

# ACP18015

## 8.0 TO 18.0 GHz COUGARPAK® AMPLIFIER

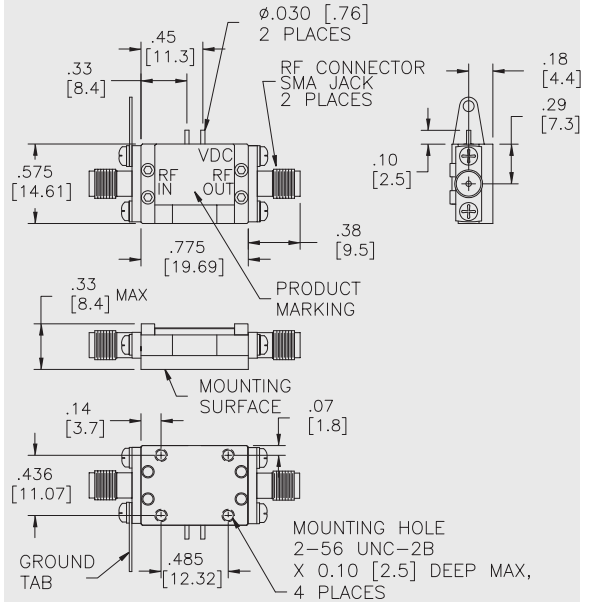
**Typical Values**

<b>Low Noise Figure</b> .....	<b>4.5 dB</b>
<b>Medium Output Power</b> .....	<b>+14.0 dBm</b>
<b>Medium Gain</b> .....	<b>9.2 dB</b>
<b>High Performance Thin Film</b>	
<b>High Frequency Single-stage CougarPak®</b>	

**ACP18015**

### ACP18015

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



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	7.0-18.5 GHz	8.0-18.0 GHz	8.0-18.0 GHz
Small Signal Gain (Min.)	9.2 dB	8.5 dB	8.0 dB
Gain Flatness (Max.)	±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	4.5 dB	7.0 dB	7.5 dB
SWR (Max.)	1.6:1	2.0:1	2.0:1
Power Output (Min.)	+14.0 dBm	+12.0 dBm	+11.5 dBm
Reverse Isolation	25.0 dB	—	—
DC Current (Max.)	63.0 mA	67.0 mA	70.0 mA

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

## INTERMODULATION PERFORMANCE

**Typical @ 25 °C; @ 9.5 GHz**

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<b>Second Order Harmonic Intercept Point</b> .....	<b>+37 dBm</b>
<b>Second Order Two Tone Intercept Point</b> .....	<b>+31 dBm</b>
<b>Third Order Two Tone Intercept Point</b> .....	<b>+23 dBm</b>

## ABSOLUTE MAXIMUM RATINGS

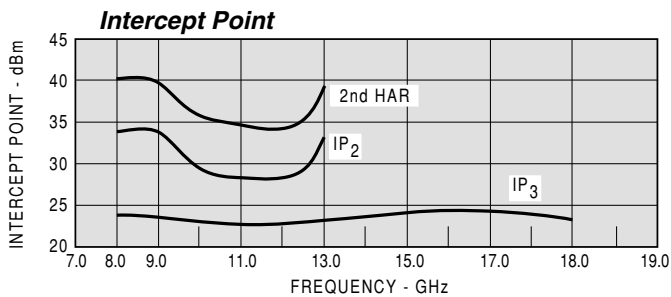
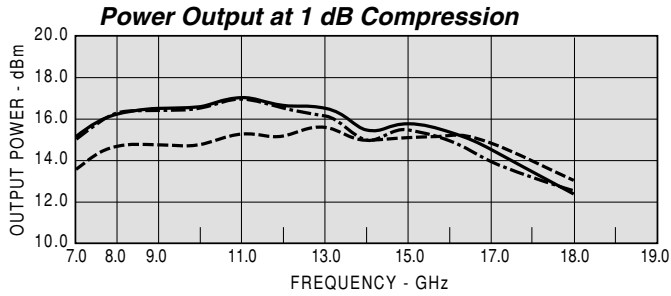
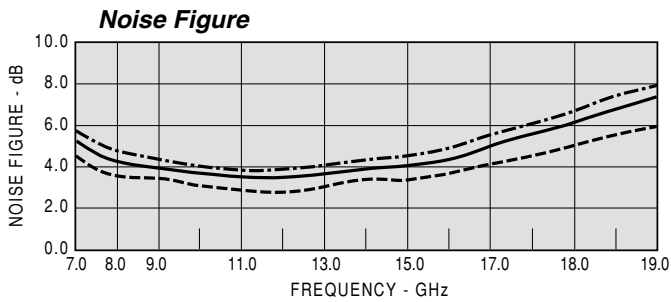
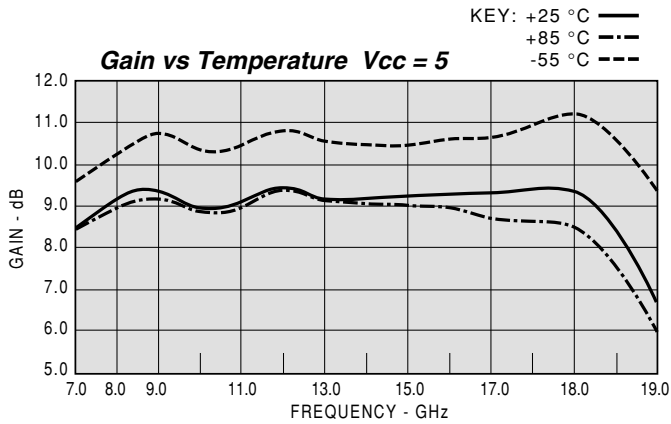
<b>Storage Temperature</b> .....	<b>-65 to +150 °C</b>
<b>Maximum Case Temperature</b> .....	<b>+125 °C</b>
<b>Maximum DC Voltage</b> .....	<b>+8 Volts</b>
<b>Maximum Continuous RF Input Power</b> .....	<b>+20 dBm</b>
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	<b>+23 dBm</b>
<b>Maximum Peak Power (3 μsec Max.)</b> .....	<b>+27 dBm</b>
<b>Burn-in Temperature</b> .....	<b>+125 °C</b>
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	<b>105 °C/Watt</b>
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	<b>+33 °C</b>

<sup>1</sup> Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: ACP18015			Vcc= +5V			Icc= 62.25	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
GHZ	IN	OUT	DB	DEG	NSEC	DB	
7.0	2.22	1.57	8.67	113.10	0.11	-29.59	
7.5	2.05	1.34	8.98	92.33	0.11	-28.33	
8.0	1.81	1.27	9.18	74.39	0.07	-28.30	
8.5	1.64	1.47	9.40	53.99	0.11	-28.13	
9.0	1.59	1.65	9.33	35.02	0.12	-27.78	
9.5	1.48	1.77	9.00	19.83	0.08	-27.61	
10.0	1.37	1.78	8.90	5.19	0.08	-27.80	
10.5	1.27	1.78	9.02	-9.70	0.08	-27.29	
11.0	1.24	1.73	9.05	-25.89	0.09	-26.37	
11.5	1.23	1.66	9.29	-39.61	0.07	-26.57	
12.0	1.13	1.51	9.52	-54.67	0.08	-26.13	
12.5	1.09	1.33	9.38	-72.71	0.09	-25.90	
13.0	1.16	1.15	9.29	-89.76	0.09	-25.05	
13.5	1.23	1.02	9.28	-105.14	0.09	-24.92	
14.0	1.24	1.09	9.22	-121.12	0.09	-24.46	
14.5	1.25	1.14	9.10	-136.79	0.09	-23.98	
15.0	1.22	1.16	9.16	-152.99	0.09	-23.80	
15.5	1.21	1.17	9.17	-169.67	0.10	-23.41	
16.0	1.17	1.08	9.17	173.83	0.09	-23.36	
16.5	1.20	1.07	9.23	155.68	0.11	-22.63	
17.0	1.35	1.29	9.19	136.55	0.13	-22.25	
17.5	1.47	1.42	9.16	117.08	0.12	-22.14	
18.0	1.38	1.35	9.29	97.17	0.12	-21.63	
18.5	1.17	1.61	8.83	69.90	0.15	-21.95	

Model: ACP18015			LINEAR S-PARAMETERS						Icc= 62.25	
			Vcc= +5V							
FREQ	S11		S21		S12		S22		MAG	ANG
GHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
7.0	0.38	55.22	2.74	112.99	0.03	45.02	0.23	119.58		
7.5	0.34	37.11	2.85	93.05	0.04	28.51	0.14	76.29		
8.0	0.29	15.85	2.91	74.56	0.04	7.57	0.12	0.12		
8.5	0.24	-1.73	2.98	54.60	0.04	-11.50	0.19	-50.39		
9.0	0.23	-23.81	2.97	35.59	0.04	-25.16	0.25	-71.75		
9.5	0.20	-44.39	2.85	20.03	0.04	-37.27	0.28	-81.74		
10.0	0.15	-54.10	2.82	5.66	0.04	-55.43	0.29	-85.81		
10.5	0.12	-49.74	2.86	-9.41	0.05	-64.59	0.29	-85.20		
11.0	0.11	-40.45	2.87	-25.58	0.05	-77.58	0.27	-85.01		
11.5	0.09	-33.70	2.95	-39.27	0.05	-91.38	0.25	-90.40		
12.0	0.06	-24.64	3.01	-54.29	0.05	-102.37	0.20	-100.12		
12.5	0.04	25.01	2.98	-72.28	0.05	-116.39	0.14	-116.55		
13.0	0.08	56.34	2.95	-89.34	0.06	-129.61	0.07	-141.24		
13.5	0.10	41.72	2.94	-104.87	0.06	-145.16	0.01	-157.92		
14.0	0.11	16.10	2.92	-120.66	0.06	-156.83	0.03	-10.40		
14.5	0.11	-16.34	2.87	-136.23	0.07	-170.49	0.06	-39.64		
15.0	0.11	-41.68	2.90	-152.58	0.07	174.25	0.08	-49.90		
15.5	0.09	-50.02	2.89	-168.74	0.07	159.60	0.09	-60.05		
16.0	0.07	-36.18	2.90	174.20	0.07	148.67	0.06	-62.75		
16.5	0.09	3.26	2.90	156.33	0.07	132.67	0.03	43.10		
17.0	0.15	18.58	2.89	137.20	0.08	115.20	0.11	57.96		
17.5	0.20	16.10	2.87	117.60	0.08	96.31	0.16	50.16		
18.0	0.15	6.88	2.91	97.59	0.08	77.35	0.15	62.77		
18.5	0.07	69.97	2.75	70.37	0.08	47.31	0.25	92.28		
19.0	0.21	101.39	2.50	43.03	0.07	21.68	0.43	79.37		