

# A2CP14212 8.0-14.0 GHz COUGARPAK® AMPLIFIER

Typical Values	A2CP14212
High Gain .....	21.0 dB
Low Noise Figure .....	2.8 dB
High Reverse Isolation .....	43.0 dB
Medium Output Power .....	+15.5 dBm
High Performance Thin Film	
High Frequency Two-stage CougarPak® Package	

## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	8.0-14.0 GHz	8.0-14.0 GHz	8.0-14.0 GHz
Small Signal Gain (Min.)	21.0 dB	20.5 dB	19.5 dB
Gain Flatness (Max.)	±0.7 dB	±1.0 dB	±1.0 dB
Noise Figure (Max.)	2.8 <sup>^</sup> dB	3.8 <sup>^</sup> dB	4.2 <sup>^</sup> dB
SWR (Max.) Input/Output	1.5:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+15.5 <sup>†</sup> dBm	+15.0 <sup>†</sup> dBm	+14.0 <sup>†</sup> dBm
Reverse Isolation	43.0 dB	—	—
DC Current (Max.)	85 mA	93 mA	95 mA

\* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.  
<sup>^</sup> 1.0 dB higher below 10.0 GHz. <sup>†</sup> 0.5 dBm lower below 9.0 GHz.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C	A2CP14212
Second Order Harmonic Intercept Point .....	+46 dBm
Second Order Two Tone Intercept Point .....	+40 dBm
Third Order Two Tone Intercept Point .....	+28 dBm

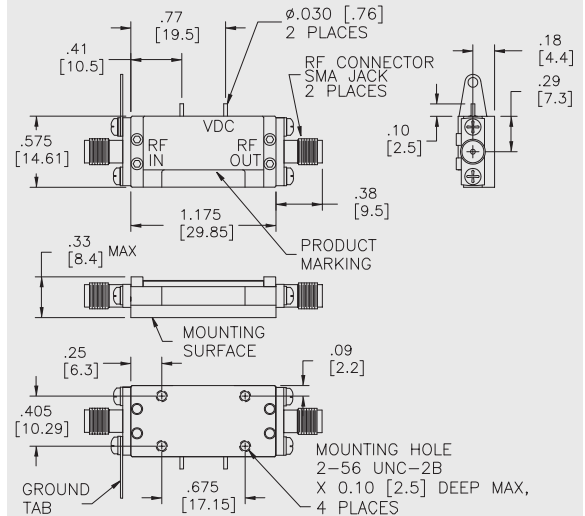
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-65 to +150 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+8 Volts
Maximum Continuous RF Input Power .....	+0.5 dBm
Burn-in Temperature .....	+110 °C
Thermal Resistance <sup>1</sup> (θjc) .....	+141 °C/Watt
Junction Temperature Rise Above Case (Tjc) .....	+60 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

## A2CP14212

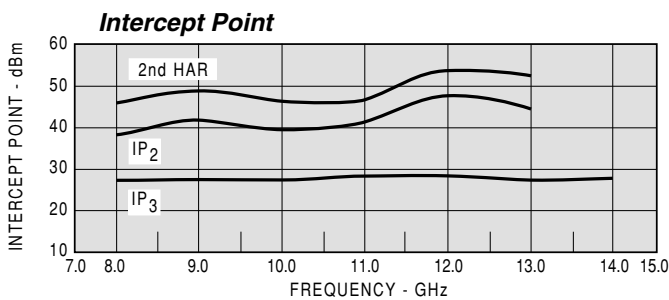
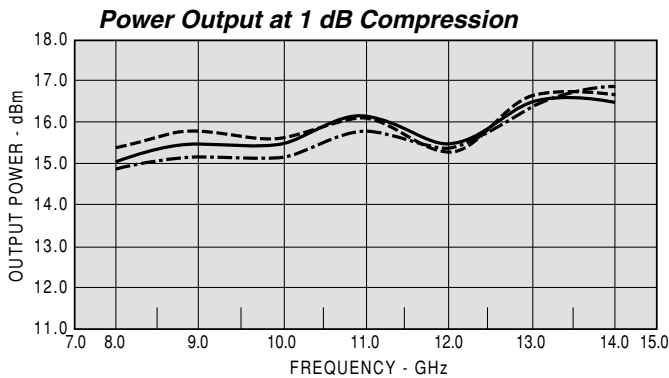
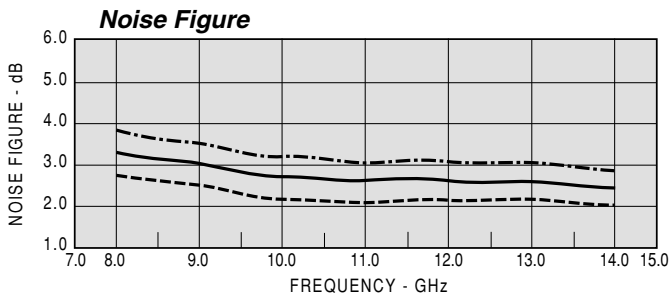
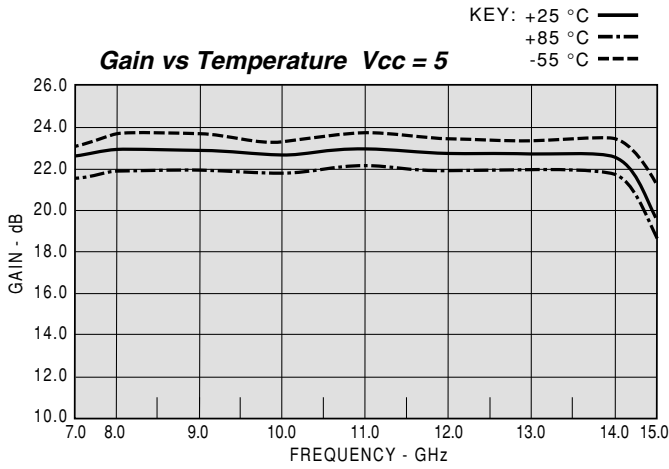
### High Frequency CougarPak® SMA Package (two-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: A2CP14212 Vcc=+5V Icc=80.44

FREQ. (GHZ)	SWR IN	SWR OUT	GAIN (DB)	PHASE (DEG)	DELAY (NSEC)	REV/ISO (DB)
7.0	1.31	1.32	22.45	-98.26	0.31	-49.48
7.5	1.23	1.16	22.69	-154.07	0.31	-48.65
8.0	1.22	1.16	22.98	149.34	0.32	-47.71
8.5	1.24	1.25	22.96	93.81	0.30	-47.27
9.0	1.28	1.37	22.84	39.98	0.30	-46.33
9.5	1.33	1.41	22.59	-13.03	0.29	-45.19
10.0	1.49	1.40	22.42	-63.58	0.28	-44.69
10.5	1.52	1.47	22.78	-114.07	0.30	-43.92
11.0	1.44	1.48	22.96	-167.90	0.31	-43.21
11.5	1.37	1.38	22.74	139.48	0.28	-43.11
12.0	1.16	1.35	22.78	86.65	0.29	-42.78
12.5	1.18	1.50	22.67	32.24	0.30	-41.46
13.0	1.20	1.68	22.56	-19.35	0.29	-41.25
13.5	1.04	1.61	22.81	-75.52	0.32	-40.50
14.0	1.39	1.47	22.29	-134.58	0.31	-39.79
14.5	1.61	1.33	21.65	168.14	0.32	-40.28
15.0	1.61	1.23	20.74	109.38	0.32	-39.73

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LINEAR S-PARAMETERS

FREQ. (GHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7.0	0.12	20.19	13.28	21.08	0.00	-125.88	0.13	134.93
7.5	0.07	-29.12	13.58	-51.99	0.00	169.99	0.06	50.78
8.0	0.08	-61.77	14.10	-125.45	0.00	95.32	0.06	-44.56
8.5	0.12	-108.26	14.14	161.14	0.00	29.69	0.10	-96.05
9.0	0.13	-146.65	13.57	89.81	0.00	-36.07	0.14	-133.25
9.5	0.14	-163.82	13.07	21.12	0.01	-102.95	0.17	-164.73
10.0	0.20	172.80	13.11	-46.14	0.01	-163.22	0.19	166.94
10.5	0.24	138.60	13.82	-114.58	0.01	131.13	0.20	138.68
11.0	0.22	107.28	14.15	174.27	0.01	63.89	0.20	106.39
11.5	0.18	68.29	13.80	103.46	0.01	-7.77	0.18	73.66
12.0	0.09	3.10	13.50	33.31	0.01	-72.94	0.18	42.96
12.5	0.05	-153.84	13.76	-36.44	0.01	-140.09	0.20	-6.21
13.0	0.10	119.32	13.73	-109.35	0.01	153.04	0.20	-74.84
13.5	0.03	69.20	13.12	178.93	0.01	87.08	0.20	-146.07
14.0	0.13	163.42	12.90	106.51	0.01	19.57	0.16	154.09
14.5	0.24	98.39	12.45	29.38	0.01	-49.43	0.09	119.72
15.0	0.28	45.07	11.01	-47.80	0.01	-120.91	0.06	109.33