

ACP14025

8.0 TO 14.0 GHz, Half Watt COUGARPAK® AMPLIFIER

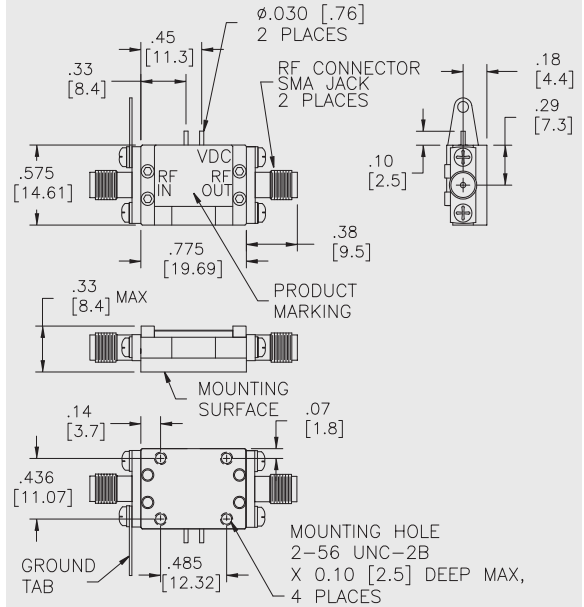
Typical Values

High Output Power	+28.5 dBm
High Third Order I.P.	+42.0 dBm
High Second Order I.P.	+60.0 dBm
High Performance Thin Film	
High Frequency Single-stage CougarPak®	

ACP14025

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



SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	7.5-14.0 GHz	8.0-14.0 GHz	8.0-14.0 GHz
Small Signal Gain (Min.)	8.5 dB	7.5 dB	7.0 dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	3.8 [^] dB	5.0 [^] dB	5.5 [^] dB
SWR (Max.)	Input <1.8:1 Output <1.4:1	<2.0:1 <1.7:1	<2.0:1 <1.8:1
Power Output (Min.) @ 1dB comp.	+28.5 dBm	+27.5 dBm	+27.0 dBm
Reverse Isolation	25.0 dB	—	—
DC Current (Max.)	250 mA	260 mA	270 mA

* Measured in a 50-ohm system at +12 Vdc unless otherwise specified.
^ 0.5 dB higher below 9.0 GHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

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Second Order Harmonic Intercept Point	+65 dBm
Second Order Two Tone Intercept Point	+60 dBm
Third Order Two Tone Intercept Point	+42 dBm

ABSOLUTE MAXIMUM RATINGS

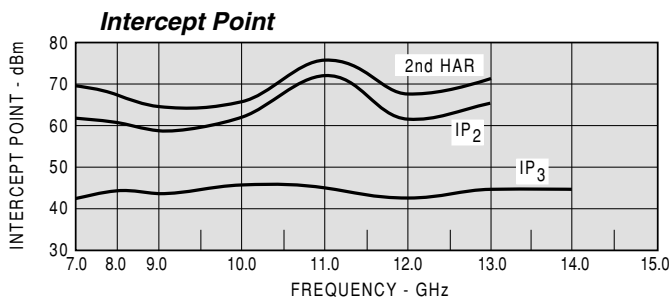
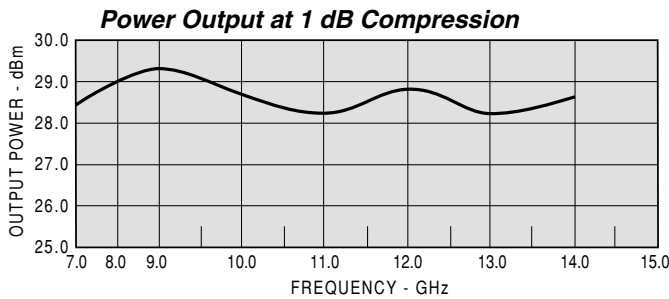
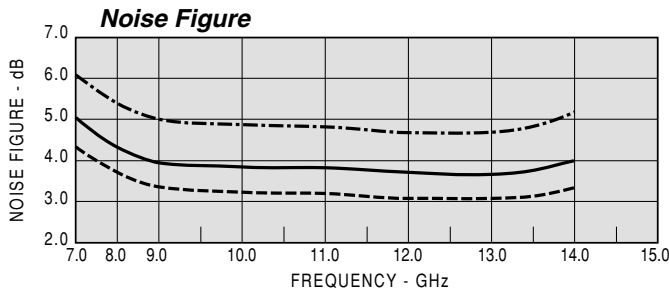
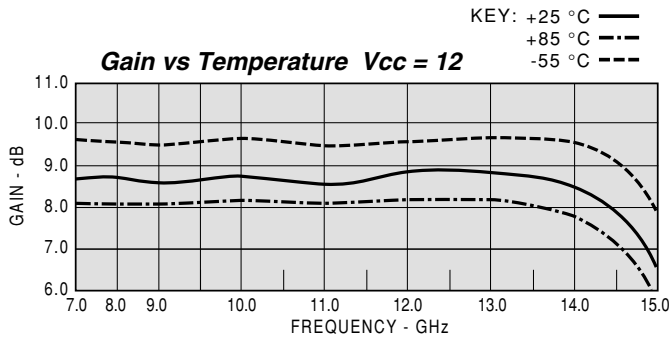
Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+85 °C
Maximum DC Voltage	+14 Volts
Maximum Continuous RF Input Power	+22 dBm
Maximum Short Term Input Power (1 Minute Max.)	+25 dBm
Maximum Peak Power (3 μsec Max.)	+28 dBm
Burn-in Temperature	+85 °C
Thermal Resistance¹ (θjc)	+20.3 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+61.0 °C

¹ Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: ACP14025 Vcc= +12V Icc= 250.82

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHZ	IN	OUT	DB	DEG	NSEC	DB
6.0	2.25	1.09	8.47	84.63	0.11	-30.05
6.5	2.08	1.12	8.53	65.05	0.11	-30.02
7.0	1.84	1.18	8.64	45.36	0.11	-29.01
7.5	1.75	1.23	8.63	27.01	0.10	-28.50
8.0	1.71	1.28	8.59	7.05	0.10	-28.30
8.5	1.66	1.24	8.45	-10.35	0.12	-27.56
9.0	1.61	1.25	8.51	-28.07	0.10	-26.90
9.5	1.38	1.24	8.66	-45.65	0.10	-26.23
10.0	1.18	1.21	8.73	-64.29	0.11	-25.45
10.5	1.35	1.21	8.66	-83.44	0.11	-25.23
11.0	1.67	1.25	8.47	-101.79	0.10	-24.77
11.5	1.57	1.24	8.42	-119.70	0.12	-23.44
12.0	1.43	1.15	8.77	-139.30	0.10	-22.20
12.5	1.40	1.12	8.72	-160.19	0.12	-21.64
13.0	1.37	1.13	8.73	178.22	0.11	-20.86
13.5	1.31	1.09	8.57	154.64	0.15	-20.14
14.0	1.25	1.19	8.29	128.23	0.16	-19.64
14.5	1.66	1.16	7.31	100.50	0.17	-19.65
15.0	2.17	1.06	5.65	74.29	0.14	-21.15
15.5	2.07	1.36	3.57	52.41	0.11	-22.40

Model: ACP14025 Vcc= +12V Icc= 250.82

LINEAR S-PARAMETERS

FREQ	S11		S21		S12		S22	
GHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6.0	0.39	-73.67	2.69	85.21	0.03	24.23	0.04	-49.31
6.5	0.36	-95.95	2.70	65.80	0.03	10.24	0.05	6.67
7.0	0.30	-115.58	2.74	46.03	0.04	-1.15	0.08	14.52
7.5	0.27	-131.36	2.75	27.64	0.04	-21.97	0.10	-0.46
8.0	0.27	-138.93	2.72	7.77	0.04	-28.23	0.12	-13.59
8.5	0.25	-149.74	2.68	-9.55	0.04	-43.89	0.11	-24.92
9.0	0.23	-168.91	2.70	-27.20	0.04	-58.41	0.11	-39.39
9.5	0.17	168.36	2.75	-44.72	0.05	-69.34	0.10	-38.04
10.0	0.08	82.27	2.78	-63.41	0.05	-82.82	0.10	-22.60
10.5	0.15	-15.74	2.75	-82.55	0.05	-100.48	0.10	-19.80
11.0	0.25	-80.75	2.69	-100.93	0.06	-108.11	0.11	-26.55
11.5	0.23	-123.46	2.68	-118.53	0.07	-122.52	0.11	-19.73
12.0	0.18	167.35	2.78	-138.09	0.08	-138.97	0.07	-18.82
12.5	0.17	105.49	2.77	-158.94	0.08	-158.28	0.06	-39.16
13.0	0.16	34.10	2.77	179.66	0.09	-176.18	0.06	-30.80
13.5	0.14	1.64	2.73	156.17	0.10	165.68	0.04	-47.81
14.0	0.10	2.11	2.64	129.79	0.10	142.12	0.09	-81.39
14.5	0.25	-20.94	2.38	101.97	0.10	116.86	0.08	-71.27
15.0	0.37	-60.13	1.96	75.73	0.09	92.99	0.03	14.96
15.5	0.35	-122.53	1.54	53.87	0.08	73.30	0.16	9.30
16.0	0.36	151.93	1.27	34.78	0.07	53.17	0.32	2.84