

AC5079

100 TO 5000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC5079
Ultra Broad Bandwidth	100-5000 MHz
High Output Power	+20.5 dBm
High Second Order I.P.	+55 dBm
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	0.1-5.0 GHz	0.1-5.0 GHz	0.1-5.0 GHz
Small Signal Gain (Min.)	7.5 dB	6.8 dB	6.0 dB
Gain Flatness (Max.)	±0.4 dB	±0.8 dB	±0.9 dB
Noise Figure (Max.)	500-4500 MHz 100-500 MHz	4.7 dB	6.3 [^] dB
		7.0 dB	8.5 dB
SWR (Max.)	Input/Output	1.6:1	2.0:1
Power Output (Min.) @ 1dB comp.	+20.5 dBm	+17.5 dBm	+16.5 dBm
Reverse Isolation	15.0 dB	—	—
DC Current (Max.)	115 mA	120 mA	125 mA

* Measured in a 50-ohm system at +15.0 Vdc unless otherwise specified.
[^] 0.5 dB higher above 4.5 GHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 2500 MHz	AC5079
Second Order Harmonic Intercept Point	+61 dBm
Second Order Two Tone Intercept Point	+55 dBm
Third Order Two Tone Intercept Point	+33 dBm

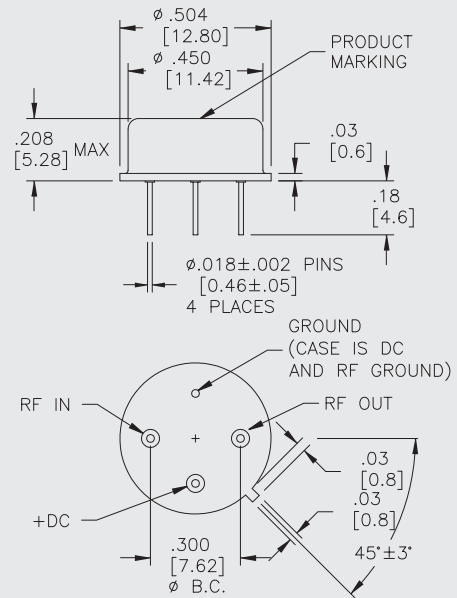
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+105 °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	+85 °C
Thermal Resistance ¹ (θjc)	+37 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+66.8 °C

¹ Thermal resistance is based on total power dissipation.

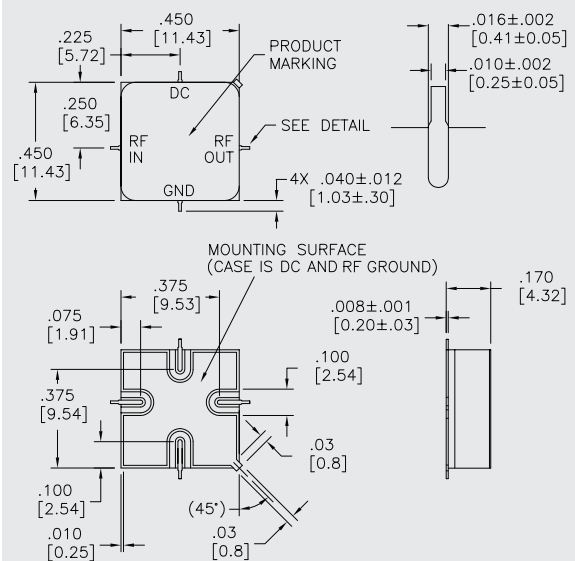
AC5079

TO-8 Package for Amplifiers



AS5079

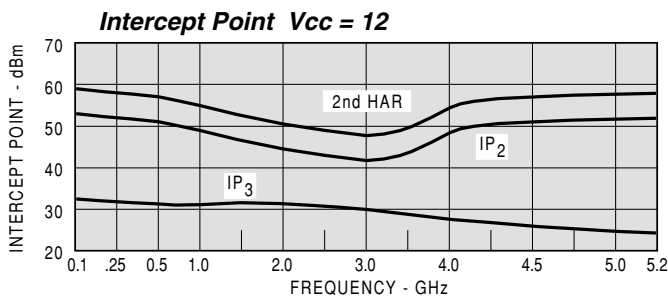
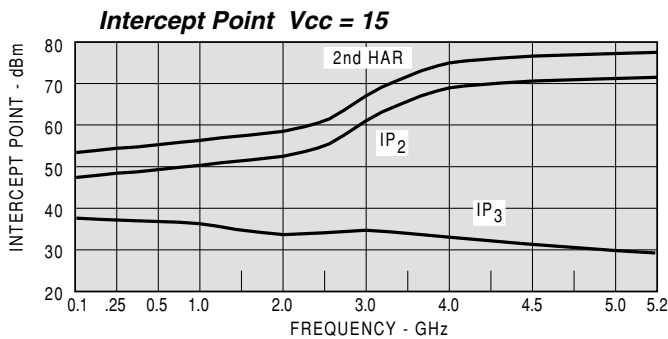
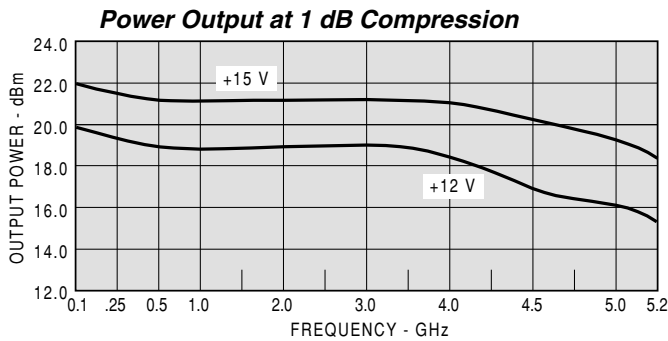
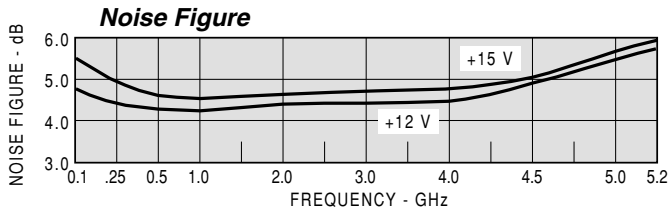
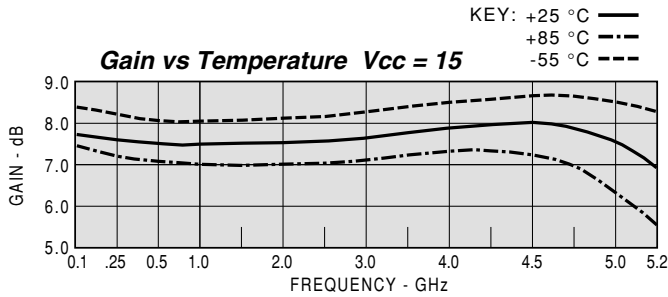
SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



MODEL: AC5079 Vcc = +15V Icc = 115.07 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
50	1.14	1.34	8.1	0.276	-15.5
100	1.14	1.31	8.0	0.276	-15.4
150	1.15	1.28	7.9	0.212	-15.3
200	1.16	1.26	7.9	0.191	-15.2
250	1.16	1.25	7.8	0.174	-15.2
500	1.17	1.22	7.6	0.160	-15.1
1000	1.17	1.20	7.6	0.167	-15.3
1500	1.22	1.17	7.7	0.169	-15.5
2000	1.31	1.21	7.8	0.166	-15.8
2500	1.43	1.39	7.8	0.173	-16.1
3000	1.47	1.60	7.7	0.174	-16.7
3500	1.40	1.68	7.9	0.184	-17.1
4000	1.29	1.59	8.0	0.177	-17.1
4500	1.33	1.36	8.2	0.209	-17.2
5000	1.67	1.23	7.5	0.229	-18.1
5250	1.88	1.35	6.9	0.215	-18.3

MODEL: AC5079 Vcc = +15V Icc = 115.07 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11 MAG	S21 ANG	S12 MAG	S22 ANG	MAG	ANG	MAG	ANG
50	0.07	-15.3	2.54	179.9	0.168	2	0.15	167.4
100	0.07	-7.3	2.51	175.6	0.170	0	0.13	158.2
150	0.07	-7.5	2.49	172.5	0.172	-2	0.12	151.5
200	0.07	-9.6	2.47	169.8	0.174	-3	0.12	145.5
250	0.08	-11.8	2.45	167.4	0.174	-5	0.11	140.5
500	0.08	-30.3	2.41	156.6	0.175	-12	0.10	118.2
1000	0.08	-73.9	2.41	133.7	0.173	-27	0.09	83.0
1500	0.10	-104.8	2.42	110.6	0.168	-42	0.08	32.9
2000	0.14	-130.5	2.44	88.0	0.163	-58	0.09	-33.2
2500	0.18	-149.1	2.44	64.0	0.156	-73	0.16	-84.5
3000	0.19	-170.2	2.44	39.9	0.147	-87	0.23	-112.6
3500	0.17	159.9	2.49	13.9	0.139	-103	0.25	-137.6
4000	0.13	115.4	2.50	-10.8	0.140	-115	0.23	-159.3
4500	0.14	60.4	2.56	-41.2	0.137	-132	0.15	166.6
5000	0.25	26.2	2.36	-75.1	0.124	-145	0.10	78.1
5250	0.31	14.1	2.22	-90.9	0.122	-150	0.15	36.8
5500	0.38	4.3	2.04	-106.9	0.118	-155	0.22	12.7

MODEL: AC5079 Vcc = +12V Icc = 112.36 mA

FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
50	1.15	1.43	8.1	0.271	-15.8
100	1.15	1.38	8.0	0.271	-15.6
150	1.16	1.35	7.9	0.211	-15.6
200	1.17	1.33	7.8	0.186	-15.5
250	1.17	1.31	7.8	0.173	-15.5
500	1.18	1.27	7.6	0.159	-15.4
1000	1.18	1.24	7.7	0.165	-15.5
1500	1.22	1.18	7.7	0.167	-15.7
2000	1.31	1.18	7.8	0.164	-15.9
2500	1.44	1.33	7.8	0.172	-16.2
3000	1.47	1.54	7.8	0.173	-16.6
3500	1.42	1.63	8.0	0.182	-16.9
4000	1.32	1.56	7.9	0.178	-16.8
4500	1.35	1.35	8.2	0.205	-16.8
5000	1.68	1.08	7.6	0.226	-17.4
5250	1.89	1.17	7.0	0.217	-17.6

MODEL: AC5079 Vcc = +12V Icc = 112.36 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11 MAG	S21 ANG	S12 MAG	S22 ANG	MAG	ANG	MAG	ANG
50	0.07	1.9	2.54	-154.1	0.163	28	0.18	-162.8
100	0.07	-7.5	2.50	175.8	0.165	0	0.16	162.5
150	0.07	-7.7	2.49	172.7	0.167	-1	0.15	156.4
200	0.08	-8.9	2.47	170.0	0.169	-3	0.14	151.2
250	0.08	-10.6	2.45	167.6	0.169	-4	0.14	146.9
500	0.08	-28.1	2.41	157.0	0.170	-12	0.12	128.1
1000	0.08	-70.4	2.42	134.4	0.168	-26	0.11	97.1
1500	0.10	-101.2	2.42	111.5	0.165	-40	0.08	52.9
2000	0.13	-127.7	2.45	89.1	0.160	-55	0.08	-16.4
2500	0.18	-147.5	2.45	65.4	0.155	-69	0.14	-75.8
3000	0.19	-167.9	2.45	41.4	0.148	-84	0.21	-104.4
3500	0.17	161.1	2.50	15.8	0.142	-99	0.24	-127.6
4000	0.14	117.0	2.50	-9.0	0.145	-112	0.22	-145.0
4500	0.15	62.4	2.56	-38.9	0.145	-128	0.15	-166.4
5000	0.25	27.7	2.40	-72.3	0.134	-141	0.04	113.4
5250	0.31	15.3	2.25	-88.3	0.132	-147	0.08	31.5
5500	0.38	5.8	2.07	-104.4	0.131	-153	0.16	6.6