A2CP16212 6.0-16.0 GHz COUGARPAK® AMPLIFIER

Typical Values	*A2CP16212*
Ultra Broad Bandwidth	*6.0-16.0 GHz*
High Gain	*19.0 dB*
Low Noise Figure	*3.2 dB*
High Reverse Isolation	*45 dB*

High Performance Thin Film

High Frequency Two-stage CougarPak® Package

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50° C	Guaranteed -55 to +85° C
Frequency (Min.)	**6.0-16.0 GHz**	**6.0-16.0 GHz**	**6.0-16.0 GHz**
Small Signal Gain (Min.)	19.0 dB	18.4 dB	17.0 dB
Gain Flatness (Max.)	±0.7 dB	±1.5 dB	±1.5 dB
Noise Figure (Max.) 6-8 GHZ 8-16 GHZ	4.0 dB 3.2 dB	4.5 dB 3.7 dB	5.0 dB 4.2 dB
SWR (Max.) Input/Output	1.8:1	2.0:1	2.1:1
Power Output (Min.) @ 1dB comp.	+15.0 dBm	+13.5 dBm	+13.0 dBm
Reverse Isolation	45 dB	—	—
DC Current (Max.)	90 mA	93 mA	95 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25° C	*A2CP16212*
Second Order Harmonic Intercept Point	+45 dBm
Second Order Two Tone Intercept Point	+39 dBm
Third Order Two Tone Intercept Point	+28 dBm

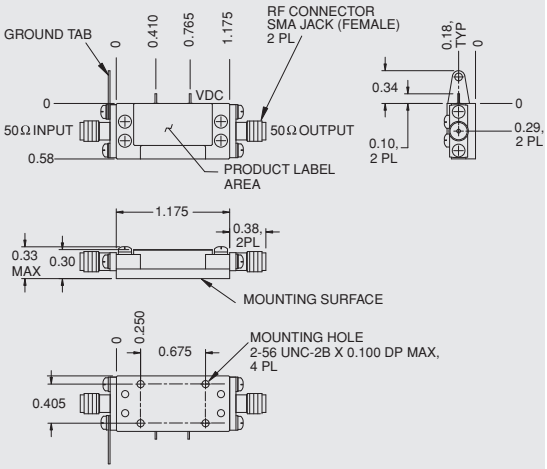
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+8 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	+23 dBm
Maximum Peak Power (3 µsec Max.)	+27 dBm
Burn-in Temperature	+125° C
Thermal Resistance[1] (θjc)	+8.7° C/Watt
Junction Temperature Rise Above Case (Tjc)	+4.0° C

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

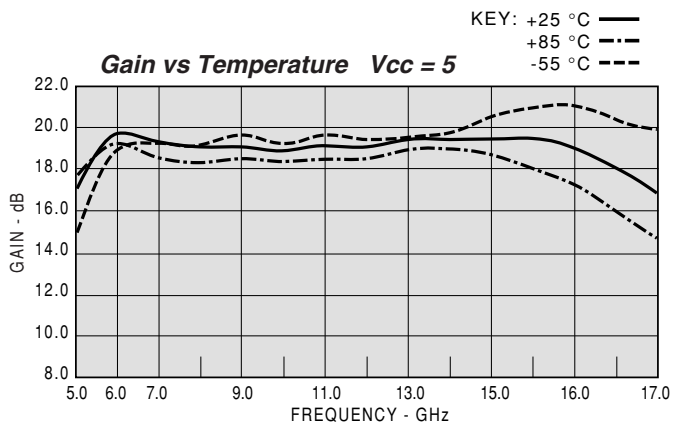
A2CP16212

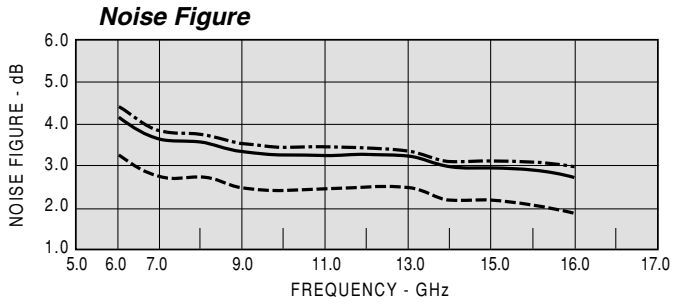
High Frequency CougarPak® SMA Package (two-stage)

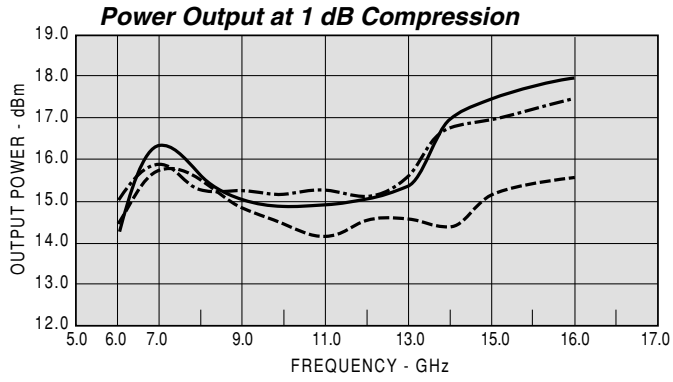


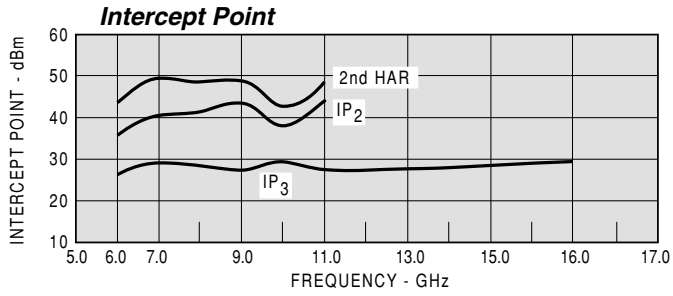
DIMENSIONS ARE IN INCHES

TYPICAL PERFORMANCE









TYPICAL AUTOMATIC TEST DATA

Model: A2CP16212 Vcc=+5V Icc=86.46

FREQ GHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5.0	2.12	1.64	17.44	6.66	0.57	-57.01
5.5	1.47	1.42	19.13	-91.10	0.53	-52.91
6.0	1.53	1.40	19.89	174.36	0.52	-52.50
6.5	1.51	1.40	19.80	86.13	0.47	-51.92
7.0	1.31	1.25	19.32	4.08	0.44	-51.95
7.5	1.21	1.13	19.03	-72.04	0.41	-50.54
8.0	1.13	1.23	19.21	-146.87	0.42	-50.84
8.5	1.08	1.36	19.37	137.36	0.42	-49.30
9.0	1.22	1.41	19.25	62.39	0.41	-47.96
9.5	1.64	1.31	18.89	-9.83	0.39	-49.27
10.0	1.62	1.20	18.84	-79.94	0.38	-48.43
10.5	1.47	1.21	19.17	-151.31	0.40	-45.97
11.5	1.25	1.12	19.09	65.07	0.39	-45.22
12.0	1.38	1.14	19.15	-5.44	0.39	-44.34
12.5	1.25	1.18	19.22	-76.23	0.39	-42.61
13.0	1.07	1.13	19.54	-147.48	0.40	-41.21
13.5	1.16	1.20	19.79	139.21	0.40	-40.26
14.0	1.62	1.33	19.70	66.07	0.40	-39.64
14.5	1.87	1.25	19.93	-7.57	0.41	-38.32
15.0	1.75	1.10	19.88	-84.73	0.43	-36.89
15.5	1.53	1.09	19.55	-161.04	0.43	-36.93
16.0	1.18	1.31	19.05	121.82	0.43	-38.34
16.5	1.18	1.51	18.21	43.88	0.44	-41.41
17.0	1.47	1.74	17.04	-32.19	0.43	-52.57

LINEAR S-PARAMETERS

Model: A2CP16212 Vcc=+5V Icc=86.46

FREQ.	S11		S21		S12		S22	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG.
5.0	0.35	149.89	7.23	6.08	0.00	-157.92	0.25	-44.51
5.5	0.20	127.37	8.91	-91.57	0.00	104.88	0.16	-98.96
6.0	0.21	106.87	9.81	173.73	0.00	30.81	0.15	-143.12
6.5	0.21	56.00	9.73	84.99	0.00	-50.68	0.15	159.27
7.0	0.15	-8.32	9.21	2.80	0.00	-121.79	0.11	88.07
7.5	0.10	-83.62	8.90	-73.42	0.00	157.56	0.08	-15.45
8.0	0.06	-175.10	9.12	-148.28	0.00	95.19	0.10	-114.10
8.5	0.02	67.13	9.33	135.56	0.00	8.70	0.13	-179.04
9.0	0.11	-109.61	9.22	60.18	0.00	-58.37	0.13	141.52
9.5	0.21	-178.39	8.81	-12.40	0.00	-127.82	0.09	122.84
10.0	0.22	123.76	8.72	-82.52	0.00	171.38	0.07	108.34
10.5	0.17	54.43	9.04	-153.87	0.00	101.37	0.07	75.38
11.0	0.12	-48.04	9.12	133.27	0.00	41.28	0.07	21.77
11.5	0.14	-143.88	9.00	62.17	0.01	-27.81	0.07	-61.28
12.0	0.14	152.65	9.04	-8.85	0.01	-89.71	0.08	-143.40
12.5	0.08	102.67	9.08	-79.48	0.01	-154.20	0.08	171.09
13.0	0.01	-73.45	9.40	-150.69	0.01	137.59	0.05	177.94
13.5	0.11	-124.97	9.68	135.90	0.01	67.67	0.10	-161.73
14.0	0.22	-163.85	9.66	62.51	0.01	-2.38	0.13	166.75
14.5	0.31	145.10	9.85	-11.43	0.01	-64.54	0.10	129.25
15.0	0.30	93.27	9.88	-87.74	0.01	-135.09	0.06	125.22
15.5	0.18	46.75	9.59	-163.99	0.01	155.42	0.11	140.69
16.0	0.02	15.36	9.13	118.28	0.01	87.78	0.17	120.77
16.5	0.12	141.37	8.38	39.59	0.01	26.13	0.21	87.12
17.0	0.16	78.11	7.37	-37.16	0.00	8.83	0.21	36.40