

A2CP14225

8.0 TO 14.0 GHz, HALF WATT COUGARPAK® AMPLIFIER

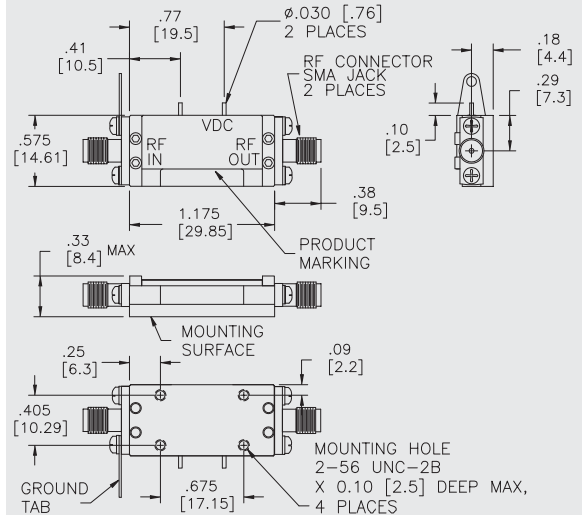
Typical Values

High Output Power	+28.0 dBm
High Third Order I.P.	+40.0 dBm
High Second Order I.P.	+54.0 dBm
High Reverse Isolation	45.0 dB
High Performance Thin Film High Frequency Two-stage CougarPak®	

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



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.)	18.0 dB	16.5† dB	15.0† dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	4.5 dB [^]	5.0 [^] dB	6.0 [^] dB
SWR (Max.) Input/Output	<1.6:1	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+28.0 dBm	+27.0 dBm	+26.5 dBm
Reverse Isolation	45.0 dB	—	—
DC Current (Max.)	330 mA	340 mA	350 mA

* Measured in a 50-ohm system at +12 Vdc unless otherwise specified.
[^] 0.5 dB higher below 9.0 GHz, and above 13.0 GHz. † 0.5 dB lower above 13.0 GHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

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Second Order Harmonic Intercept Point	+60 dBm
Second Order Two Tone Intercept Point	+54 dBm
Third Order Two Tone Intercept Point	+40 dBm

ABSOLUTE MAXIMUM RATINGS

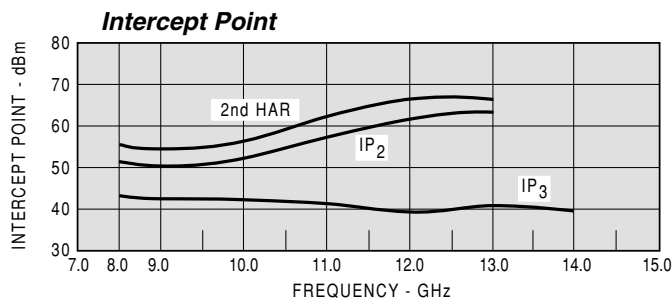
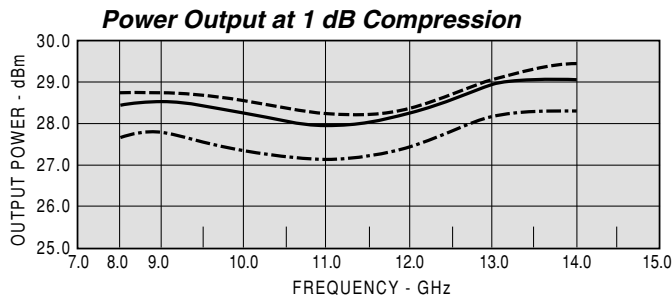
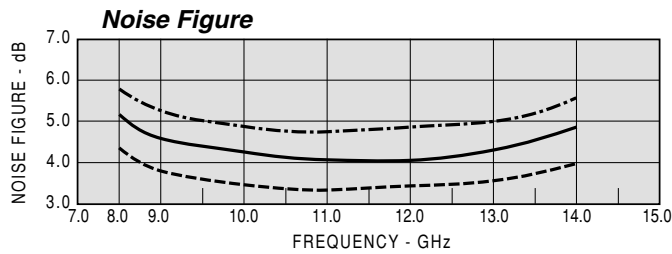
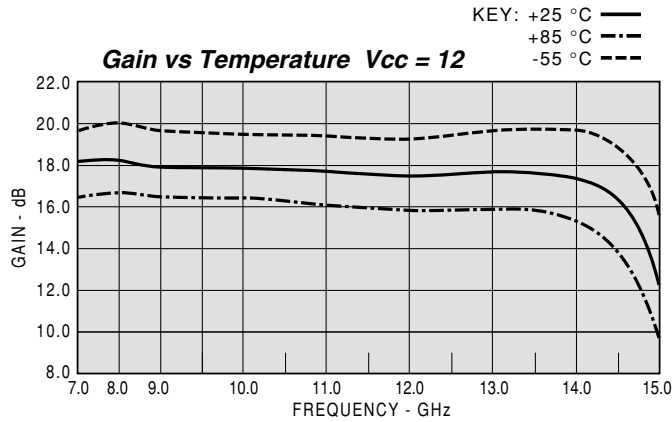
Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+85 °C
Maximum DC Voltage	+14 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	+17 dBm
Maximum Peak Power (3 μsec Max.)	+20 dBm
Burn-in Temperature	+85 °C
Thermal Resistance¹ (θjc)	+13.8 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+53.7 °C

¹ Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: A2CP14225 Vcc= +12V Icc= 329.70

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHZ	IN	OUT	DB	DEG	NSEC	DB
7.5	1.89	1.33	18.10	-127.93	0.29	-62.60
8.0	1.72	1.30	18.03	178.96	0.27	-55.31
8.5	1.69	1.33	17.98	126.68	0.28	-50.74
9.0	1.64	1.35	17.93	77.66	0.27	-51.07
9.5	1.48	1.37	17.85	28.17	0.28	-49.68
10.0	1.25	1.36	17.93	-21.55	0.28	-48.05
10.5	1.07	1.35	17.91	-71.14	0.27	-47.67
11.0	1.15	1.33	17.86	-121.16	0.28	-45.82
11.5	1.27	1.35	17.88	-172.30	0.29	-42.14
12.0	1.45	1.41	17.70	136.22	0.28	-42.45
12.5	1.39	1.36	17.64	85.80	0.28	-44.30
13.0	1.20	1.21	17.81	32.01	0.32	-42.93
13.5	1.34	1.17	17.76	-26.72	0.33	-41.11
14.0	1.45	1.20	17.18	-86.96	0.34	-40.14
14.5	1.35	1.08	16.14	-154.84	0.40	-39.19

Model: A2CP14225 Vcc= +12V Icc= 329.70

LINEAR S-PARAMETERS

FREQ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
7.5	0.32	-35.59	8.13	12.54	0.00	-85.45	0.12	31.19
8.0	0.27	-52.62	8.04	-32.01	0.00	-105.42	0.11	21.70
8.5	0.28	-66.43	8.00	-74.47	0.00	-145.67	0.11	7.70
9.0	0.26	-86.51	7.95	-114.69	0.00	167.74	0.14	-8.18
9.5	0.20	-108.94	7.85	-154.6	0.00	118.70	0.14	-14.18
10.0	0.11	-144.17	7.91	165.42	0.00	117.35	0.14	-10.86
10.5	0.04	147.29	7.90	125.01	0.00	72.72	0.14	-3.34
11.0	0.08	45.09	7.88	83.84	0.01	50.73	0.12	2.81
11.5	0.12	43.90	7.78	42.61	0.01	8.43	0.12	16.14
12.0	0.20	31.54	7.42	0.95	0.01	-43.99	0.15	18.64
12.5	0.18	8.49	7.56	-40.07	0.01	-79.96	0.14	11.55
13.0	0.10	16.63	7.91	-83.82	0.01	-109.78	0.09	23.07
13.5	0.16	25.32	7.74	-133.8	0.01	-151.59	0.07	57.18
14.0	0.18	-33.62	7.22	175.26	0.01	-178.97	0.07	66.21
14.5	0.16	-53.91	6.39	116.74	0.01	131.27	0.02	73.73
15.0	0.27	-74.22	4.47	57.8	0.01	64.59	0.02	-98.50