

A3CP7029 3.0 TO 7.0 GHz COUGARPAK® AMPLIFIER

<i>Typical Values</i>	A3CP7029
High Gain	+28.5 dB
High Output Power	0.5 Watt
Low Noise	2.8 dB
High Reverse Isolation	48 dB
Ultra Broad Bandwidth	3.0-7.0 GHz
High Performance Thin Film Standard Three-stage CougarPak® Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50° C	-55 to +85° C
Frequency (Min.)	3.0-7.0 GHz	3.0-7.0 GHz	3.0-7.0 GHz
Small Signal Gain (Min.)	28.5 dB	26.5 dB	25.5 dB
Gain Flatness (Max.)	±0.8 dB	±1.0 dB	±1.2 dB
Noise Figure (Max.)	2.8 dB	4.0 dB	4.5 dB
SWR (Max.)	Input/Output	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	3.0-4.0 GHz 4.0-7.0 GHz	+23.0 dBm +26.5 dBm	+22.0 dBm +26.0 dBm
Reverse Isolation	48 dB	—	—
DC Current (Max.)	411 mA	430 mA	450 mA

* Measured in a 50-ohm system at +12 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

<i>Typical @ 25° C; 4.0 GHz</i>	A3CP7029
Second Order Harmonic Intercept Point	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+35 dBm

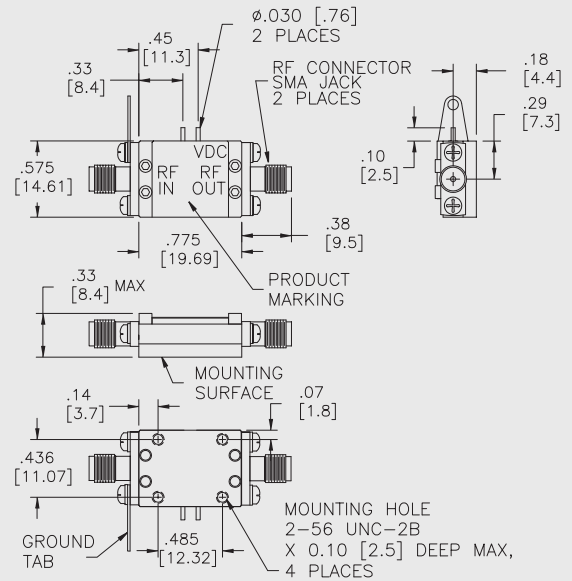
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125° C
Maximum Case Temperature	+85° C
Maximum DC Voltage	+14 Volts
Maximum Continuous RF Input Power	+10.0 dBm
Maximum Short Term Input Power (1 Minute Max.)	+12.0 dBm
Maximum Peak Power (3 µsec Max.)	+15.0 dBm
Burn-in Temperature	+50° C
Thermal Resistance¹ (θjc)	+14.2° C/Watt
Junction Temperature Rise Above Case (Tjc)	+72° C

¹ Thermal resistance is based on total power dissipation.

A3CP7029

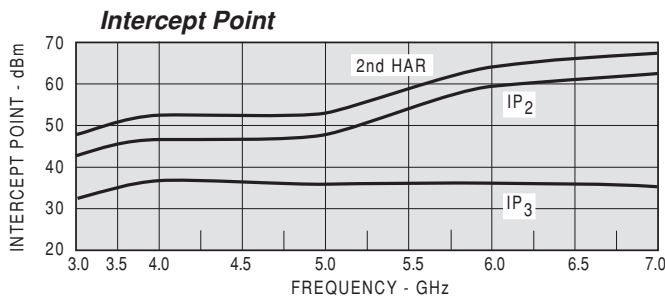
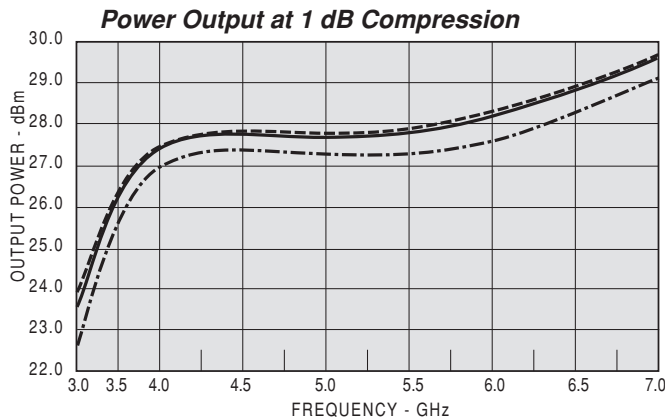
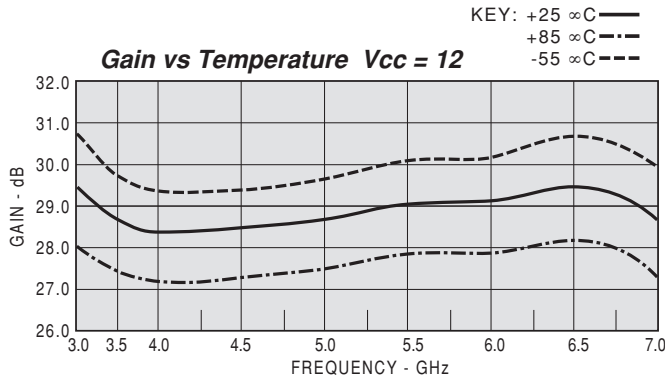
CougarPak® SMA Package (three-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: A3CP7029 Vcc=+12V Icc=411.40

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHz	IN	OUT	DB	DEG	NSEC	DB
3.0	1.37	1.30	29.70	-28	0.77	-48.90
3.2	1.23	1.21	29.34	-80	0.71	-45.50
3.4	1.23	1.13	28.96	-130	0.68	-41.50
3.6	1.34	1.07	28.69	-178	0.65	-56.40
3.8	1.40	1.05	28.57	135	0.65	-48.00
4.0	1.37	1.07	28.50	89	0.64	-59.60
4.2	1.30	1.13	28.54	45	0.62	-61.00
4.4	1.15	1.17	28.53	0	0.63	-53.00
4.6	1.07	1.18	28.62	-45	0.62	-50.30
4.8	1.07	1.18	28.70	-88	0.60	-46.40
5.0	1.04	1.17	28.87	-133	0.61	-46.80
5.2	1.16	1.17	29.21	-177	0.62	-53.50
5.4	1.45	1.32	29.24	134	0.67	-52.80
5.6	1.60	1.44	29.08	89	0.62	-44.10
5.8	1.70	1.45	28.95	46	0.61	-43.40
6.0	1.61	1.37	29.10	1	0.62	-47.10
6.2	1.41	1.29	29.47	-45	0.63	-49.00
6.4	1.35	1.30	29.51	-94	0.69	-53.90
6.6	1.52	1.21	29.41	-144	0.68	-45.90
6.8	1.62	1.10	29.17	167	0.69	-42.70
7.0	1.44	1.22	28.80	117	0.70	-45.10

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LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
3.0	0.16	-51.4	30.55	-27.6	0.004	-26.1	0.13	178.5
3.2	0.10	-95.8	29.32	-80.4	0.005	79.6	0.09	154.5
3.4	0.10	-122.1	28.04	-130.4	0.008	47.3	0.06	139.8
3.6	0.15	-151.0	27.21	-177.9	0.002	-108.7	0.04	149.0
3.8	0.17	177.8	26.82	135.0	0.004	-47.5	0.02	170.5
4.0	0.16	145.2	26.62	89.5	0.001	143.3	0.03	-138.9
4.2	0.13	120.3	26.72	44.7	0.001	-42.7	0.06	-146.7
4.4	0.07	101.0	26.71	0.2	0.002	-138.5	0.08	-165.3
4.6	0.03	100.3	26.99	-44.8	0.003	-167.3	0.08	-177.2
4.8	0.03	122.2	27.21	-88.1	0.005	141.5	0.08	167.6
5.0	0.02	76.8	27.78	-132.5	0.005	168.7	0.08	172.7
5.2	0.08	-50.4	29.40	-177.1	0.002	97.2	0.08	170.9
5.4	0.18	-124.5	28.97	134.2	0.002	39.5	0.14	169.0
5.6	0.23	-164.0	28.45	88.9	0.006	20.8	0.18	139.8
5.8	0.26	164.4	28.04	45.7	0.007	-77.8	0.18	112.7
6.0	0.24	138.7	28.49	0.5	0.004	-132.3	0.16	92.4
6.2	0.17	124.2	29.76	-45.1	0.004	-75.0	0.13	84.6
6.4	0.15	140.6	29.90	-93.8	0.002	154.0	0.13	75.3
6.6	0.21	137.5	29.56	-143.8	0.005	162.4	0.10	42.1
6.8	0.24	113.4	28.74	166.5	0.007	120.2	0.05	-42.3
7.0	0.18	90.3	27.55	116.6	0.006	53.0	0.10	-158.2