

ACP16025

8.0 TO 16.0 GHz, HALF WATT COUGARPAK® AMPLIFIER

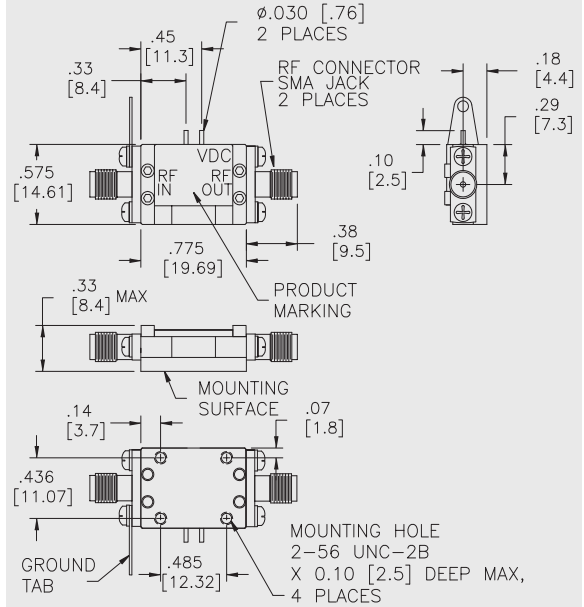
Typical Values

High Output Power	+29.0 dBm
High Third Order I.P.	+42.0 dBm
High Second Order I.P.	+65.0 dBm
High Performance Thin Film	
High Frequency Single-stage CougarPak®	

ACP16025

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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.)	8.0-16.0 GHz	8.0-16.0 GHz	8.0-16.0 GHz
Small Signal Gain (Min.)	7.5 dB	6.5 [^] dB	6.0 [^] dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	4.3 dB	5.5 ^{^^} dB	6.0 ^{^^} dB
SWR (Max.)	Input 1.5:1 Output 1.3:1	2.0:1 ^{††} 1.6:1	2.0:1 ^{††} 1.8:1
Power Output @ 1 dB (Min.)	+29.0 dBm	+28.0 [†] dBm	+27.5 [†] dBm
Reverse Isolation	20.0 dB	—	—
DC Current (Max.)	253.0 mA	263.0 mA	273.0 mA

* Measured in a 50-ohm system at +12 Vdc unless otherwise specified.
[^] 0.5 dB lower above 15 GHz. ^{^^} 0.5 dB higher below 9.0 GHz and above 14.5 GHz.
[†] 2.0 dBm lower above 14.5 GHz. ^{††} 0.2 higher below 8.5 GHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; @ 11 GHz

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Second Order Harmonic Intercept Point	+70 dBm
Second Order Two Tone Intercept Point	+65 dBm
Third Order Two Tone Intercept Point	+42 dBm

ABSOLUTE MAXIMUM RATINGS

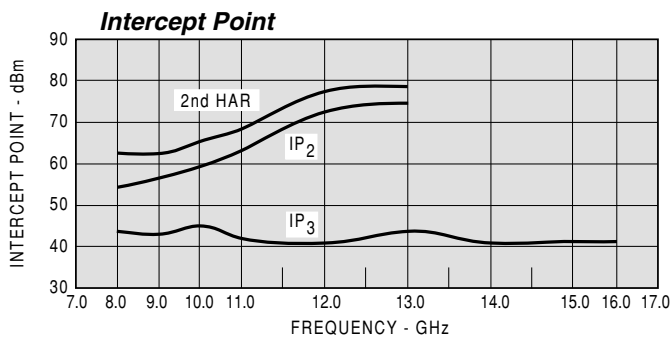
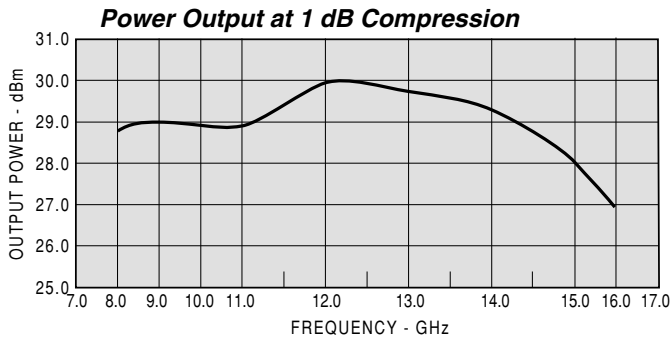
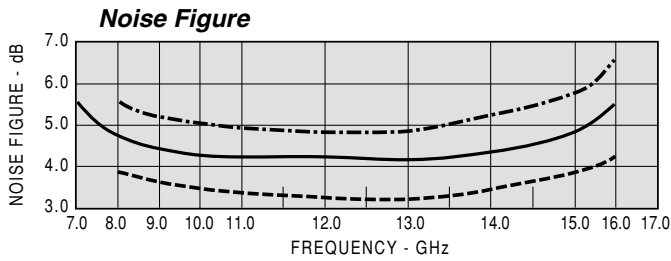
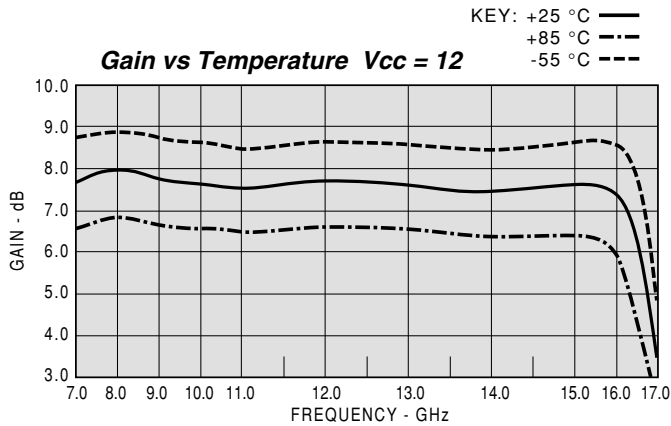
Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+85 °C
Maximum DC Voltage	+14 Volts
Maximum Continuous RF Input Power	+25 dBm
Maximum Short Term Input Power (1 Minute Max.)	+27 dBm
Maximum Peak Power (3 μsec Max.)	+27 dBm
Burn-in Temperature	+85 °C
Thermal Resistance¹ (θjc)	23 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+70 °C

¹ Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: ACP16025 Vcc= +12V lcc= 252.31

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHZ	IN	OUT	DB	DEG	NSEC	DB
6.0	2.32	1.33	8.18	90.65	0.12	-30.19
6.5	2.28	1.47	7.89	68.60	0.12	-29.78
7.0	2.09	1.51	7.91	49.22	0.10	-29.15
7.5	1.96	1.41	7.70	30.38	0.11	-29.75
8.0	1.91	1.38	7.90	9.54	0.12	-28.09
8.5	1.74	1.27	7.72	-9.68	0.13	-27.70
9.0	1.63	1.18	7.70	-28.48	0.10	-27.34
9.5	1.46	1.19	7.66	-46.56	0.10	-26.21
10.0	1.14	1.20	7.65	-65.32	0.11	-25.17
10.5	1.08	1.19	7.60	-84.12	0.10	-24.85
11.0	1.31	1.24	7.46	-103.00	0.10	-24.24
11.5	1.42	1.21	7.42	-120.78	0.11	-23.45
12.0	1.25	1.09	7.65	-140.72	0.11	-22.11
12.5	1.23	1.14	7.59	-160.68	0.11	-21.26
13.0	1.27	1.09	7.58	178.64	0.11	-20.70
13.5	1.31	1.16	7.53	157.75	0.11	-19.81
14.0	1.16	1.24	7.27	136.64	0.12	-19.04
14.5	1.16	1.12	7.31	115.23	0.13	-18.28
15.0	1.42	1.11	7.43	91.48	0.14	-17.85
15.5	1.42	1.11	7.46	65.02	0.14	-17.03
16.0	1.03	1.26	7.26	33.42	0.20	-16.50
16.5	2.09	1.30	5.74	-1.09	0.18	-17.07
17.0	2.16	1.27	3.60	-28.56	0.15	-18.94
17.5	2.15	1.44	1.89	-56.39	0.16	-19.65
18.0	2.00	1.65	0.64	-89.96	0.23	-19.76

Model: ACP16025 Vcc= +12V lcc= 252.31

LINEAR S-PARAMETERS

FREQ	S11		S21		S12		S22	
GHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
6.0	0.40	-51.46	2.57	90.85	0.03	31.26	0.14	88.24
6.5	0.39	-75.55	2.48	68.86	0.03	18.10	0.19	76.00
7.0	0.35	-96.60	2.48	49.50	0.03	6.47	0.21	67.89
7.5	0.32	-114.39	2.42	30.60	0.03	-9.39	0.17	52.45
8.0	0.31	-126.38	2.48	9.72	0.04	-23.50	0.16	29.07
8.5	0.27	-135.76	2.43	-9.28	0.04	-39.44	0.12	16.02
9.0	0.24	-152.18	2.43	-28.25	0.04	-51.09	0.08	-11.25
9.5	0.18	-161.03	2.41	-46.23	0.05	-65.82	0.09	-21.84
10.0	0.07	177.28	2.41	-64.86	0.05	-75.79	0.09	-14.94
10.5	0.03	9.92	2.40	-83.71	0.06	-94.75	0.08	-22.18
11.0	0.13	-49.45	2.36	-102.60	0.06	-106.99	0.11	-40.36
11.5	0.17	-83.42	2.34	-120.37	0.07	-118.84	0.10	-38.40
12.0	0.11	-162.01	2.41	-140.29	0.08	-132.71	0.04	-76.36
12.5	0.10	124.75	2.39	-160.19	0.09	-150.75	0.07	-111.30
13.0	0.12	57.84	2.39	179.07	0.09	-169.49	0.04	-125.45
13.5	0.13	24.29	2.38	158.30	0.10	174.02	0.08	177.90
14.0	0.08	22.16	2.30	137.22	0.11	156.04	0.11	-153.71
14.5	0.08	19.81	2.32	116.03	0.12	135.88	0.05	-148.55
15.0	0.18	10.33	2.35	92.17	0.13	112.97	0.05	175.02
15.5	0.17	-11.53	2.35	65.57	0.14	89.38	0.05	-75.53
16.0	0.01	-121.78	2.30	33.94	0.15	62.11	0.12	-42.57
16.5	0.35	66.03	1.94	-0.24	0.14	29.61	0.13	-102.38
17.0	0.60	35.26	1.51	-27.86	0.11	0.72	0.12	-165.83
17.5	0.61	7.28	1.24	-55.72	0.10	-21.93	0.17	120.82
18.0	0.33	-16.28	1.07	-89.22	0.10	-64.52	0.24	108.27
18.5	0.47	49.53	0.59	-138.12	0.05	-114.76	0.34	103.03
19.0	0.68	26.12	0.25	-157.97	0.02	-138.18	0.42	79.50