

# A2CP12028 6.0 TO 12.0 GHz COUGARPAK® AMPLIFIER

Typical Values	A2CP12028
High Output Power .....	+24.0 dBm
High Gain .....	24.5 dB
Low Noise Figure .....	3.3 dB
Two-stage CougarPak® SMA Package	

## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	6.0-12.0 GHz	6.0-12.0 GHz	6.0-12.0 GHz
Small Signal Gain (Min.)	24.5 dB	23.0 dB	22.5 dB
Gain Flatness (Max.)	±1.2 dB	±1.5 dB	±1.6 dB
Noise Figure (Max.)	3.3 dB	3.8 dB	4.5 dB
SWR (Max.)	Input/Output	1.8:1	1.9:1
Power Output (Min.) @ 1dB comp.	6-7 GHz	+23.0 dBm	+21.0 dBm
	7-9 GHz	+24.0 dBm	+22.5 dBm
	9-12 GHz	+25.0 dBm	+23.5 dBm
Reverse Isolation	45.0 dB	—	—
DC Current (Max.)	162 mA	170 mA	175 mA

\* Measured in a 50-ohm system at +10 Vdc unless otherwise specified.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C	6-9 GHz	9-12 GHz
Second Order Harmonic Intercept Point .....	+58 dBm	+66 dBm
Second Order Two Tone Intercept Point .....	+52 dBm	+60 dBm
Third Order Two Tone Intercept Point .....	+34 dBm	+35 dBm

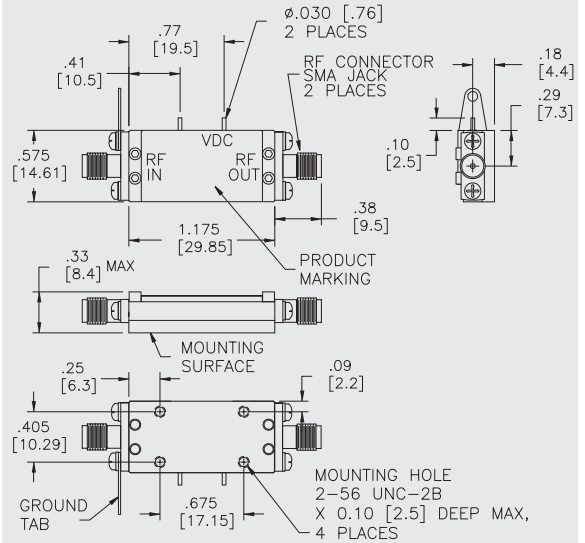
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature .....	-65 to +150 °C
Maximum Case Temperature .....	+125 °C
Maximum DC Voltage .....	+12 Volts
Maximum Continuous RF Input Power .....	+20 dBm
Maximum Short Term Input Power (1 Minute Max.) .....	+23 dBm
Maximum Peak Power (3 µsec Max.) .....	+23 dBm
Burn-in Temperature .....	+125 °C
Thermal Resistance <sup>1</sup> (θ <sub>jc</sub> ) .....	+14.2 °C/Watt
Junction Temperature Rise Above Case (T <sub>jc</sub> ) .....	+22.0 °C

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

## A2CP12028

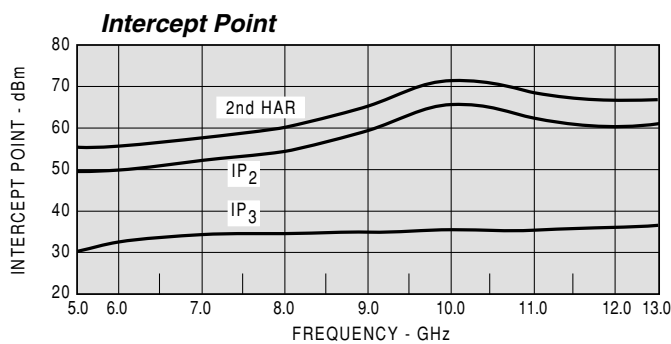
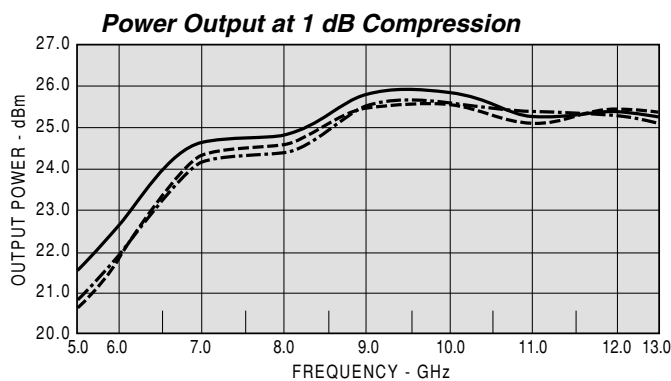
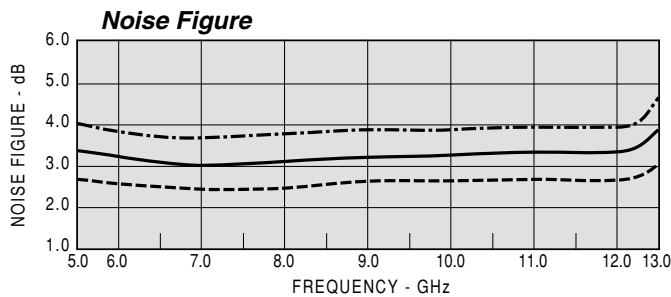
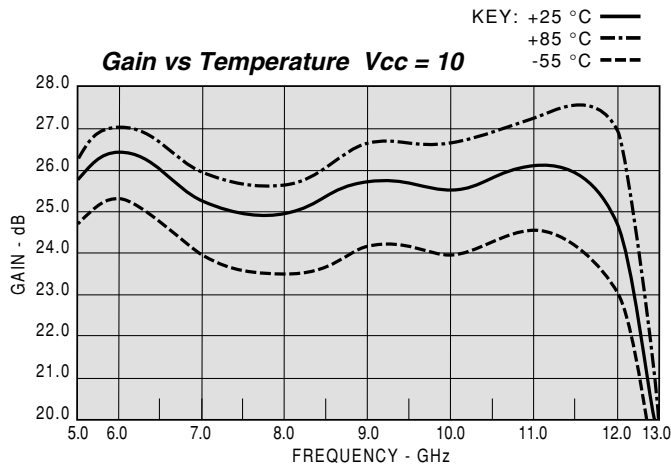
### CougarPak® SMA Package (two-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: A2CP12028 Vcc=+10V Icc=159.20

FREQ. (GHz)	IN (SWR)	OUT (SWR)	GAIN (DB)	PHASE (DEG)	DELAY (NSEC)	REV/ISO (DB)
5.0	2.07	1.71	25.51	-174.93	0.31	-55.28
5.5	1.44	1.54	25.85	132.41	0.29	-52.51
6.0	1.10	1.23	26.34	78.42	0.31	-53.64
6.5	1.07	1.29	25.97	25.40	0.27	-54.55
7.0	1.18	1.39	25.10	-20.55	0.25	-55.62
7.5	1.16	1.33	24.68	-64.25	0.24	-56.16
8.0	1.18	1.21	24.84	-104.38	0.24	-46.75
8.5	1.27	1.11	25.32	-147.85	0.25	-47.18
9.0	1.32	1.11	25.69	165.38	0.26	-47.82
9.5	1.31	1.06	25.55	118.61	0.25	-47.46
10.0	1.32	1.04	25.40	73.12	0.26	-47.41
10.5	1.28	1.15	25.51	27.61	0.26	-47.13
11.0	1.23	1.17	26.01	-21.89	0.29	-46.11
11.5	1.41	1.28	26.02	-79.92	0.34	-43.74
12.0	1.26	1.32	24.78	-139.07	0.33	-42.95
12.5	1.09	1.30	22.40	159.70	0.33	-46.38
13.0	1.47	1.42	18.76	101.94	0.35	-49.49

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LINEAR S-PARAMETERS

FREQ. (GHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	0.34	93.04	18.65	-175.97	0.00	32.99	0.26	-119.97
5.5	0.18	58.99	19.42	131.21	0.00	-11.19	0.21	-163.27
6.0	0.04	24.57	20.57	77.14	0.00	-80.39	0.11	174.17
6.5	0.03	157.74	19.66	23.96	0.00	-120.48	0.13	-161.67
7.0	0.08	135.18	17.76	-22.20	0.00	-152.04	0.16	174.01
7.5	0.07	88.78	16.92	-65.83	0.00	179.44	0.14	144.01
8.0	0.08	17.06	17.26	-106.18	0.00	142.55	0.09	125.63
8.5	0.12	-44.23	18.24	-149.73	0.00	120.78	0.06	92.70
9.0	0.13	-82.63	19.01	163.42	0.00	95.73	0.05	29.62
9.5	0.13	-97.17	18.78	116.46	0.00	41.10	0.03	-38.11
10.0	0.14	-121.37	18.41	70.84	0.00	13.04	0.01	22.37
10.5	0.13	-153.05	18.57	24.75	0.00	-31.21	0.07	58.84
11.0	0.11	177.76	19.67	-24.35	0.00	-77.63	0.07	66.20
11.5	0.17	136.78	19.69	-82.39	0.01	-143.93	0.12	78.89
12.0	0.11	91.42	17.15	-141.82	0.00	159.29	0.13	76.40
12.5	0.04	-149.18	12.99	156.64	0.00	114.59	0.14	113.93
13.0	0.19	-163.27	8.56	99.10	0.00	66.23	0.16	124.43