

# ACP12019

# 6.0 TO 12.0 GHz COUGARPAK® AMPLIFIER

Typical Values	ACP12019
High Output Power	+28.0 dBm
Medium Gain	10.5 dB
High Third Order I.P.	+39 dBm
High Second Order I.P. (above 8.5 GHz)	+52 dBm
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.)	10.5 dB	9.5 dB	8.5 dB
Gain Flatness (Max.)	±0.8 dB	±1.0 dB	±1.2 dB
Noise Figure (Max.)	4.1 dB	4.6 dB	5.1 dB
SWR (Max.)	Input/Output	2.0:1	2.0:1
Power Output (Min.) @ 1dB comp.	+28.0 dBm	+26.5 dBm	+26.0 dBm
Reverse Isolation	24.0 dB	—	—
DC Current (Max.)	210 mA	220 mA	230 mA

\* Measured in a 50-ohm system at +10 Vdc unless otherwise specified.

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 8.0 GHz	ACP12019
Second Order Harmonic Intercept Point	+56 dBm
Second Order Two Tone Intercept Point	+52 dBm
Third Order Two Tone Intercept Point	+39 dBm

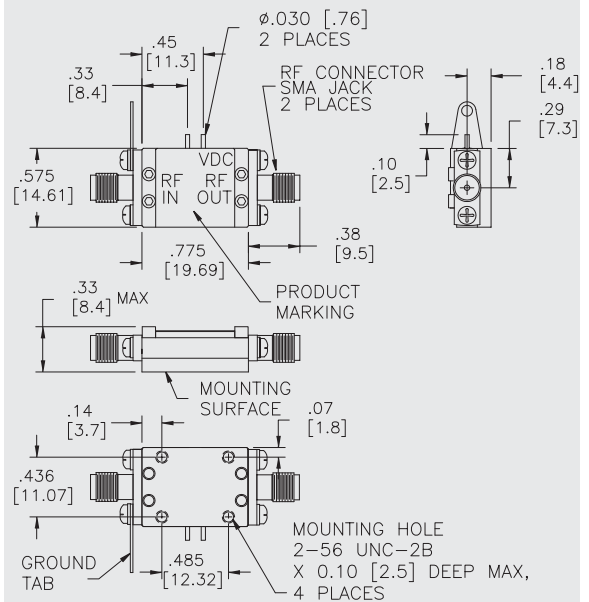
## ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Maximum Case Temperature	+85 °C
Maximum DC Voltage	+14 Volts
Maximum Continuous RF Input Power	+25.0 dBm
Maximum Short Term Input Power (1 Minute Max.)	+27.0 dBm
Maximum Peak Power (3 μsec Max.)	+27.0 dBm
Burn-in Temperature	+85 °C
Thermal Resistance <sup>1</sup> (θjc)	+24.4 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+51.2 °C

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

## ACP12019

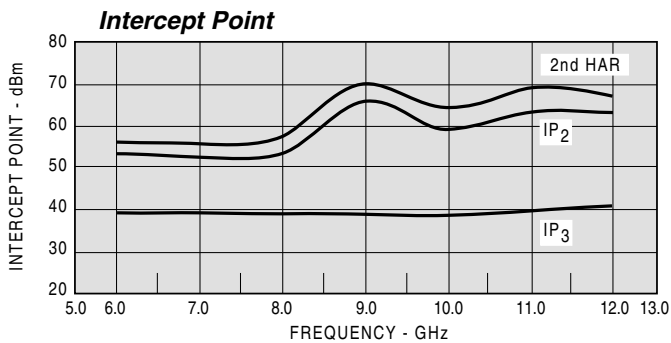
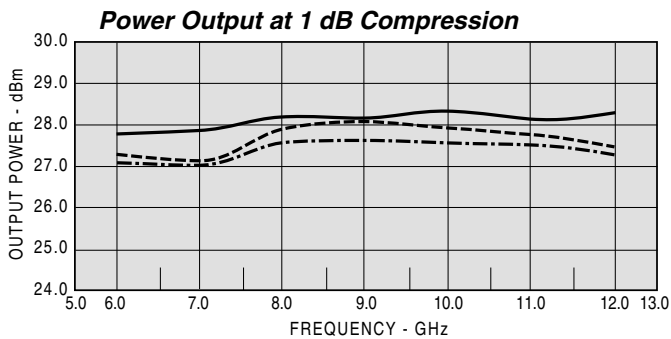
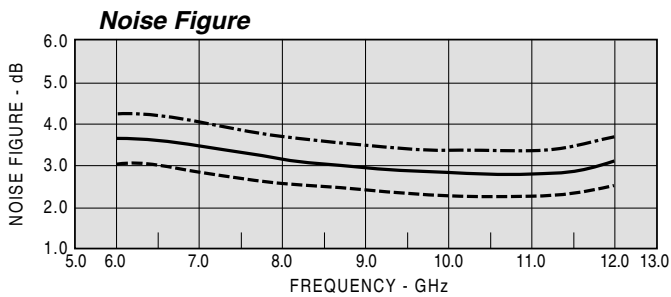
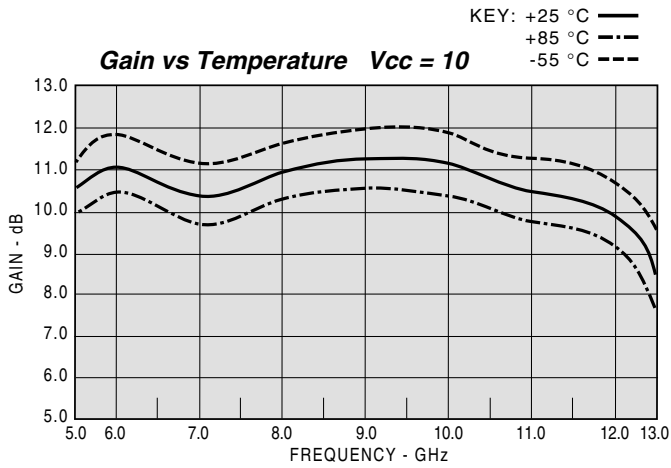
### CougarPak® SMA Package (single-stage)



DIMENSIONS ARE IN INCHES [MILLIMETERS]

**TYPICAL PERFORMANCE**

**TYPICAL AUTOMATIC TEST DATA**



Model: ACP12019 Vcc=+10V Icc=209.10

FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO
GHZ	IN	OUT	DB	DEG	NSEC	DB
5.0	1.87	1.12	10.72	152.40	0.33	-29.22
5.5	1.51	1.22	10.99	95.08	0.32	-28.47
6.0	1.27	1.39	10.97	38.98	0.30	-27.93
6.5	1.12	1.47	10.68	-15.58	0.30	-27.24
7.0	1.08	1.46	10.56	-65.70	0.28	-26.90
7.5	1.12	1.41	10.81	-116.85	0.29	-26.58
8.0	1.08	1.35	10.85	-169.56	0.29	-26.16
8.5	1.12	1.39	10.88	137.88	0.29	-25.61
9.0	1.22	1.47	10.88	86.34	0.29	-24.87
9.5	1.17	1.39	10.97	34.59	0.28	-24.32
10.0	1.15	1.25	11.19	-18.90	0.29	-23.72
10.5	1.23	1.28	11.35	-74.83	0.32	-23.15
11.0	1.34	1.35	11.08	-131.38	0.32	-22.40
11.5	1.45	1.19	10.69	174.19	0.30	-21.98
12.0	1.36	1.14	10.56	117.79	0.32	-21.54
12.5	1.36	1.24	10.20	57.75	0.34	-20.76
13.0	1.68	1.23	9.71	-4.01	0.35	-20.24

Model: ACP12019 Vcc=+10V Icc=208.56

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
GHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG.
5.0	0.29	113.43	3.45	100.13	0.04	23.28	0.06	-117.78
5.5	0.20	82.02	3.56	73.95	0.04	6.85	0.11	-76.29
6.0	0.12	43.98	3.55	49.17	0.04	-12.49	0.16	-80.31
6.5	0.07	-26.04	3.49	26.57	0.05	-30.14	0.19	-89.68
7.0	0.04	-67.87	3.49	5.86	0.05	-50.44	0.18	-98.65
7.5	0.06	-82.66	3.46	-15.79	0.05	-68.13	0.17	-104.42
8.0	0.07	-81.79	3.46	-35.31	0.05	-82.39	0.16	-106.00
8.5	0.06	-80.20	3.59	-56.30	0.05	-96.75	0.14	-103.62
9.0	0.03	-60.37	3.61	-78.90	0.06	-112.52	0.14	-99.42
9.5	0.04	-46.60	3.61	-101.23	0.06	-130.02	0.13	-93.12
10.0	0.03	10.95	3.67	-123.34	0.06	-148.69	0.12	-97.59
10.5	0.11	28.37	3.68	-147.29	0.07	-167.73	0.11	-110.58
11.0	0.16	-7.37	3.60	-172.42	0.08	171.61	0.08	-127.85
11.5	0.14	-38.17	3.49	162.35	0.08	154.15	0.07	-171.43
12.0	0.15	-91.82	3.35	137.75	0.09	130.38	0.10	143.16
12.5	0.20	-143.19	3.33	109.18	0.09	107.82	0.11	107.15
13.0	0.28	-159.75	3.10	76.46	0.10	77.72	0.07	15.75