

ACP12017 6.0 TO 12.0 GHz COUGARPAK® AMPLIFIER

Typical Values	ACP12017
High Output Level	+25.5 dBm
Medium Gain	12.5 dB
Low Noise Figure	3.3 dB
High Performance Thin Film Standard Single-stage CougarPak® 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.)	12.5 dB	11.0 dB	10.5 dB
Gain Flatness (Max.)	±0.8 dB	±1.0 dB	±1.2 dB
Noise Figure (Max.)	3.3 dB	3.8 dB	4.5 dB
SWR (Max.) Input/Output	<1.8:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+25.5^ dBm	+23.5^ dBm	+22.5^ dBm
Reverse Isolation	23.0 dB	—	—
DC Current (Max.)	105 mA	118 mA	120 mA

* Measured in a 50-ohm system at +10 Vdc unless otherwise specified.
^ 0.5 dB less below 7.0 GHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	6-9 GHz	9-12 GHz
Second Order Harmonic Intercept Point	+56 dBm	+62 dBm
Second Order Two Tone Intercept Point	+50 dBm	+57 dBm
Third Order Two Tone Intercept Point	+37 dBm	+37 dBm

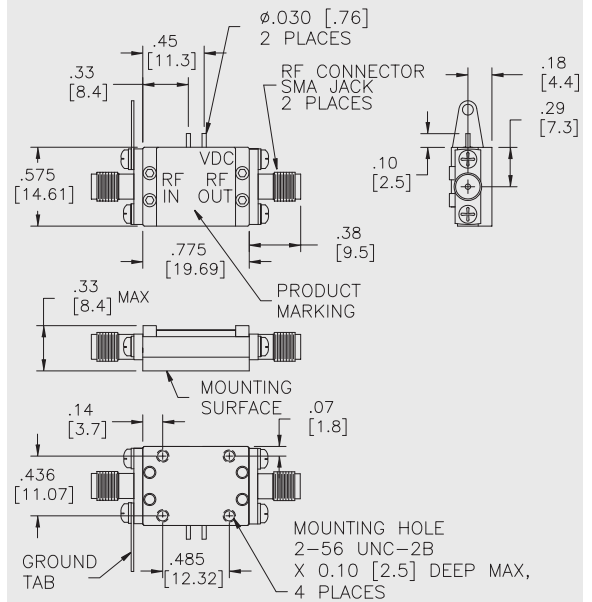
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+19 dBm
Maximum Short Term Input Power (1 Minute Max.)	+22 dBm
Maximum Peak Power (3 μsec Max.)	+27 dBm
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+22.0 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+23.1 °C

¹ Thermal resistance is based on total power dissipation.

ACP12017

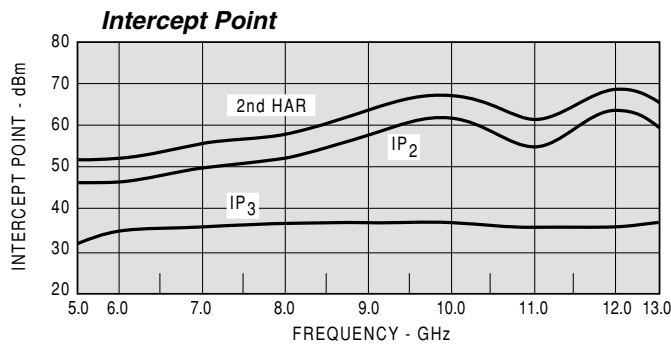
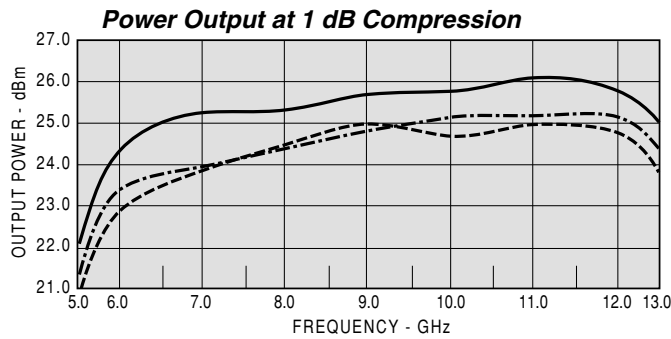
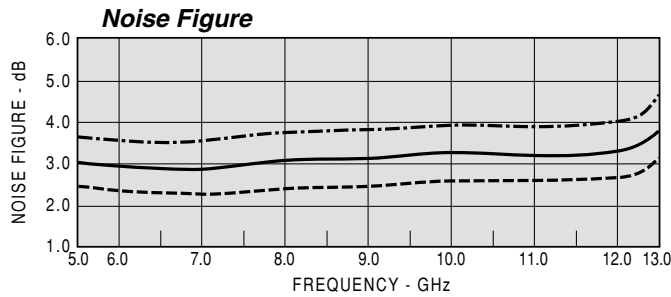
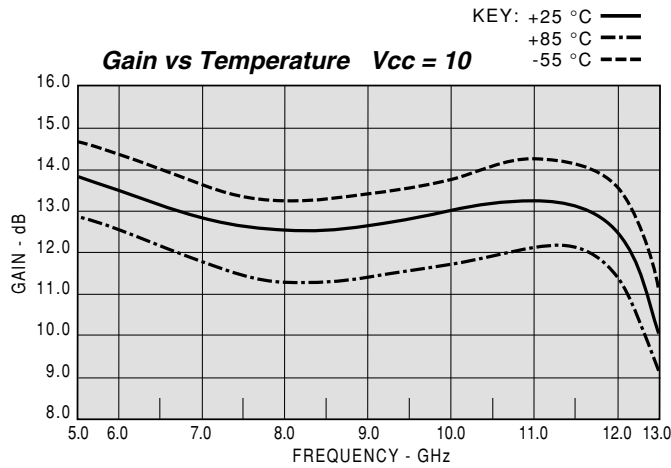
CougarPak® SMA Package (single-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: ACP12017 Vcc=+10V Icc=104.9

FREQ. GHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	DELAY NSEC	REV/ISO DB
5.0	1.86	1.65	13.61	111.76	0.16	-27.95
5.5	1.37	1.46	13.54	84.70	0.14	-27.36
6.0	1.16	1.21	13.41	60.14	0.14	-27.34
6.5	1.10	1.15	13.04	37.13	0.12	-26.87
7.0	1.03	1.32	12.81	15.89	0.12	-26.96
7.5	1.08	1.43	12.86	-3.43	0.10	-26.51
8.0	1.20	1.49	12.57	-23.52	0.09	-26.23
8.5	1.31	1.42	12.67	-42.30	0.10	-25.43
9.0	1.37	1.33	12.72	-63.25	0.12	-24.61
9.5	1.40	1.36	12.88	-83.61	0.12	-23.78
10.0	1.47	1.49	13.05	-104.95	0.13	-23.13
10.5	1.51	1.56	13.16	-127.96	0.13	-22.44
11.0	1.38	1.52	13.19	-152.41	0.14	-21.97
11.5	1.20	1.40	12.90	-177.36	0.15	-21.70
12.0	1.06	1.22	12.33	155.44	0.15	-21.46
12.5	1.19	1.13	11.44	130.20	0.14	-21.76
13.0	1.28	1.17	10.31	104.24	0.13	-22.41

Model: ACP12017 Vcc=+10V Icc=104.9

LINEAR S-PARAMETERS

FREQ. GHZ	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	0.30	82.59	4.81	111.71	0.04	34.51	0.24	-173.39
5.5	0.16	70.11	4.78	84.42	0.04	10.85	0.18	159.80
6.0	0.07	71.94	4.70	59.71	0.04	-13.15	0.09	115.00
6.5	0.05	79.22	4.50	36.79	0.05	-28.95	0.07	8.16
7.0	0.01	87.30	4.37	15.33	0.05	-44.19	0.14	-50.29
7.5	0.04	-88.07	4.40	-3.89	0.05	-60.38	0.18	-75.82
8.0	0.09	-94.77	4.26	-24.06	0.05	-74.63	0.19	-92.05
8.5	0.13	-103.29	4.30	-42.95	0.05	-89.52	0.17	-95.83
9.0	0.15	-103.10	4.32	-63.91	0.06	-106.15	0.14	-84.28
9.5	0.16	-96.33	4.41	-84.26	0.06	-121.03	0.15	-71.40
10.0	0.18	-94.85	4.49	-105.63	0.07	-139.77	0.20	-61.85
10.5	0.20	-102.99	4.53	-128.86	0.08	-160.35	0.21	-65.41
11.0	0.16	-119.91	4.54	-152.96	0.08	179.63	0.20	-78.36
11.5	0.09	-158.89	4.39	-178.03	0.08	157.29	0.17	-85.45
12.0	0.03	118.05	4.12	154.77	0.08	135.91	0.10	-94.59
12.5	0.09	5.52	3.71	129.47	0.08	113.86	0.07	-104.85
13.0	0.13	-50.42	3.26	103.64	0.07	94.46	0.08	-92.95