

ACP2005

1000-2000 MHz COUGARPAK™ LOW NOISE AMPLIFIER

Typical Values	ACP2005
Noise Figure	0.75 dB
Gain	32.0 dB
Gain Flatness	±0.3 dB
Output Power	+18.0 dBm
High Performance Thin Film Standard Single-stage CougarPak™ Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	1000-2000 MHz	1000-2000 MHz	1000-2000 MHz
Small Signal Gain (Min.)	32.0 dB	29.5 dB	29.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±0.8 dB
Noise Figure (Max.)	0.75 dB	1.1 dB	1.2 dB
SWR (Max.)	Input Output	2.0:1 1.9:1	2.0:1 2.0:1
Power Output (Min.) @ 1dB comp.	+18.0 dBm	+15.5 dBm	+15.0 dBm
Reverse Isolation	>50 dB	35 dB	35 dB
DC Current (Max.)	95 mA	115 mA	120 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	ACP2005
Second Order Harmonic Intercept Point	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+30 dBm

ABSOLUTE MAXIMUM RATINGS

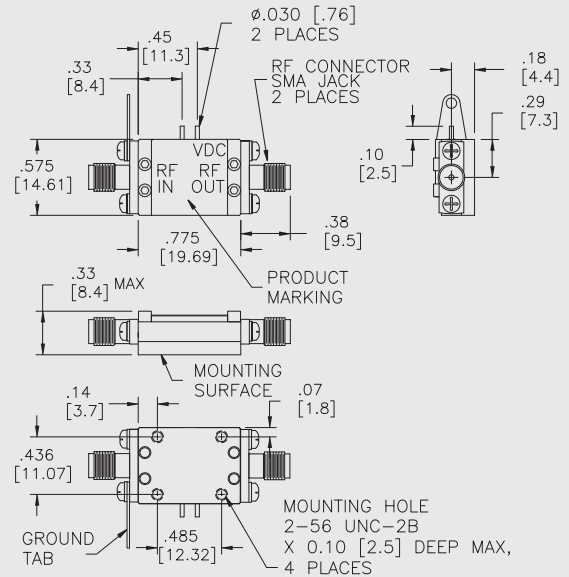
Storage Temperature	-55 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+7.5 Volts
Maximum Continuous RF Input Power	+12 dBm
Burn-in Temperature	125 °C
Thermal Resistance ¹ (θ _{jc})	105/85 °C/Watt
Junction Temperature Rise Above Case ² (T _{jc})	14/17 °C

¹ Thermal resistance of 1st stage and 2nd stage

² Junction Temperature Rise above Case of 1st stage and 2nd stage

ACP2005

CougarPak™ Connectorized Package (single-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

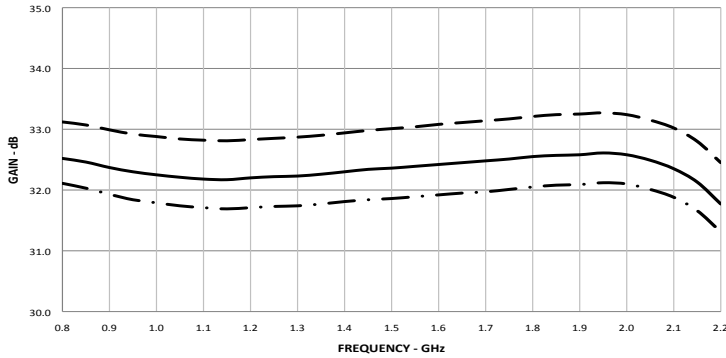
TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA

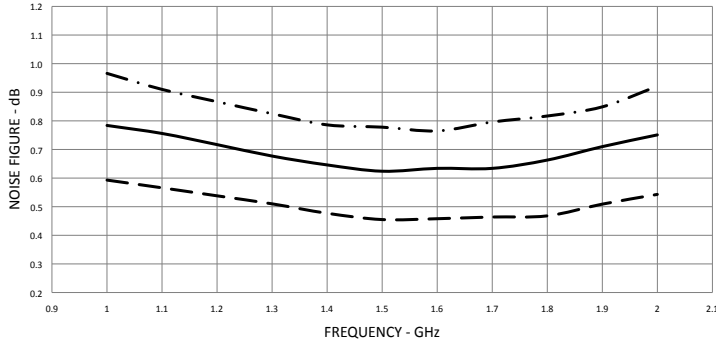
Vcc = 5

KEY: +25 C —
+85 C - - -
-55 C . . .

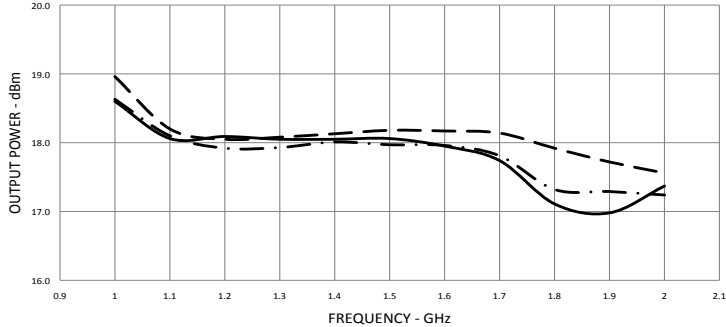
Gain vs Temperature Vcc=5



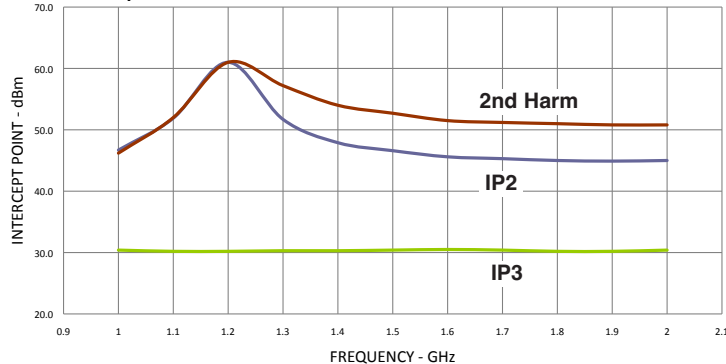
Noise Figure



Output Power at 1 dB Compression



Intercept Point



Model: ACP2005 @ +25°C

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
800	2.6	1.37	32.52	-43.1	0.61	-60.82
850	2.3	1.36	32.46	-53.31	0.57	-74.69
900	2.1	1.36	32.37	-62.9	0.53	-63.09
950	1.91	1.36	32.3	-72.02	0.51	-74.49
1000	1.76	1.37	32.25	-80.68	0.48	-73.09
1050	1.63	1.37	32.21	-89.08	0.47	-63.88
1100	1.56	1.37	32.18	-97.29	0.46	-55.44
1150	1.50	1.38	32.17	-105.32	0.45	-59.85
1200	1.44	1.39	32.2	-113.32	0.44	-57.63
1250	1.39	1.40	32.22	-121.28	0.44	-53.13
1300	1.34	1.41	32.23	-129.34	0.45	-54.89
1350	1.31	1.42	32.26	-137.34	0.44	-54.44
1400	1.30	1.41	32.3	-145.3	0.44	-55.10
1450	1.29	1.41	32.34	-153.4	0.45	-53.04
1500	1.27	1.41	32.36	-161.52	0.45	-54.22
1550	1.27	1.39	32.39	-169.65	0.45	-60.21
1600	1.29	1.38	32.42	-178.00	0.46	-57.89
1650	1.33	1.38	32.45	173.51	0.47	-52.42
1700	1.36	1.38	32.48	165.00	0.47	-56.27
1750	1.39	1.36	32.51	156.29	0.48	-54.17
1800	1.43	1.34	32.55	147.43	0.49	-54.20
1850	1.49	1.32	32.57	138.26	0.51	-51.89
1900	1.55	1.33	32.58	128.84	0.52	-51.14
1950	1.61	1.36	32.61	119.02	0.55	-51.84
2000	1.66	1.40	32.58	108.63	0.58	-53.12
2050	1.72	1.45	32.49	97.91	0.60	-51.10
2100	1.78	1.51	32.35	86.71	0.62	-56.40
2150	1.83	1.57	32.13	75.13	0.64	-64.07
2200	1.87	1.63	31.77	63.02	0.67	-58.31

LINEAR S-PARAMETERS

Model: ACP2005

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
800	0.45	-41.0	42.26	-43.1	0.001	116.9	0.15	68.4
850	0.39	-50.7	41.98	-53.3	0.000	-113.4	0.15	65.1
900	0.35	-58.9	41.54	-62.9	0.001	84.0	0.15	63.0
950	0.31	-66.2	41.19	-72.0	0.000	-162.1	0.15	59.4
1000	0.28	-72.7	40.97	-80.7	0.000	-53.6	0.15	56.3
1050	0.24	-79.6	40.79	-89.1	0.001	59.4	0.16	53.5
1100	0.22	-87.4	40.65	-97.3	0.002	56.4	0.16	49.9
1150	0.20	-94.8	40.60	-105.3	0.001	134.5	0.16	45.8
1200	0.18	-100.6	40.73	-113.3	0.001	86.4	0.16	40.8
1250	0.16	-107.5	40.81	-121.3	0.002	98.6	0.17	37.1
1300	0.14	-118.3	40.89	-129.3	0.002	84.9	0.17	33.8
1350	0.13	-130.6	41.02	-137.3	0.002	96.7	0.17	29.0
1400	0.13	-142.2	41.22	-145.3	0.002	78.0	0.17	24.4
1450	0.13	-152.7	41.39	-153.4	0.002	51.7	0.17	18.8
1500	0.12	-164.1	41.49	-161.5	0.002	61.2	0.17	12.2
1550	0.12	-179.3	41.63	-169.7	0.001	61.9	0.16	5.3
1600	0.13	166.5	41.80	-178.0	0.001	65.6	0.16	-3.0
1650	0.14	156.0	41.93	173.5	0.002	91.0	0.16	-13.4
1700	0.15	146.4	42.06	165.00	0.002	52.0	0.16	-22.9
1750	0.16	137.4	42.21	156.29	0.002	62.0	0.15	-33.6
1800	0.18	127.2	42.39	147.43	0.002	51.9	0.15	-45.5
1850	0.20	118.4	42.53	138.26	0.003	52.5	0.14	-61.5
1900	0.22	111.0	42.57	128.84	0.003	49.8	0.14	-80.1
1950	0.23	104.2	42.71	119.02	0.003	10.2	0.15	-97.4
2000	0.25	97.5	42.55	108.63	0.002	6.6	0.17	-115.2
2050	0.26	89.4	42.12	97.91	0.003	22.0	0.18	-132.3
2100	0.28	81.4	41.44	86.71	0.002	25.7	0.20	-148.0
2150	0.29	73.9	40.40	75.13	0.001	19.1	0.22	-163.5
2200	0.30	66.5	38.77	63.02	0.001	33.9	0.24	-178.4