

AC2075

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

Low Noise Figure	AC2075 <2.7 dB
Medium Output Power	+16.5 dBm
Medium Gain	10.3 dB
Low Current Drain	50 mA
High Performance Thin Film	
Standard Size TO-8	
Available in Surface Mount	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	5-2100 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	10.3^ dB	9.7^ dB	9.0^ dB
Gain Flatness (Max.)	< ±0.5 dB	±0.6 dB	±0.7 dB
Noise Figure (Max.) 100-2000 MHz	< 2.7 dB	3.2 dB	3.7 dB
SWR (Max.) Input/Output	< 1.7:1	1.9:1	2.0:1
Power Output (Min.) @ 1dB comp.	+16.5 dBm	+15.5 dBm	+15.0 dBm
DC Current (Max.)	50.0 mA	54.0 mA	58.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ 0.5 dB higher below 600 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 volts	+15 volts
Second Order Harmonic Intercept Point	+51 dBm	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm	+45 dBm
Third Order Two Tone Intercept Point	+28 dBm	+29.5 dBm

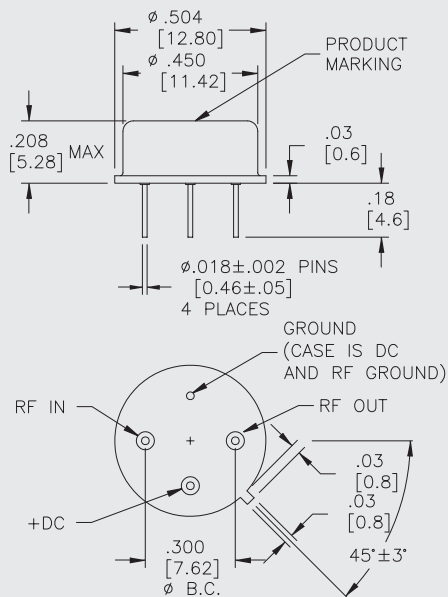
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+20 dBm
Maximum Short Term Input Power (1 Minute Max.)	125 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+15 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+13 °C

¹ Thermal resistance is based on total power dissipation.

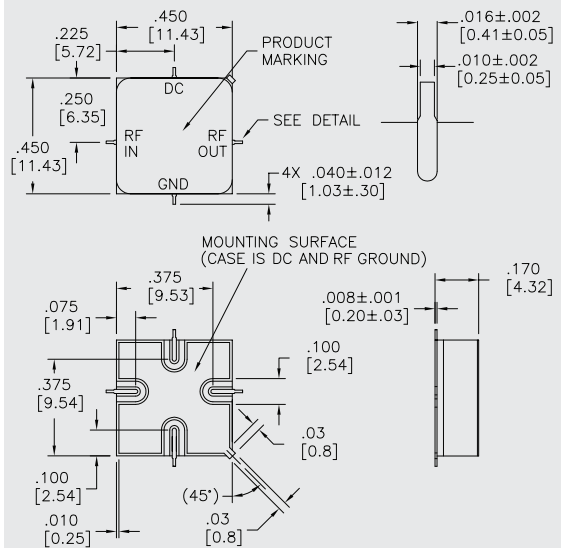
AC2075

TO-8 Package for Amplifiers



AS2075

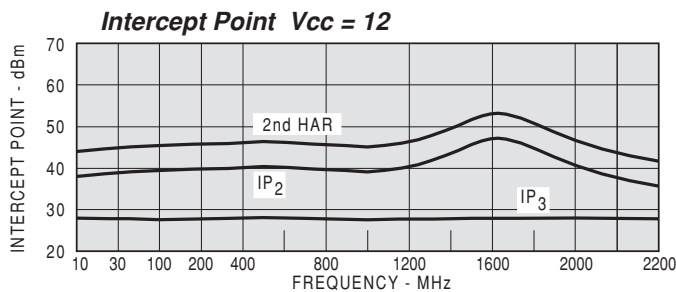
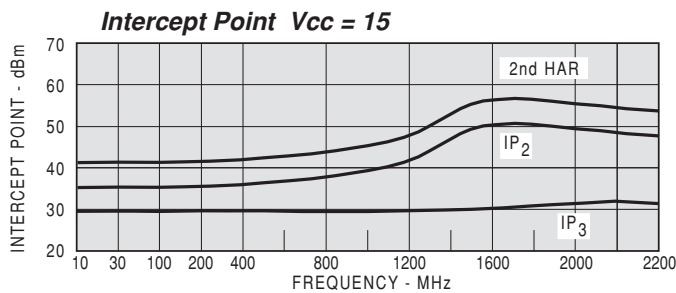
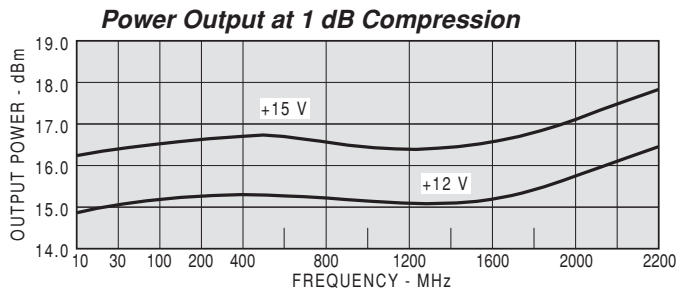
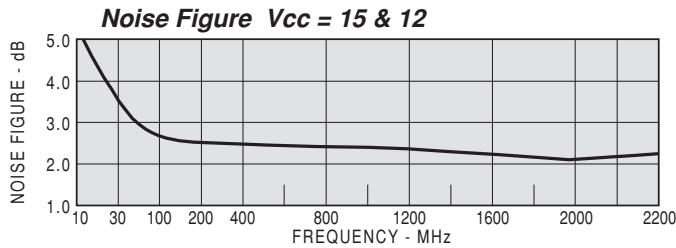
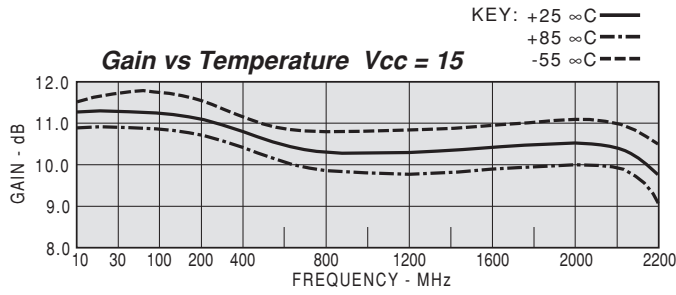
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC2075			Vcc=+15V			lcc=50.01	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	2.19	1.97	10.53	-137		-19.8	
10	1.48	1.74	10.99	-160		-19.5	
50	1.21	1.72	10.97	178	0.9	-19.6	
100	1.21	1.70	10.91	170	0.44	-19.6	
200	1.24	1.61	10.64	157	0.35	-19.2	
400	1.30	1.52	10.36	138	0.27	-19.0	
600	1.33	1.52	10.34	117	0.29	-19.1	
800	1.38	1.51	10.33	97	0.29	-19.0	
1000	1.42	1.48	10.30	76	0.3	-19.1	
1200	1.44	1.43	10.32	55	0.3	-18.9	
1400	1.44	1.40	10.49	33	0.31	-18.7	
1600	1.42	1.39	10.65	10	0.32	-18.5	
1800	1.40	1.40	10.88	-15	0.34	-18.4	
2000	1.55	1.46	11.03	-46	0.44	-18.5	
2200	2.48	1.49	10.20	-83	0.54	-20.1	
2400	5.18	1.38	7.66	-119	0.48	-24.1	

Model: AC2075

LINEAR S-PARAMETERS

Vcc=+15V

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.37	-60.4	3.36	-136.9	0.102	33.7	0.33	-164.8
10	0.19	-58.2	3.54	-159.9	0.106	15.9	0.27	-172.7
50	0.10	-23.4	3.54	177.9	0.104	1.7	0.26	176.7
100	0.09	-19.2	3.51	170.0	0.105	-1.7	0.26	168.9
200	0.11	-24.7	3.41	157.4	0.109	-6.7	0.23	157.1
400	0.13	-52.3	3.30	137.8	0.112	-19.2	0.21	149.6
600	0.14	-73.5	3.29	117.4	0.111	-30.6	0.21	139.5
800	0.16	-88.5	3.28	96.6	0.112	-41.0	0.20	128.9
1000	0.17	-99.6	3.27	75.8	0.112	-51.8	0.19	118.4
1200	0.18	-109.3	3.28	54.8	0.113	-64.0	0.18	108.3
1400	0.18	-120.7	3.34	33.1	0.116	-76.2	0.17	99.4
1600	0.17	-137.5	3.41	10.2	0.118	-92.0	0.16	90.5
1800	0.17	-173.3	3.50	-15.1	0.121	-109.6	0.17	77.9
2000	0.22	126.9	3.56	-46.3	0.119	-131.3	0.19	55.7
2200	0.42	68.7	3.24	-82.9	0.099	-158.1	0.20	19.7
2400	0.68	25.6	2.42	-118.6	0.062	-170.7	0.16	-20.1

Model: AC2075

Vcc=+12V

Model: AC2075			Vcc=+12V			lcc=45.57	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	2.16	2.01	10.25	-138		-19.9	
10	1.50	1.78	10.70	-160		-19.7	
50	1.25	1.77	10.68	178	0.9	-19.7	
100	1.25	1.75	10.62	170	0.44	-19.7	
200	1.28	1.65	10.37	157	0.35	-19.4	
400	1.35	1.55	10.07	138	0.27	-19.1	
600	1.38	1.57	10.05	117	0.29	-19.1	
800	1.43	1.56	10.04	96	0.3	-19.0	
1000	1.48	1.52	10.00	75	0.3	-18.9	
1200	1.49	1.49	10.02	54	0.3	-18.7	
1400	1.48	1.46	10.21	32	0.31	-18.3	
1600	1.47	1.46	10.35	9	0.32	-18.1	
1800	1.46	1.48	10.56	-17	0.34	-17.8	
2000	1.67	1.54	10.68	-49	0.46	-17.8	
2200	2.70	1.53	9.67	-85	0.54	-19.2	
2400	5.51	1.36	6.90	-120	0.46	-22.9	

Model: AC2075

LINEAR S-PARAMETERS

Vcc=+12V

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.37	-57.9	3.26	-137.6	0.101	33.0	0.33	-163.4
10	0.20	-53.1	3.43	-160.2	0.104	15.7	0.28	-171.7
50	0.11	-20.3	3.42	177.8	0.103	1.6	0.28	177.2
100	0.11	-18.1	3.40	169.9	0.104	-1.8	0.27	169.6
200	0.12	-24.2	3.30	157.3	0.107	-6.0	0.24	158.8
400	0.15	-51.5	3.19	137.5	0.111	-18.1	0.22	152.5
600	0.16	-73.2	3.18	117.1	0.111	-29.1	0.22	143.7
800	0.18	-88.9	3.18	96.1	0.112	-38.5	0.22	134.3
1000	0.19	-101.3	3.16	75.2	0.114	-49.2	0.21	125.3
1200	0.20	-112.2	3.17	54.1	0.117	-61.3	0.20	116.3
1400	0.20	-125.5	3.24	32.3	0.121	-73.5	0.19	108.7
1600	0.19	-144.4	3.29	9.2	0.125	-88.7	0.19	101.3
1800	0.19	178.3	3.37	-16.6	0.129	-106.6	0.20	89.5
2000	0.25	120.8	3.42	-48.6	0.128	-128.9	0.21	68.3
2200	0.46	65.3	3.04	-85.5	0.109	-156.2	0.21	34.7
2400	0.69	23.5	2.21	-120.1	0.072	-169.6	0.15	-0.5