TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/12

A2CP4121 300 TO 4000 MHz COUGARPAK® AMPLIFIER

Typical Values	A2CP4121
High Gain	29.0 dB
Low Noise Figure	<2.5 dB
High Output Level	+21.0 dBm
High Third Order I.P.	+35 dBm
High Reverse Isolation	55 dB

High Performance Thin Film
Standard Two-stage CougarPak® Package

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	100-4000 MHz	300-4000 MHz	300-4000 MHz
Small Signal Gain (Min.)	29.0 dB	27.0 dB	25.5 dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.2 dB
Noise Figure (Max.)	2.2 dB	3.0 dB	3.5 dB
SWR (Max.) Input/Output	<1.6:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+21.5^ dBm	+20.0^ dBm	+19.0^ dBm
Reverse Isolation	55.0 dB	—	—
DC Current (Max.)	205 mA	215 mA	225 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 1.0 dBm less above 3400 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 2200 MHz	A2CP4121
Second Order Harmonic Intercept Point	+46 dBm
Second Order Two Tone Intercept Point	+40 dBm
Third Order Two Tone Intercept Point	+31 dBm

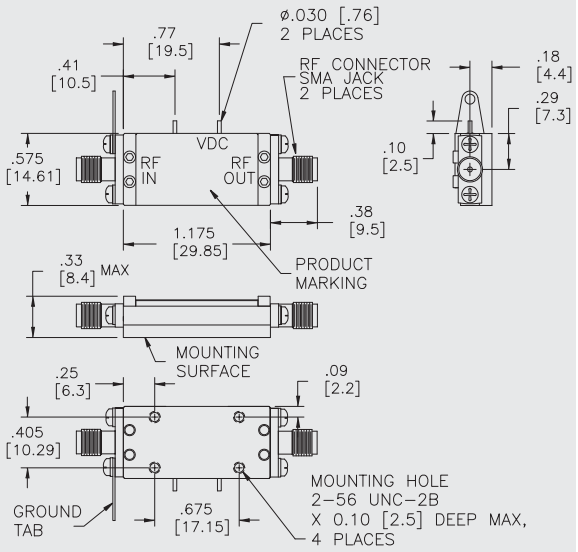
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	+17 dBm
Maximum Peak Power (3 µsec Max.)	+20 dBm
Burn-in Temperature	+85 °C
Thermal Resistance[1] (θjc)	+37 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+66.8 °C

[1] Thermal resistance is based on total power dissipation.

A2CP4121

CougarPak® Connectorized Package (two-stage)

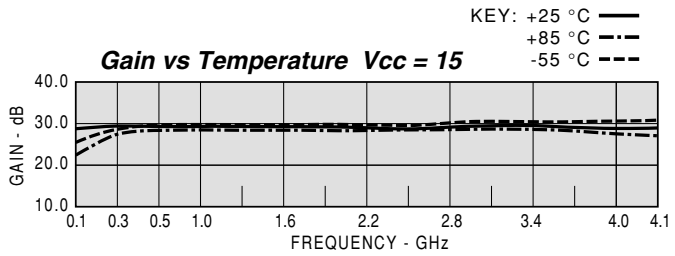


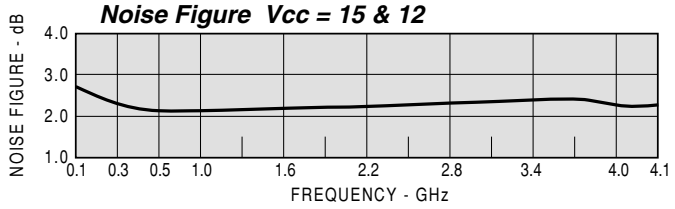
DIMENSIONS ARE IN INCHES [MILLIMETERS]

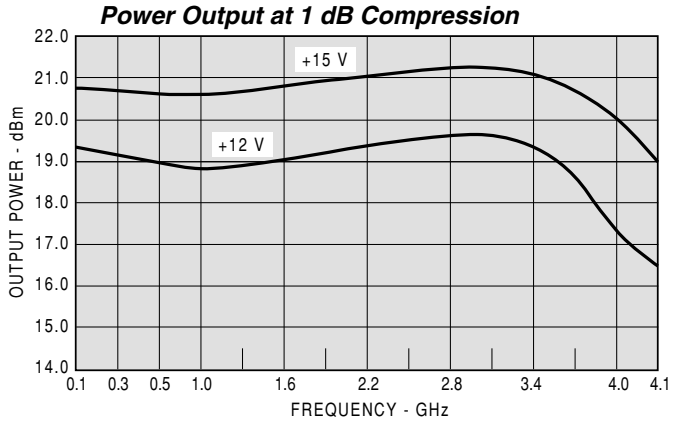
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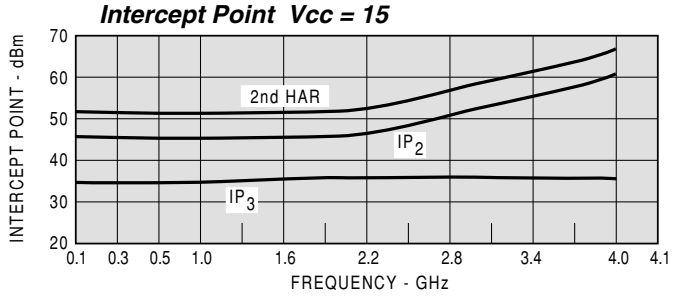
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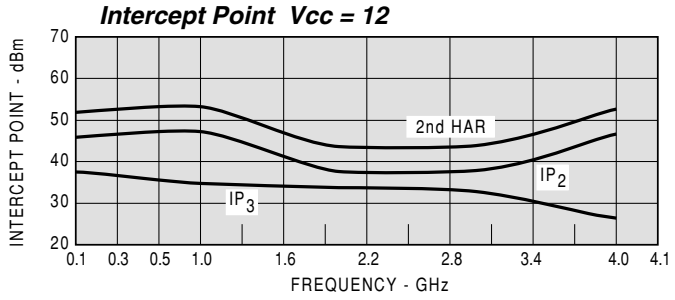
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: A2CP4121 Vcc= +15V Icc= 206.81

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
50	1.50	1.52	27.46	-149		-50.3
100	1.25	1.47	29.06	-171		-52.1
300	1.12	1.42	29.68	149	0.47	-51.9
500	1.12	1.41	29.66	120	0.39	-52.8
1000	1.22	1.43	29.48	54	0.35	-53.4
1300	1.30	1.46	29.43	15	0.35	-56.7
1600	1.39	1.52	29.28	-24	0.35	-58.5
1900	1.46	1.59	29.11	-62	0.33	-56.0
2200	1.48	1.65	29.00	-100	0.33	-59.8
2500	1.46	1.59	28.85	-137	0.32	-54.0
2800	1.47	1.54	29.23	-174	0.34	-54.6
3100	1.46	1.48	29.54	146	0.36	-52.9
3400	1.48	1.43	29.77	104	0.43	-50.0
3700	1.56	1.48	29.53	60	0.44	-55.7
4000	1.59	1.58	28.64	19	0.36	-50.2
4100	1.59	1.58	28.57	9	0.30	-53.4

LINEAR S-PARAMETERS

Model: A2CP4121 Vcc= +15V Icc= 206.81

FREQ	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.20	-72.0	23.60	-148.6	0.003	-2.1	0.21	165.7
100	0.11	-84.7	28.38	-170.9	0.002	-19.5	0.19	163.3
300	0.06	-101.0	30.49	148.9	0.003	-15.5	0.17	153.2
500	0.06	-108.7	30.42	119.8	0.002	-24.0	0.17	142.3
1000	0.10	-123.0	29.80	53.6	0.002	-49.4	0.18	124.7
1300	0.13	-135.6	29.61	14.7	0.001	-72.2	0.19	117.5
1600	0.16	-148.4	29.10	-24.0	0.001	-96.4	0.21	110.1
1900	0.19	-161.2	28.53	-62.1	0.002	-124.5	0.23	101.7
2200	0.19	-169.8	28.18	-99.9	0.001	-156.8	0.24	88.4
2500	0.19	-171.7	27.72	-136.6	0.002	-152.5	0.23	70.4
2800	0.19	-174.8	28.94	-173.9	0.002	170.2	0.21	49.8
3100	0.19	-172.8	29.99	146.1	0.002	168.7	0.19	20.6
3400	0.19	-169.8	30.81	104.0	0.003	134.4	0.18	-20.6
3700	0.22	-170.4	29.96	59.8	0.002	113.4	0.19	-72.4
4000	0.23	-173.8	27.04	19.4	0.003	105.5	0.22	-116.1
4100	0.23	-177.8	26.83	8.6	0.002	75.0	0.22	-127.3
4200	0.22	-176.3	27.50	-5.0	0.000	-139.5	0.24	-133.9

Model: A2CP4121 Vcc= +12V Icc= 194.50

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
50	1.49	1.56	27.47	-149		-50.3
100	1.26	1.51	28.97	-172		-52.2
300	1.15	1.46	29.54	149	0.46	-52.6
500	1.16	1.45	29.51	120	0.39	-53.3
1000	1.28	1.47	29.28	54	0.35	-54.3
1300	1.36	1.50	29.19	15	0.35	-54.5
1600	1.44	1.57	29.01	-23	0.35	-53.0
1900	1.50	1.65	28.79	-61	0.32	-55.7
2200	1.52	1.72	28.63	-97	0.31	-52.4
2500	1.50	1.71	28.64	-133	0.31	-52.6
2800	1.47	1.69	29.01	-170	0.34	-54.0
3100	1.44	1.65	29.36	150	0.34	-53.8
3400	1.47	1.59	29.78	109	0.43	-50.5
3700	1.58	1.58	29.75	64	0.46	-49.5
4000	1.65	1.56	28.85	23	0.39	-50.9
4100	1.64	1.58	28.67	12	0.30	-51.1

LINEAR S-PARAMETERS

Model: A2CP4121 Vcc= +12V Icc= 194.50

FREQ	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
50	0.20	-64.5	23.63	-149.3	0.003	-20.7	0.22	168.0
100	0.12	-69.9	28.09	-171.6	0.002	-2.5	0.20	165.5
300	0.07	-77.3	29.99	148.7	0.002	-45.4	0.19	156.0
500	0.07	-88.9	29.88	119.8	0.002	-36.0	0.18	146.0
1000	0.12	-117.9	29.12	54.0	0.002	-48.8	0.19	128.7
1300	0.15	-133.7	28.81	15.5	0.002	-73.0	0.20	121.5
1600	0.18	-148.2	28.21	-22.9	0.002	-76.3	0.22	114.3
1900	0.20	-161.9	27.52	-60.5	0.002	-83.2	0.25	106.7
2200	0.21	-170.1	27.02	-97.4	0.002	-112.0	0.26	95.1
2500	0.20	-175.0	27.05	-132.9	0.002	-149.8	0.26	80.1
2800	0.19	-178.1	28.23	-170.5	0.002	-174.1	0.26	61.9
3100	0.18	-174.0	29.39	150.5	0.002	-153.1	0.24	35.6
3400	0.19	-168.4	30.83	109.1	0.003	152.7	0.23	-0.5
3700	0.22	-167.6	30.72	64.2	0.003	113.5	0.22	-49.6
4000	0.25	-174.7	27.69	22.5	0.003	54.1	0.22	-99.0
4100	0.24	-177.3	27.13	11.7	0.003	88.5	0.22	-110.0
4200	0.24	-177.3	27.87	-1.6	0.001	99.1	0.24	-119.4