

Product Features

- 50 ~ 3000 MHz
- GaAs MMIC
- 43dBm Output IP3
- 26dB Gain
- 24dBm P1dB
- Single +9V Supply

Applications

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



Package Type : SOIC-8

Description

AP249 is a high linearity amplifier designed with GaAs MMIC.

AP249 is designed for applications such as GSM, CDMA, W-CDMA driver devices which require high IP3

Electrical Specifications @ Ta=+25°C, V_{DD}=+9V, Fc=900 MHz

PARAMETER	UNIT	MIN	TYP	MAX
Gain	dB	27	28	-
Input Return Loss	dB	-	-15	-
Output Return Loss	dB	-	-15	-
Output IP3	dBm	40	43	-
1dB Compression Point	dBm	-	24	-
Noise Figure	dB	-	2.5	-
DC Current	mA	-	240	-
Supply Voltage	VDC	-	9	-
Thermal Resistance (Rth)	°C/W	-	-	20

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

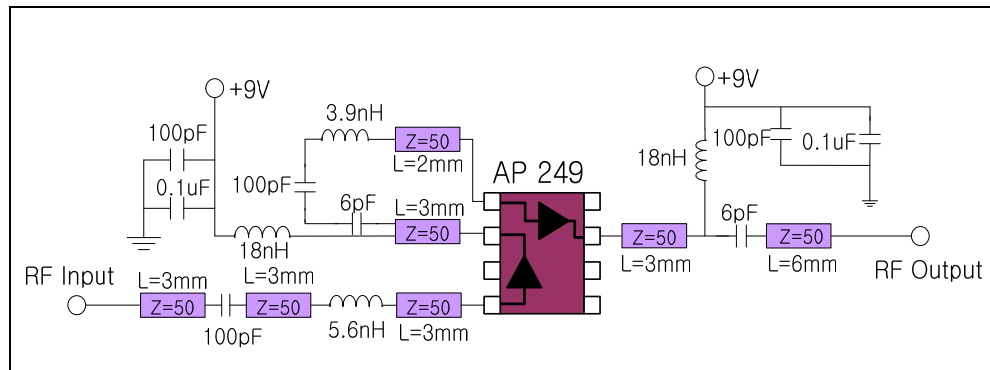
Absolute Maximum Ratings

PARAMETER	UNIT	MIN	MAX
Device Voltage	VDC	-	12
RF Input Power	dBm	-	10
Storage Temperature	°C	-40	150

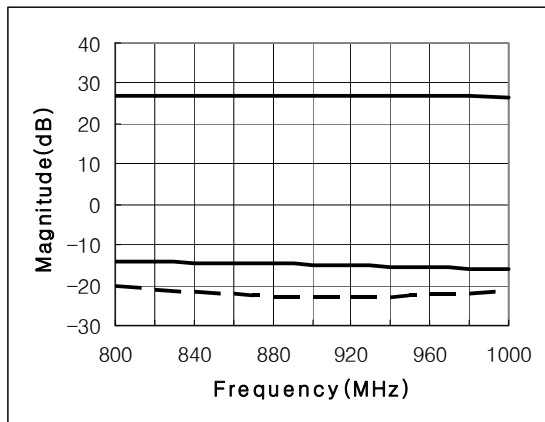
Operating Ranges

PARAMETER	UNIT	MIN	TYP	MAX
Operating Frequency	MHz	50	-	3000
Device Voltage	VDC	-	9	10
Case Temperature	°C	-40	-	85

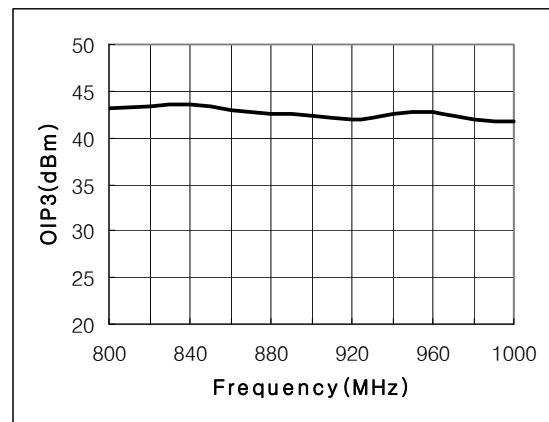
Application Circuit @ 900MHz



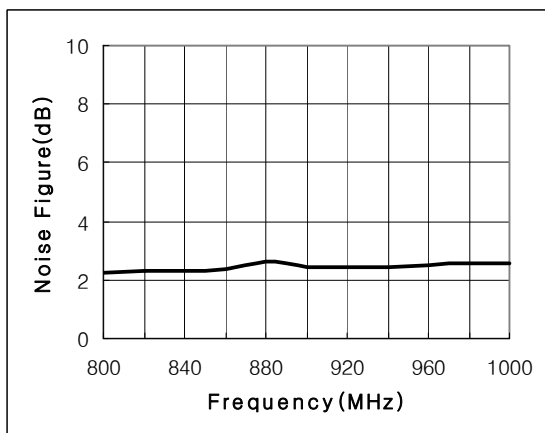
S-Parameter vs. Frequency



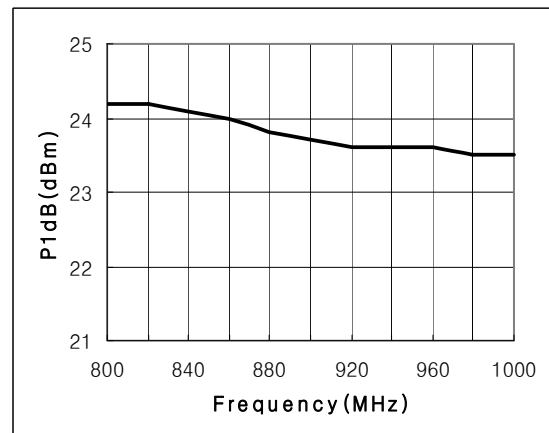
OIP3 vs. Frequency



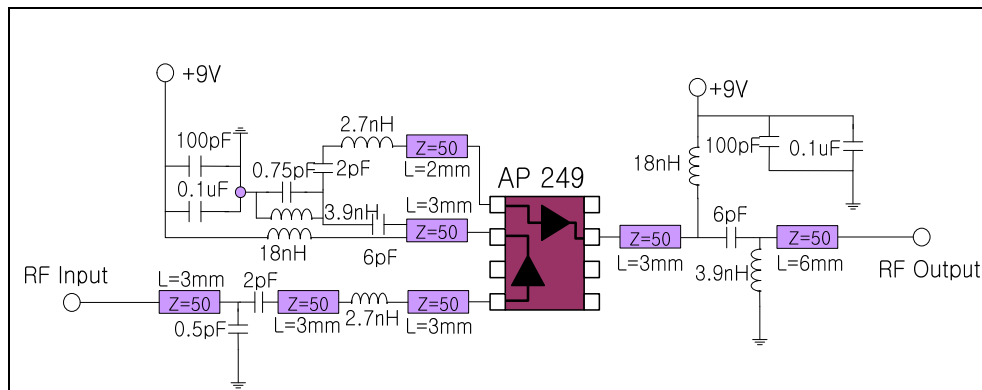
Noise Figure vs. Frequency



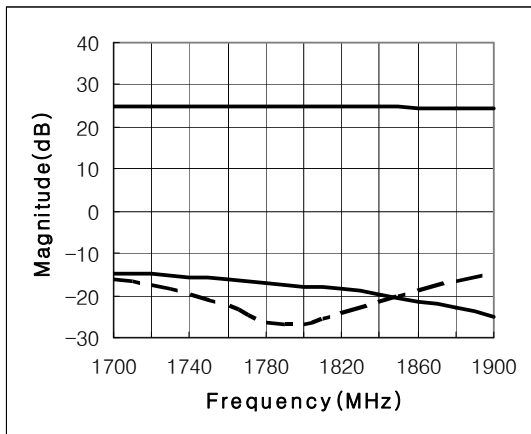
P1dB vs. Frequency



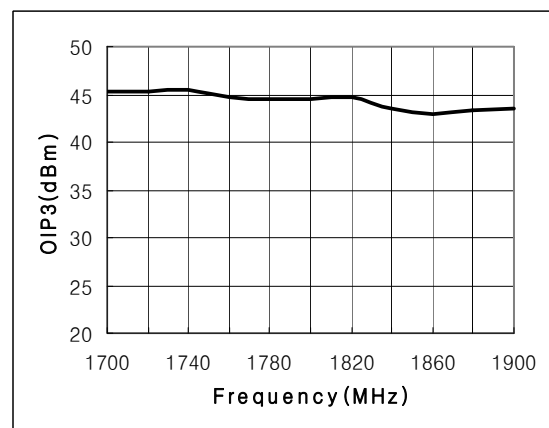
Application Circuit @ 1800MHz



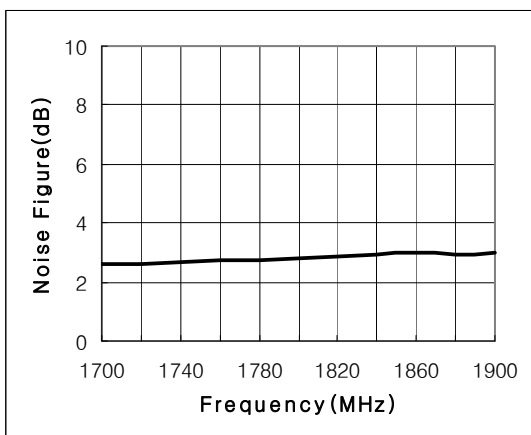
S-Parameter vs. Frequency



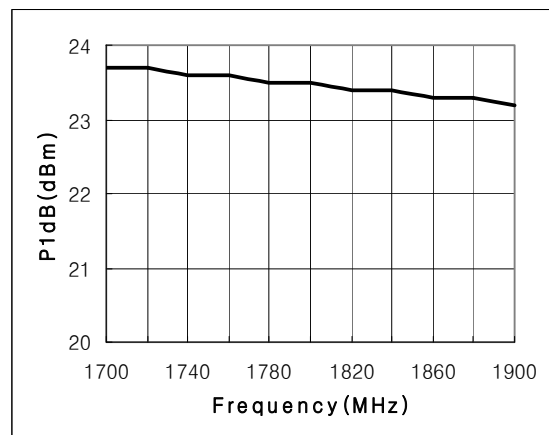
OIP3 vs. Frequency



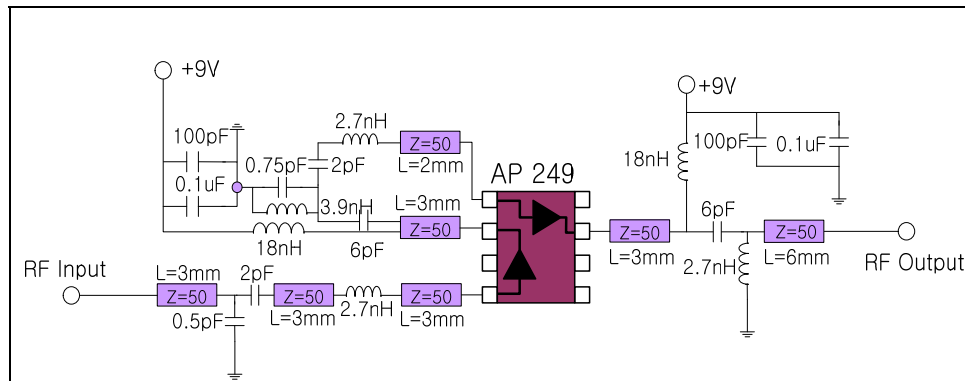
Noise Figure vs. Frequency



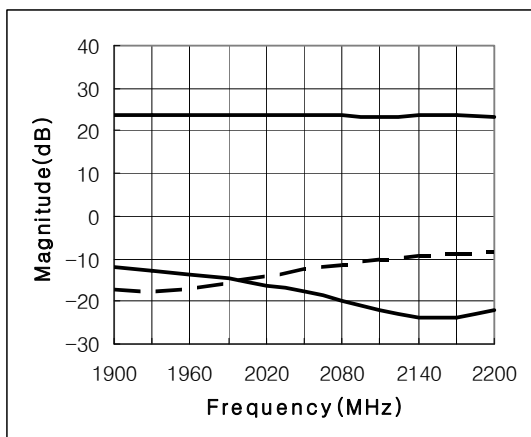
P1dB vs. Frequency



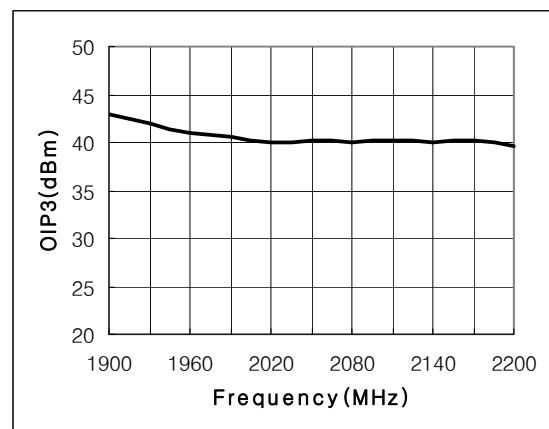
Application Circuit @ 2100MHz



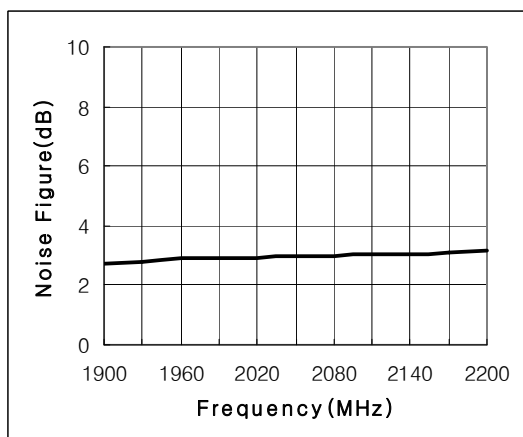
S-Parameter vs. Frequency



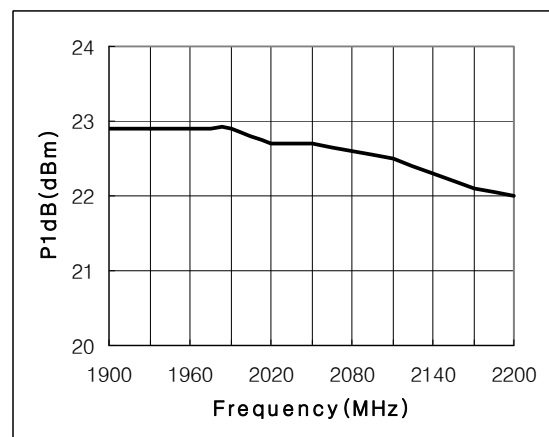
OIP3 vs. Frequency



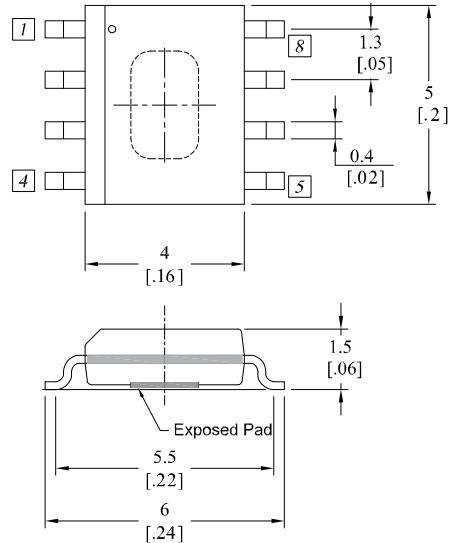
Noise Figure vs. Frequency



P1dB vs. Frequency

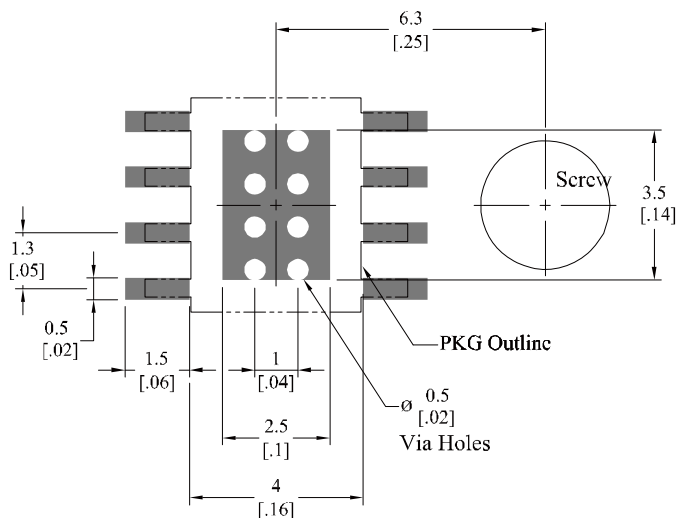


Package Dimensions (Type: SOIC-8)

* Unit: mm[inch] | Tolerance ± 0.2 [.008]

Pin Description			
Pin No	Function	Pin No	Function
1	RF IN(2)	5	RF OUT(1)
2	GND	6	GND
3	GND	7	GND
4	RF IN(1)	8	RF OUT(2)

Recommended Pattern



Mounting Configuration Notes

1. Ground / thermal via holes are critical for the proper performance of this device.
2. Add as much copper as possible to inner and outer layers near the part to ensure optimal thermal performance.
3. Mounting screws can be added near the part to fasten the board to a heat sink. Ensure that the ground / thermal via hole region contacts the heat sink.
4. Do not put solder mask on the backside of the PCB in the region where the board contacts the heat sink.
5. RF trace width depends upon the PCB material and construction.
6. Use 1 oz. Copper minimum.

Revision History

Part Number	Release Date	Version	Modification	Data Sheet Status
AP249	2012.10.15	5.4	Change by a new document form	-

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