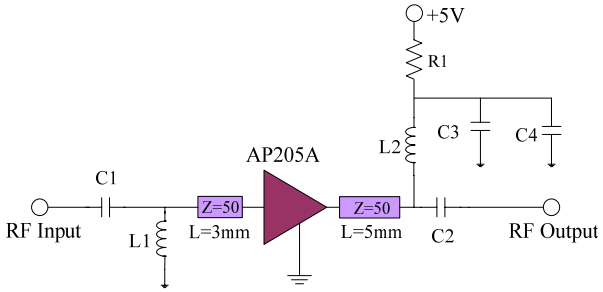
Electrical Specifications

(Ta=+25℃, V_{DD}=+5V, Test Freq=900 MHz)

PARAMETER	Units	Min	Typ	Max
Gain (S_{21})	dB	12	14	
Input Return Loss (S_{11})	dB		-17	
Output Return Loss (S_{22})	dB		-15	
Output 3rd Order Intercept Point (OIP3)	dBm	38	43	
Output 1dB compression Point (P_1dB)	dBm		22	
Noise Figure	dB		2.3	
DC Operating Current	mA	90	115	140
Supply Voltage	Vdc		+5V	
Thermal Resistance (Rth)	℃/W			50

OIP3 is measured with two tones, at an output power of +10dBm/tone separated by 1MHz.

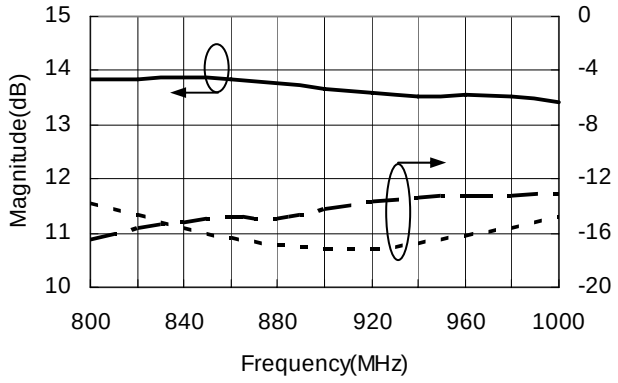
Application Circuit (900MHz)



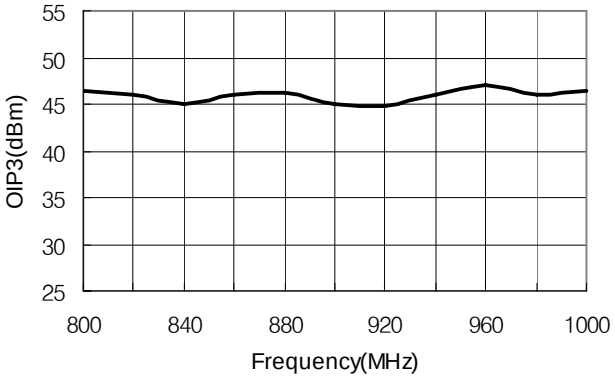
Bill of Material

Parameter		Parameter	
C1	51 pF	L1	8.2 nH
C2	330 pF	L2	18 nH
C3	100 pF	R1	0 Ω
C4	0.1 uF		

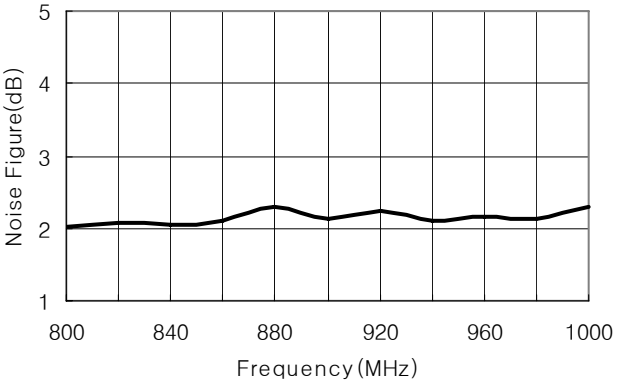
S-Parameter vs. Frequency



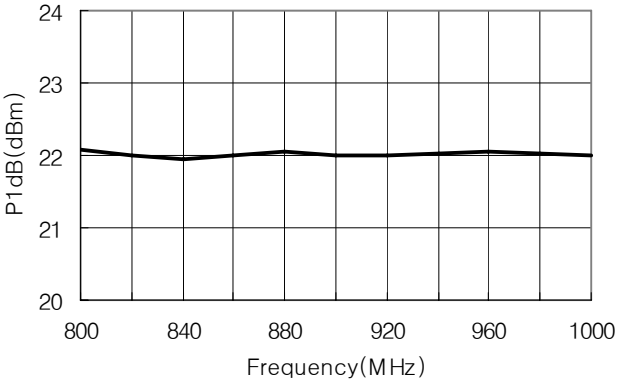
OIP3 vs. Frequency



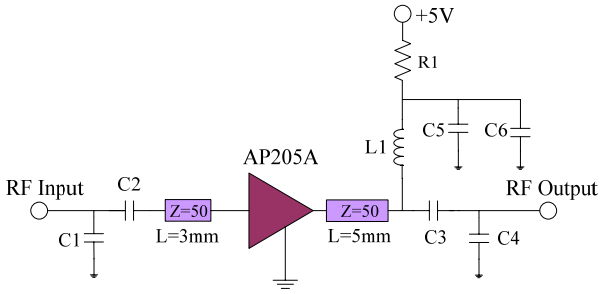
Noise Figure vs. Frequency



P1dB vs. Frequency



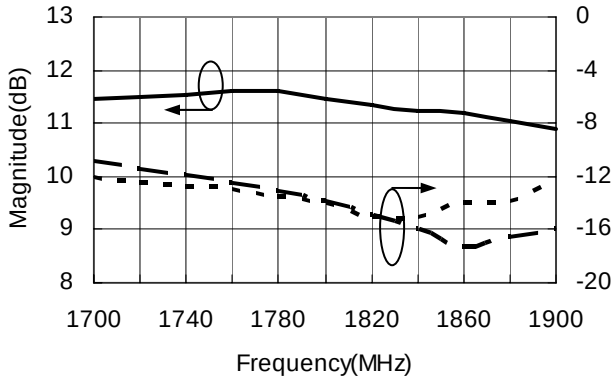
Application Circuit (1800MHz)



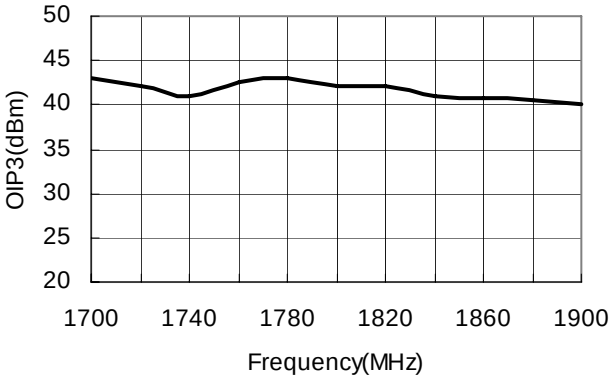
Bill of Material

Parameter		Parameter	
C1	2.0 pF	C6	0.1 uF
C2,C3	100 pF	L1	18 nH
C4	1.0 pF	R1	0 Ω
C5	100 pF		

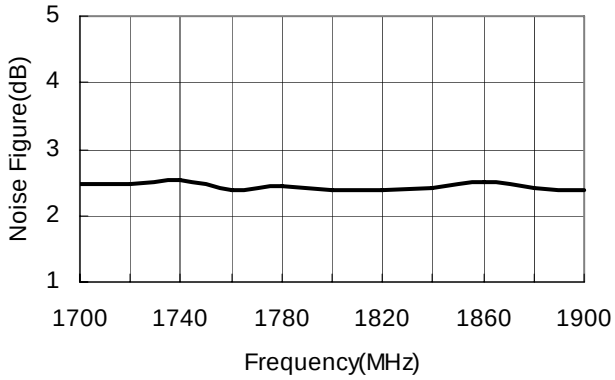
S-Parameter vs. Frequency



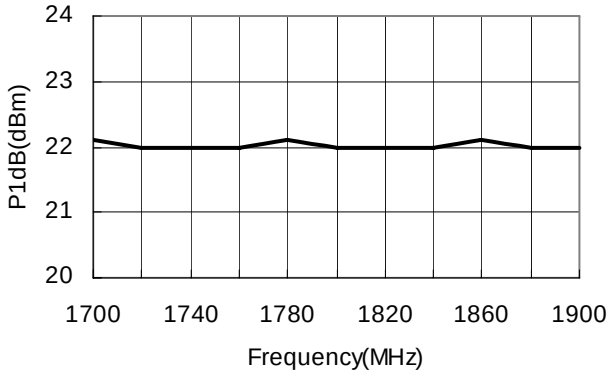
OIP3 vs. Frequency



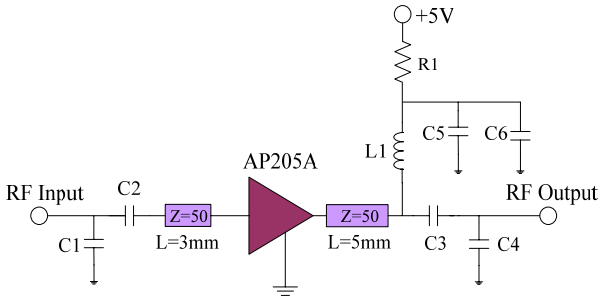
Noise Figure vs. Frequency



P1dB vs. Frequency



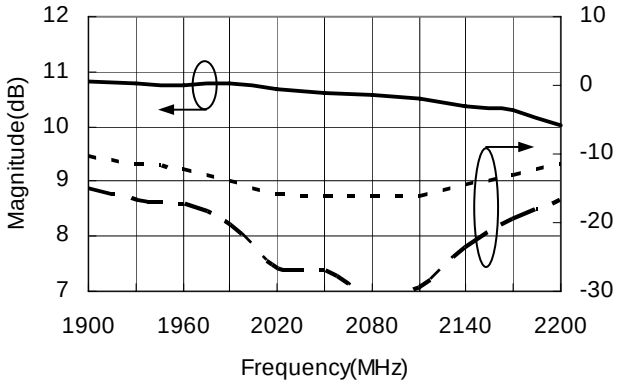
Application Circuit (2100MHz)



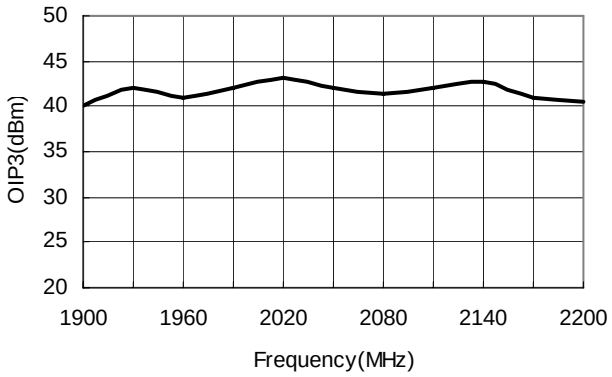
Bill of Material

Parameter		Parameter	
C1	1.5 pF	C6	0.1 uF
C2 ,C3	100 pF	L1	18 nH
C4	1.0 pF	R1	0 Ω
C5	100 pF		

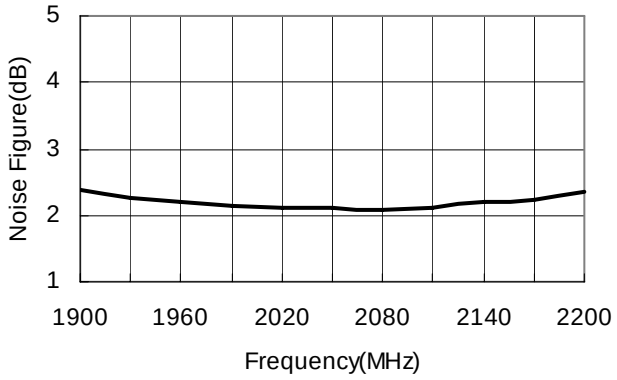
S-Parameter vs. Frequency



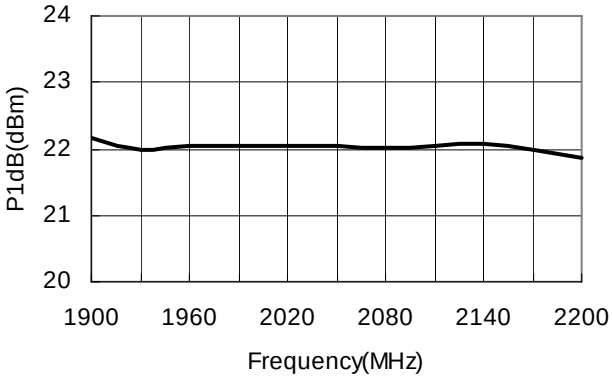
OIP3 vs. Frequency



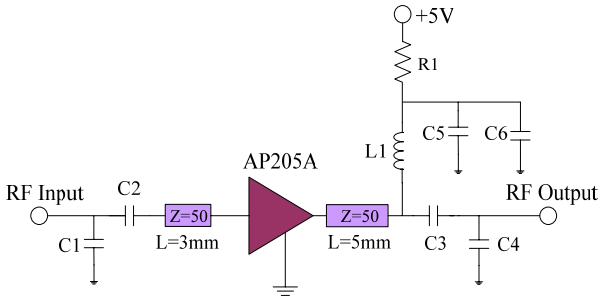
Noise Figure vs. Frequency



P1dB vs. Frequency



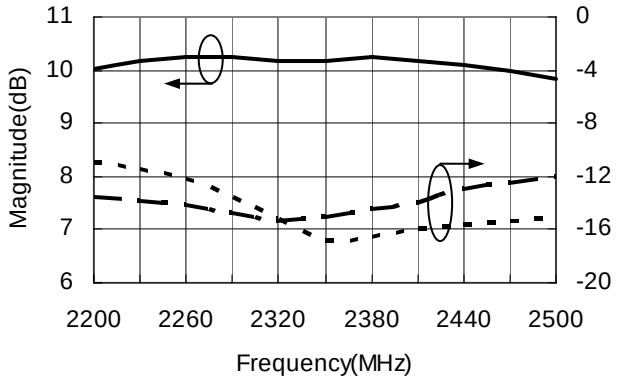
Application Circuit (2300MHz)



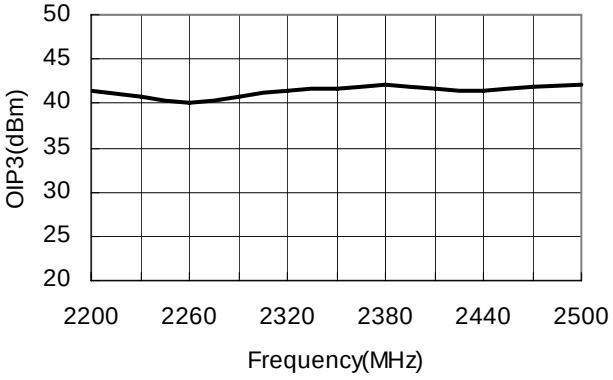
Bill of Material

Parameter		Parameter	
C1	1.5 pF	C5	100 pF
C2	33 pF	C6	0.1 uF
C3	39 pF	L1	18 nH
C4	1.0 pF	R1	0 Ω

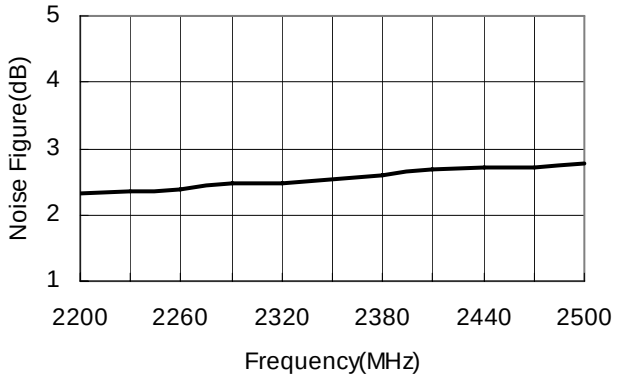
S-Parameter vs. Frequency



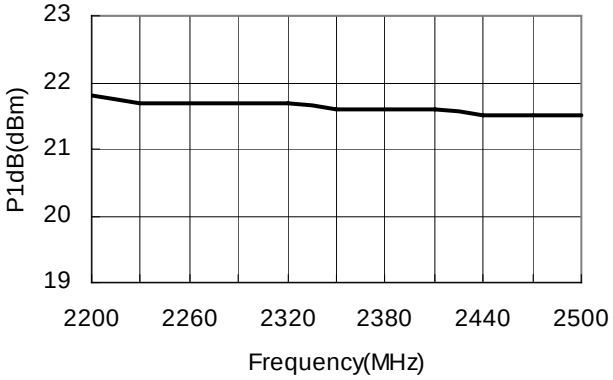
OIP3 vs. Frequency



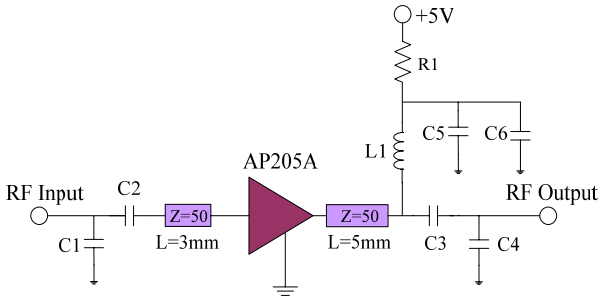
Noise Figure vs. Frequency



P1dB vs. Frequency



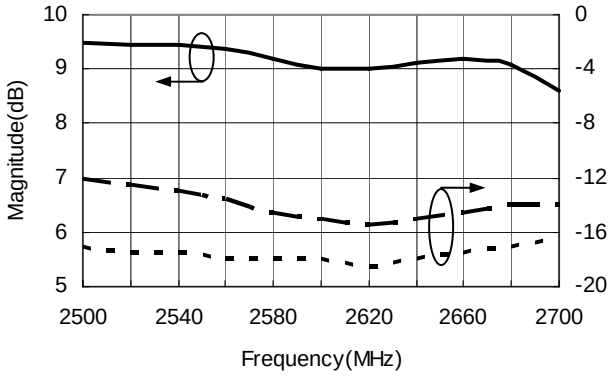
Application Circuit (2600MHz)



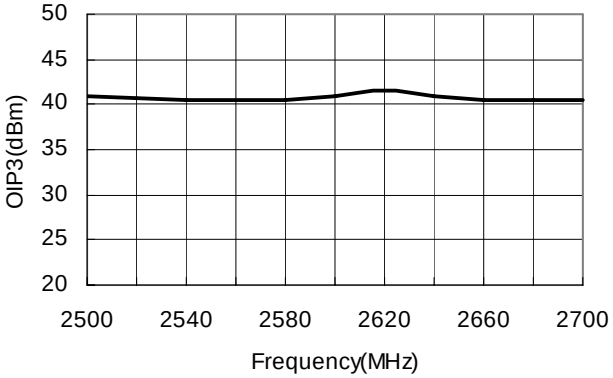
Bill of Material

Parameter		Parameter	
C1	1.5 pF	C5	100 pF
C2	8.0 pF	C6	0.1 uF
C3	15 pF	L1	18 nH
C4	0.5 pF	R1	0 Ω

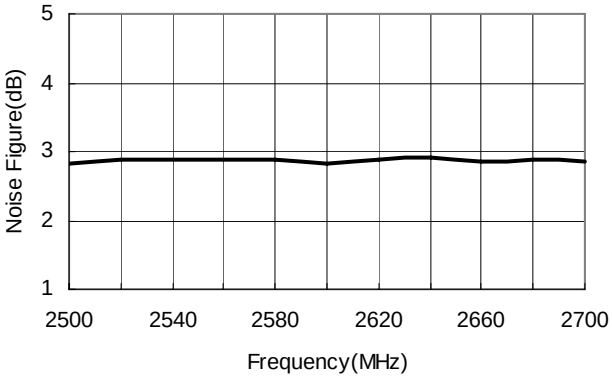
S-Parameter vs. Frequency



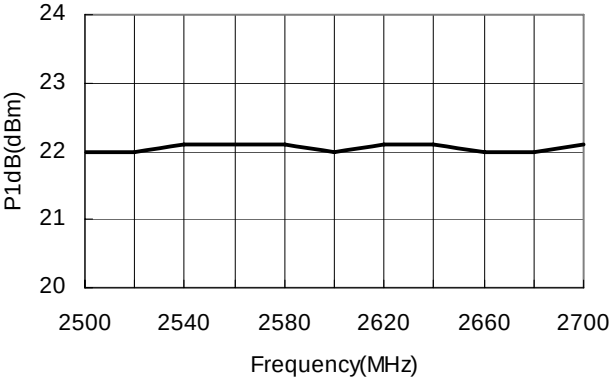
OIP3 vs. Frequency



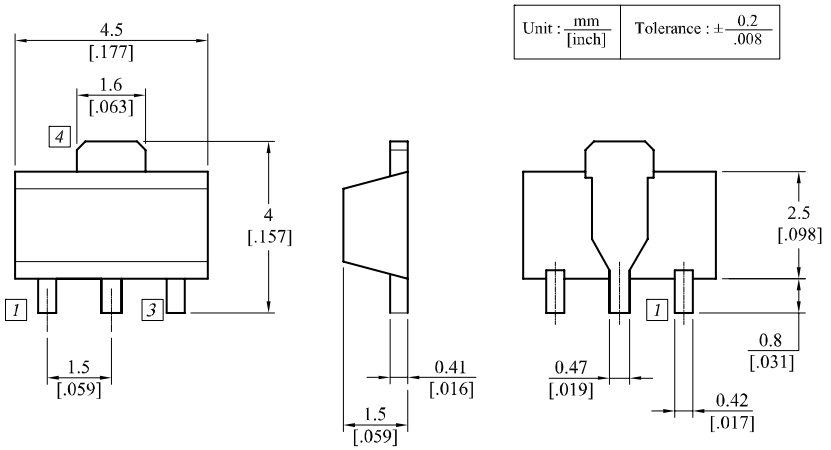
Noise Figure vs. Frequency



P1dB vs. Frequency



Package Dimensions (Type: SOT-89)

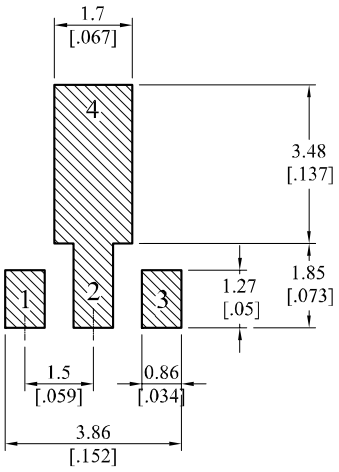


Pin No	Function
1	Input
2	Ground
3	Output/Bias
4	Ground

! ESD sensitive

Observe precautions for handling, testing and packaging.

Recommended Pattern



Recommended Mounting Configuration