

Product Features

- Small size
- SMD Type Package
- NO matching circuit needed
- High efficiency
- Dual supply voltage
- Higher linearity
- 8 pin Air cavity package
- Higher productivity
- Lower manufacturing cost
- GaAs MMIC
- 30 – 870MHz

Applications

- Repeater
- RF Sub-Systems
- Base Station
- Converter
- CATV



Package : SOIC-8

Descriptions

The power amplifier is designed for base stations and repeater systems.

GaAs MMIC is used and attached on a copper carrier of 8 pin air cavity package with dual supply voltage.

Specifications

T=25℃, Vdd=5.0V, 75Ω system

Parameter		Units	Minimum	Typical	Maximum	Condition
Frequency Range		MHz		30~870MHz		
Supply Voltage		V		5		Vdd=5V
Single Ended CATV Evaluation						
Current		mA	200	230	260	
S21-Gain		dB	11.5	12.5		30MHz
S21-Gain		dB	11	12		870MHz
S11-Input Return Loss		dB	-11	-17		
S22-Output Return Loss		dB	-11	-17		
OIP3		dBm	37	40		
OIP1		dBm	21	23		
Noise Figure		dB		3.2	5.5	
CSO	30 - 870MHz	dBc		-55	-51	135 channels,+40dBmV/ch
CTB		dBc		-52	-48	135 channels,+40dBmV/ch
XMD		dBc		-52	-50	135 channels,+40dBmV/ch

T=25℃, Vdd=6.0V, 75Ω system

Parameter		Units	Minimum	Typical	Maximum	Condition
Frequency Range		MHz		30~870MHz		
Supply Voltage		V		6		Vdd=6V
Single Ended CATV Evaluation						
Current		mA	200	230	260	
S21-Gain		dB	11.5	12.5		30MHz
S21-Gain		dB	11	12		870MHz
S11-Input Return Loss		dB	-11	-17		
S22-Output Return Loss		dB	-11	-17		
OIP3		dBm	41	44		
OIP1		dBm	21	24		
Noise Figure		dB		3.3	5.5	
CSO	30 - 870MHz	dBc		-55	-51	135 channels,+40dBmV/ch
CTB		dBc		-63	-58	135 channels,+40dBmV/ch
XMD		dBc		-60	-50	135 channels,+40dBmV/ch

T=25°C, Vdd=9.0V, 75Ω system

Parameter	Units	Minimum	Typical	Maximum	Condition
Frequency Range	MHz		30~870MHz		
Supply Voltage	V		9		Vdd=9V
Single Ended CATV Evaluation					
Current	mA	200	230	260	
S21-Gain	dB	11.5	12		30MHz
S21-Gain	dB	11	12		870MHz
S11-Input Return Loss	dB	-11	-17		
S22-Output Return Loss	dB	-11	-15		
OIP3	dBm	41	44		
OIP1	dBm	23	25		
Noise Figure	dB		3.5	6	
CSO	30 - 870MHz	dBc	-57	-52	135 channels,+40dBmV/ch
CTB		dBc	-65	-60	135 channels,+40dBmV/ch
XMD		dBc	-62	-50	135 channels,+40dBmV/ch

Location: AP222_VDD=5V [RUDDUDUUDR2UDDUXXXX - 0-PostAmp;Pwr:5.098v; .0000a]

Level: +40dBmV Tilt: 135CH FLAT

FRQ	XMD(NCTA)	CTB_RAW	CTB_COR	N-FLR	CSU_RAW	CSU_COR	CSU_FRQ	CSL_RAW	CSL_COR	CSL_FRQ
55.25	54.1	56.3	56.3	86.3	73.5	73.8	56	56.3	56.3	53.99
77.25	54.3	56.7	56.7	86.8	57.2	57.2	78	82.8	85	75.99
109.25	54.4	56.5	56.5	87.3	74.6	74.8	109.99	58.2	58.2	107.99
211.25	53.8	55.9	55.9	87.5	67.1	67.1	212.5	60.7	60.7	209.99
331.25	54.7	54.5	54.5	86.2	63	63	332.49	62.3	62.3	329.99
445.25	54.5	54.6	54.6	86.7	62.2	62.2	446.49	64.7	64.7	444
547.25	55.3	53.1	53.1	84.7	60.3	60.3	548.5	64.6	64.6	545.99
637.25	54.8	53.1	53.1	85.2	59.4	59.4	638.5	66.2	66.2	635.99
745.25	53.7	52.8	52.8	84.7	56.7	56.7	746.49	66.7	66.7	743.99
859.25	51.4	52.5	52.5	83.1	55.8	55.8	860.49	69.3	69.5	857.99
Min	51.4	52.5	52.5	83.1	55.8	55.8	56	56.3	56.3	53.99
Max	55.3	56.7	56.7	87.5	74.6	74.8	860.49	82.8	85	857.99

Multi-Tone Test 135ch@+40dBmV(Vdd=6.0V)

Location: AP222_VDD=6V [RUDDUDUUDR2UDDUXXXX - 0-PostAmp;Pwr:5.098v; .0000a]

Level: +40dBmV Tilt: 135CH FLAT

FRQ	XMD(NCTA)	CTB_RAW	CTB_COR	N-FLR	CSU_RAW	CSU_COR	CSU_FRQ	CSL_RAW	CSL_COR	CSL_FRQ
55.25	59.9	63.7	63.7	86.4	72.7	72.9	55.99	56.8	56.8	53.99
77.25	60.3	64.6	64.6	86.8	57.4	57.4	77.99	85.6	90	75.99
109.25	61.3	64.3	64.3	87.3	73.4	73.6	109.99	58.6	58.6	107.99
211.25	61.6	63.8	63.8	87.4	67	67	212.5	60.9	60.9	209.99
331.25	63.6	63.2	63.2	86.2	63.4	63.4	332.5	62.4	62.4	329.99
445.25	64.5	63.9	63.9	86.8	63.1	63.1	446.49	63.7	63.7	443.99
547.25	65.1	63.3	63.3	84.7	61.2	61.2	548.5	63.2	63.2	545.99
637.25	66	64	64	85.4	60.3	60.3	638.5	64.6	64.6	635.99
745.25	65.7	64	64	84.8	57.9	57.9	746.49	67.4	67.4	743.99
859.25	63.7	64.6	64.6	83.3	57.6	57.6	860.49	73	73.4	858.49
Min	59.9	63.2	63.2	83.3	57.4	57.4	55.99	56.8	56.8	53.99
Max	66	64.6	64.6	87.4	73.4	73.6	860.49	85.6	90	858.49

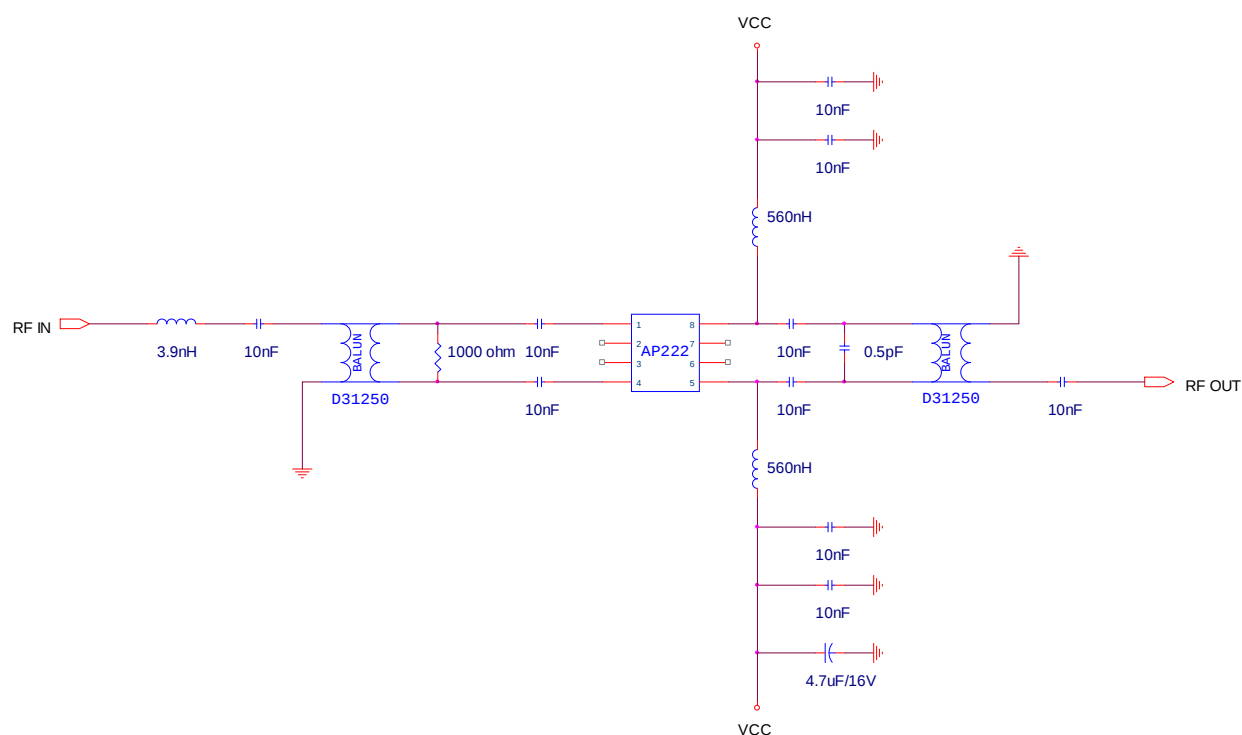
Multi-Tone Test 135ch@+40dBmV(Vdd=9.0V)

Location: AP222_VDD=9V [RUDDUDUUDR2UDDUXXX - 0-PostAmp;Pwr:5.098v; .0000a]

Level: +40dBmV Tilt: 135CH FLAT

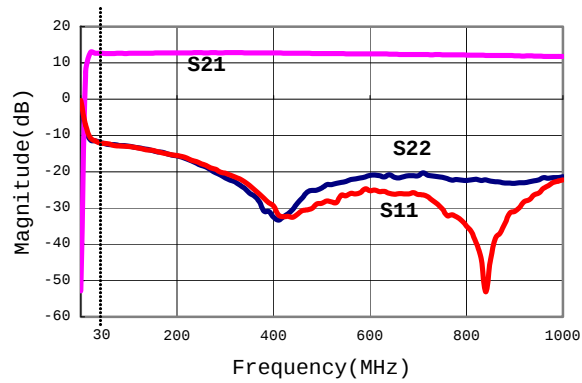
FRQ	XMD(NCTA)	CTB_RAW	CTB_COR	N-FLR	CSU_RAW	CSU_COR	CSU_FRQ	CSL_RAW	CSL_COR	CSL_FRQ
55.25	62.4	68	68	86.2	73.6	73.8	56	57.5	57.5	53.99
77.25	62.6	69.4	69.4	86.4	58.1	58.1	78	86	90.3	76.39
109.25	64.1	68.8	68.8	87.1	74.1	74.4	109.99	59	59	107.99
211.25	65	68.3	68.3	87.3	68.5	68.5	212.5	61	61	209.99
331.25	68	67.3	67.3	86.2	64.5	64.5	332.49	61.6	61.6	329.99
445.25	69.5	68.1	68.1	86.7	64.4	64.4	446.5	62.6	62.6	443.99
547.25	70.2	67.7	67.7	84.8	62.8	62.8	548.49	61.8	61.8	545.99
637.25	71.3	69	69.1	85.4	61.7	61.7	638.49	63.2	63.2	635.99
745.25	71.6	70.4	70.5	84.8	60	60	746.49	65.8	65.8	743.99
859.25	70.3	71.1	71.4	83	60.6	60.6	860.49	77.2	78.7	858.49
Min	62.4	67.3	67.3	83	58.1	58.1	56	57.5	57.5	53.99
Max	71.6	71.1	71.4	87.3	74.1	74.4	860.49	86	90.3	858.49

Application note

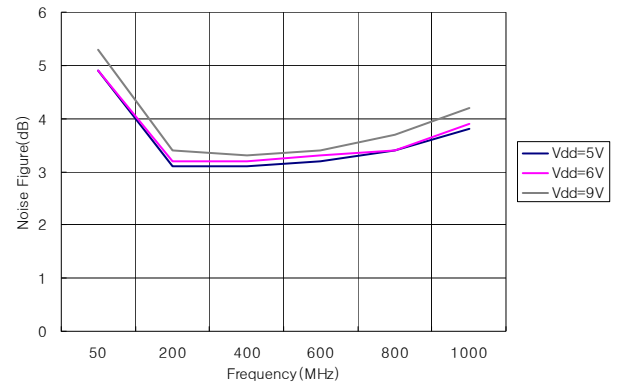


Forward (30MHz ~ 870MHz)

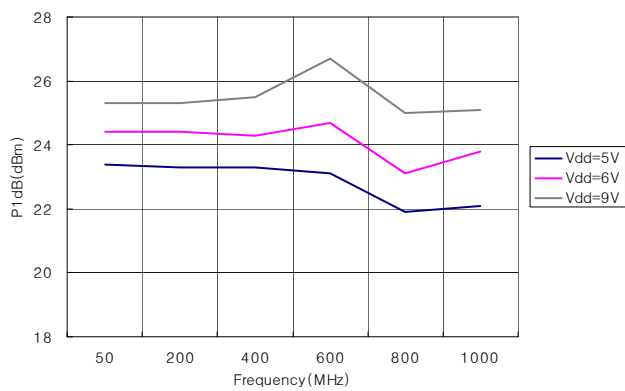
S-Parameters



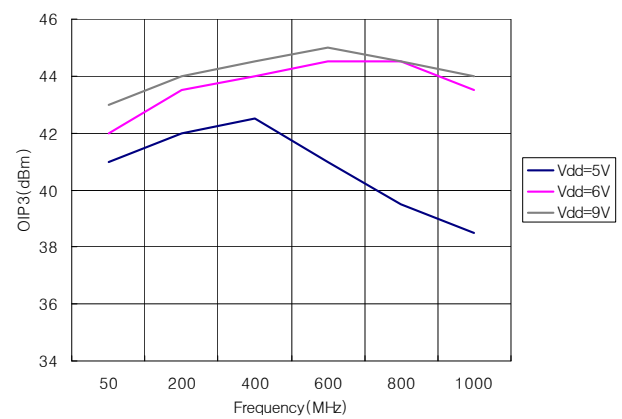
Noise Figure



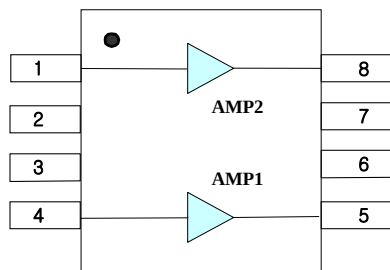
P 1 dB



OIP3

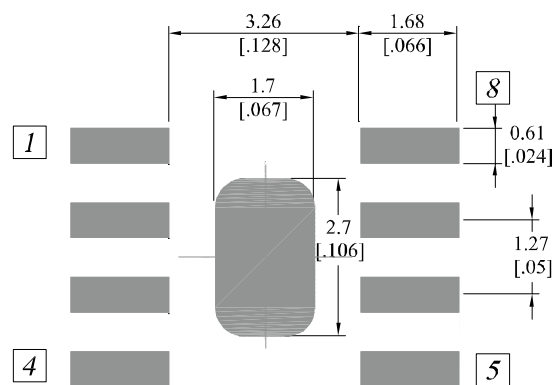
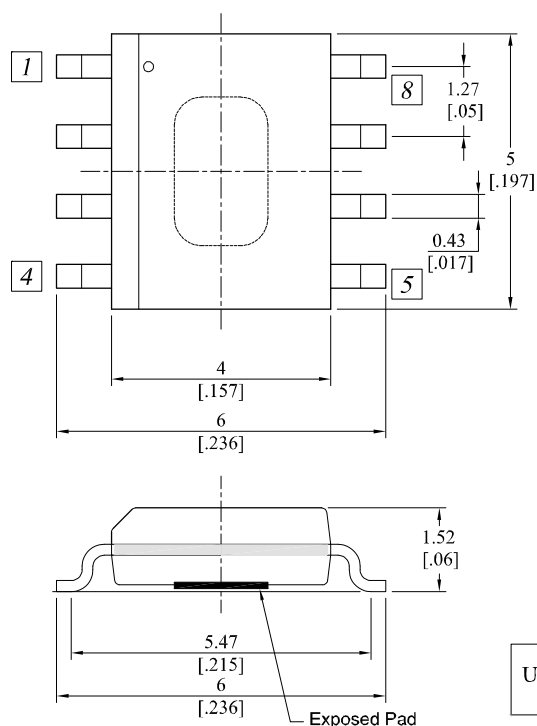


Dimensions



PIN No	Description
1	RF IN(2)
5	RF OUT(1)
4	RF IN(1)
8	RF OUT(2)
2, 3, 6, 7	N.C
Exposed slug	GND

Package Dimensions (Type: SOIC-8)



Unit : $\frac{\text{mm}}{\text{[inch]}}$	Tolerance : $\pm \frac{0.2}{.008}$
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