

A2CP14216 8.0-14.0 GHz COUGARPAK® AMPLIFIER

Typical Values	A2CP14216
High Gain	21.0 dB
High Reverse Isolation	45.0 dB
High Performance Thin Film	
High Frequency Two-stage CougarPak® SMA 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	20.0 dB	19.5 dB
Gain Flatness (Max.)	±0.7 dB	±1.0 dB	±1.0 dB
Noise Figure (Max.)	4.3 dB	5.0 dB	5.0 dB
SWR (Max.) Input/Output	1.7:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+19.0 dBm	+18.0 dBm	+17.0 dBm
Reverse Isolation	45 dB	—	—
DC Current (Max.)	130 mA	135 mA	140 mA

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

INTERMODULATION PERFORMANCE

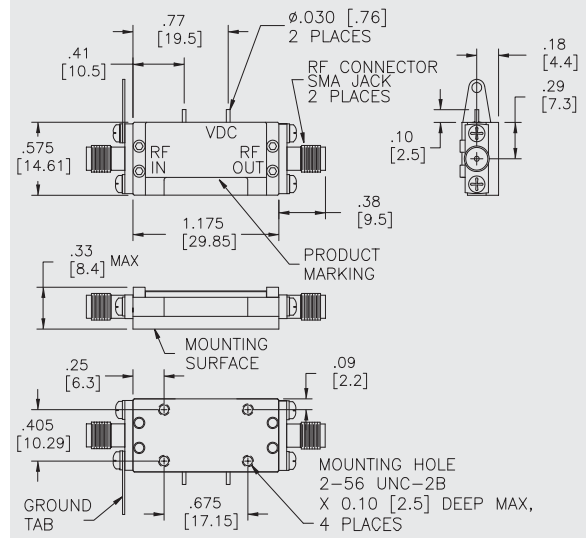
Typical @ 25 °C @ 10.0 GHz	A2CP14216
Second Order Harmonic Intercept Point	+38 dBm
Second Order Two Tone Intercept Point	+32 dBm
Third Order Two Tone Intercept Point	+27 dBm

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+8.0 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	+80 °C
Thermal Resistance (θjc)	+31.7 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+50 °C

A2CP14216

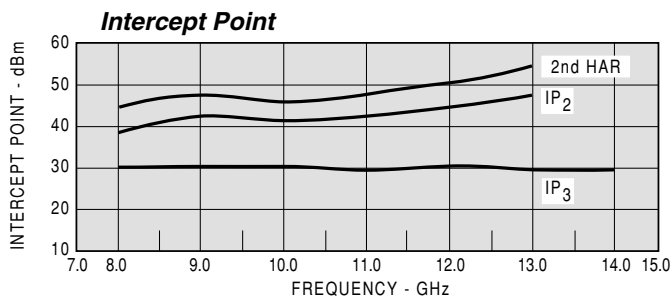
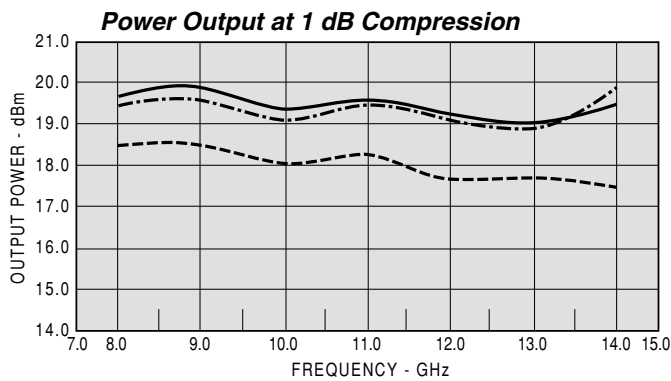
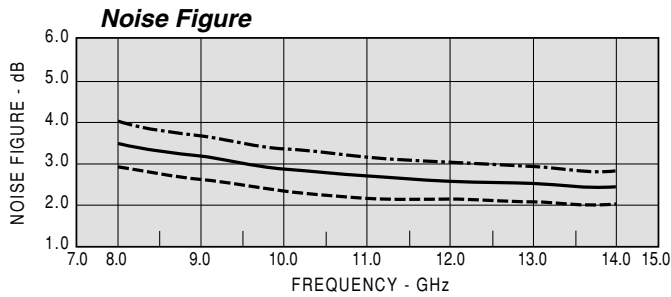
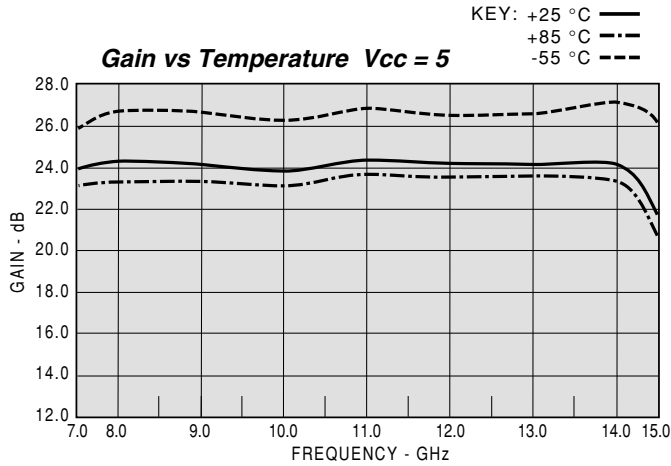
High Frequency CougarPak® SMA Package (two-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: A2CP14216 Vcc=+5V Icc=132.44

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHZ	IN	OUT	DB	DEG	NSEC	DB
7.0	1.59	1.26	23.93	-99.87	0.31	-53.28
7.5	1.49	1.14	24.16	-156.45	0.31	-54.47
8.0	1.50	1.17	24.26	146.55	0.31	-52.33
8.5	1.53	1.29	24.14	91.84	0.30	-51.19
9.0	1.55	1.42	24.05	38.35	0.30	-51.03
9.5	1.62	1.43	23.77	-14.07	0.28	-49.75
10.0	1.71	1.35	23.77	-63.74	0.27	-49.07
10.5	1.58	1.28	24.21	-115.66	0.30	-47.77
11.0	1.35	1.19	24.33	-169.37	0.30	-47.39
11.5	1.18	1.06	24.21	137.71	0.29	-46.58
12.0	1.16	1.11	24.16	84.98	0.29	-45.91
12.5	1.28	1.08	24.24	32.11	0.30	-46.31
13.0	1.52	1.05	24.32	-21.85	0.30	-44.60
13.5	1.73	1.05	24.38	-78.05	0.32	-44.28
14.0	1.73	1.01	24.16	-136.77	0.33	-43.31
14.5	1.46	1.06	23.43	163.54	0.34	-43.17
15.0	1.21	1.23	22.03	104.51	0.32	-43.82

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LINEAR S-PARAMETERS

FREQ	S11		S21		S12		S22	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7.0	0.20	-3.20	15.61	19.60	0.00	-127.59	0.11	141.23
7.5	0.17	-49.41	15.95	-54.15	0.00	156.60	0.06	59.40
8.0	0.19	-83.18	16.21	-128.00	0.00	101.63	0.06	-41.93
8.5	0.22	-120.78	16.05	159.15	0.00	32.39	0.12	-104.23
9.0	0.22	-153.34	15.37	88.55	0.00	-29.37	0.17	-151.04
9.5	0.24	-178.02	14.92	21.03	0.00	-90.98	0.20	168.05
10.0	0.28	148.82	15.34	-46.15	0.00	-172.68	0.18	131.85
10.5	0.27	106.08	16.20	-116.28	0.00	136.28	0.15	102.79
11.0	0.17	66.86	16.35	172.53	0.00	71.99	0.10	79.78
11.5	0.10	43.88	16.06	102.43	0.00	0.98	0.05	69.33
12.0	0.09	8.10	15.95	32.39	0.00	-60.78	0.06	110.21
12.5	0.11	-47.08	15.88	-37.11	0.00	-123.50	0.10	85.30
13.0	0.16	-109.93	16.20	-107.82	0.01	162.21	0.08	49.52
13.5	0.24	-164.64	16.34	178.66	0.01	92.52	0.04	28.23
14.0	0.25	144.57	16.00	102.88	0.01	30.86	0.03	24.65
14.5	0.20	88.84	14.81	25.73	0.01	-37.44	0.04	-35.24
15.0	0.14	27.05	12.70	-50.46	0.01	-115.82	0.07	-101.53