

ACP12015

6.0 TO 12.0 GHz COUGARPAK® AMPLIFIER

Typical Values

Medium Output Power	+19.5 dBm
Low Noise Figure	2.5 dB
Medium Gain	12.5 dB
High Third Order I.P.	+32 dBm
High Performance Thin Film Standard Single-stage CougarPak® Package	

ACP12015

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.)	12.5 dB	11.5 dB	11.0 dB
Gain Flatness (Max.)	±0.6 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	2.5 dB	3.0 dB	3.5 dB
SWR (Max.) Input/Output	<1.5:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+19.5 dBm	+18.0 dBm	+17.5 dBm
Reverse Isolation	25.0 dB	—	—
DC Current (Max.)	75 mA	77 mA	80 mA

* Measured in a 50-ohm system at +8 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 9.0 GHz

Second Order Harmonic Intercept Point	+48 dBm
Second Order Two Tone Intercept Point	+43 dBm
Third Order Two Tone Intercept Point	+32 dBm

ACP12015

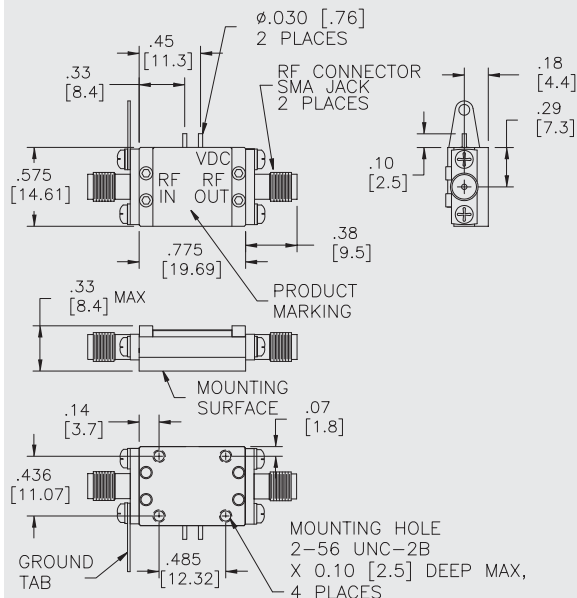
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+9 Volts
Maximum Continuous RF Input Power	+20.0 dBm
Maximum Short Term Input Power (1 Minute Max.)	+23.0 dBm
Maximum Peak Power (3 µsec Max.)	+27.0 dBm
Burn-in Temperature	+125°C
Thermal Resistance ¹ (θjc)	+12.1 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+7.3 °C

¹ Thermal resistance is based on total power dissipation.

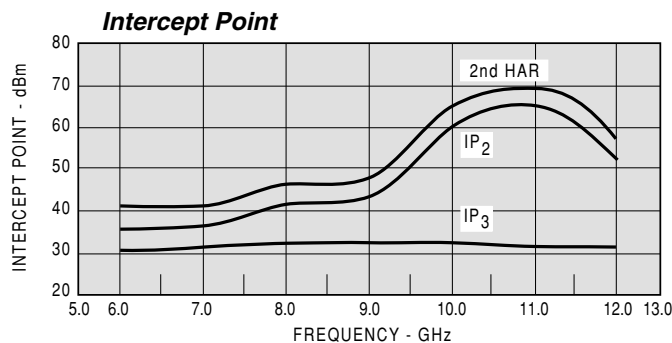
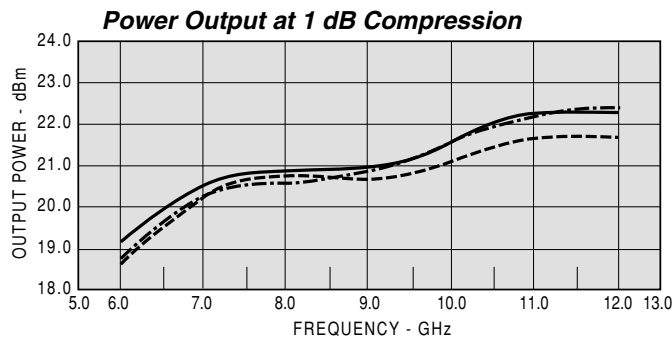
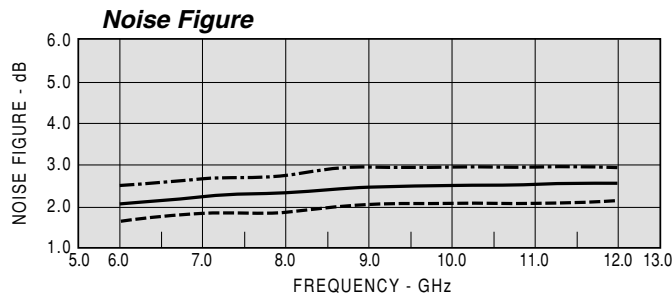
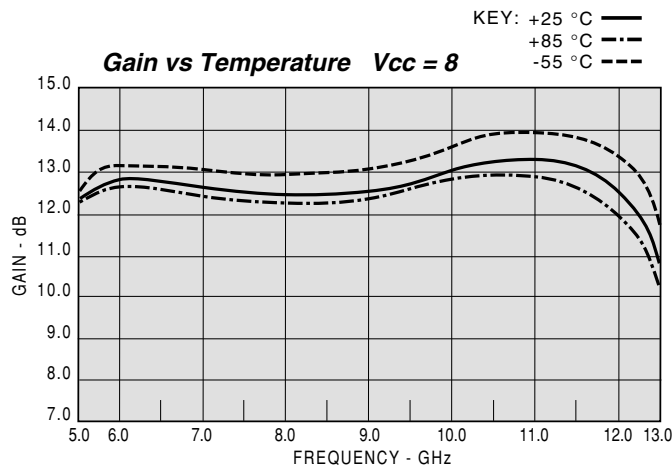
ACP12015

CougarPak® SMA Package (single-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: ACP12015			$V_{cc}=+8V$			$I_{cc}=74.60$	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
GHZ	IN	OUT	DB	DEG	NSEC	DB	
5.0	2.04	1.91	12.33	-77.48	0.26	-30.95	
5.5	1.39	1.66	12.64	-124.66	0.25	-29.95	
6.0	1.12	1.41	12.81	-169.96	0.25	-29.17	
6.5	1.09	1.17	12.83	146.03	0.24	-28.44	
7.0	1.12	1.30	12.75	102.96	0.24	-27.72	
7.5	1.14	1.41	12.64	62.01	0.22	-27.33	
8.0	1.16	1.19	12.74	20.98	0.23	-26.88	
8.5	1.21	1.07	12.79	-20.16	0.23	-26.21	
9.0	1.27	1.13	12.89	-61.12	0.22	-25.50	
9.5	1.35	1.02	13.02	-102.58	0.23	-24.75	
10.0	1.42	1.25	13.11	-144.80	0.23	-23.85	
10.5	1.38	1.45	13.37	172.45	0.25	-23.14	
11.0	1.26	1.56	13.38	127.51	0.26	-22.72	
11.5	1.19	1.47	13.03	80.73	0.26	-22.22	
12.0	1.18	1.26	12.49	35.38	0.26	-22.43	
12.5	1.20	1.21	11.66	-10.19	0.25	-22.71	
13.0	1.24	1.10	10.68	-55.10	0.25	-23.09	

Model: ACP12015		LINEAR S-PARAMETERS							
FREQ.		S11		S21		S12		S22	
				Vcc=+8V				Icc=74.60	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
5.0	0.36	-125.90	4.27	-77.05	0.03	-148.40	0.32	-55.55	
5.5	0.17	172.36	4.43	-124.43	0.03	167.44	0.26	-106.07	
6.0	0.05	95.16	4.50	-169.81	0.04	124.14	0.17	-171.33	
6.5	0.03	-32.97	4.52	146.28	0.04	82.84	0.10	86.73	
7.0	0.05	-94.13	4.47	103.29	0.04	43.33	0.13	-12.73	
7.5	0.05	-124.81	4.43	62.47	0.05	5.59	0.14	-84.89	
8.0	0.06	-143.75	4.49	21.45	0.05	-32.31	0.13	-139.78	
8.5	0.09	-158.87	4.54	-20.09	0.05	-68.07	0.06	-168.21	
9.0	0.12	177.82	4.58	-61.07	0.06	-105.28	0.03	-110.36	
9.5	0.15	145.43	4.65	-102.71	0.06	-141.29	0.06	-91.67	
10.0	0.18	105.20	4.70	-145.22	0.07	179.38	0.06	-119.65	
10.5	0.17	55.71	4.75	172.02	0.07	136.98	0.07	-156.48	
11.0	0.12	-12.20	4.76	127.45	0.08	95.14	0.12	179.29	
11.5	0.09	-109.87	4.57	80.89	0.08	53.02	0.17	161.51	
12.0	0.09	158.54	4.27	35.69	0.08	10.08	0.16	156.17	
12.5	0.09	82.38	3.92	-8.91	0.08	-31.97	0.13	170.06	
13.0	0.10	31.33	3.55	-53.66	0.08	-72.29	0.11	147.45	