

AC4079

100 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC4079
Ultra Broad Bandwidth	100-4000 MHz
Low Noise Figure	4.8 dB
High Output Level	+22.0 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	100-4000 MHz	100-4000 MHz	100-4000 MHz
Small Signal Gain (Min.)	8.3 dB	7.5 dB	7.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.) 200-4000 MHz	4.8 dB	5.5 dB	6.0 dB
SWR (Max.) Input/Output	1.4:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+22.0 dBm	+20.5 dBm	+20.0 dBm
Reverse Isolation	16.0 dB	—	—
DC Current (Max.)	115.0 mA	120.0 mA	126.0 mA

* Measured in a 50-ohm system at +15.0 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

(Typical @ 25 °C)	AC4079
Second Order Harmonic Intercept Point	+61 dBm
Second Order Two Tone Intercept Point	+55 dBm
Third Order Two Tone Intercept Point	+35 dBm

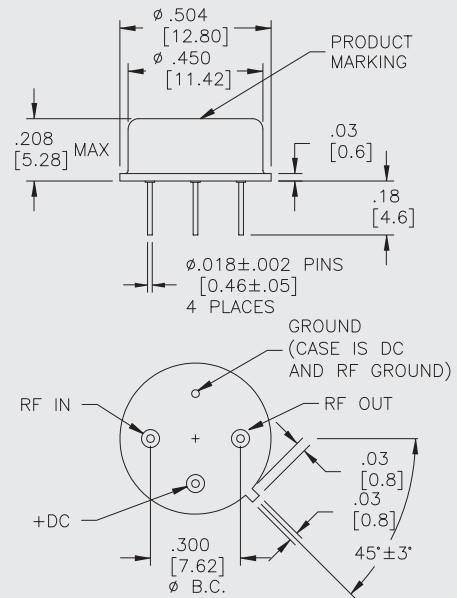
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+105 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+15 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.25 Watt
Burn-in Temperature	+85 °C
Thermal Resistance ¹ (θ _{jc})	+37 °C/Watt
Junction Temperature Rise Above Case (T _{jc})	+66.8 °C

¹ Thermal resistance is based on total power dissipation.

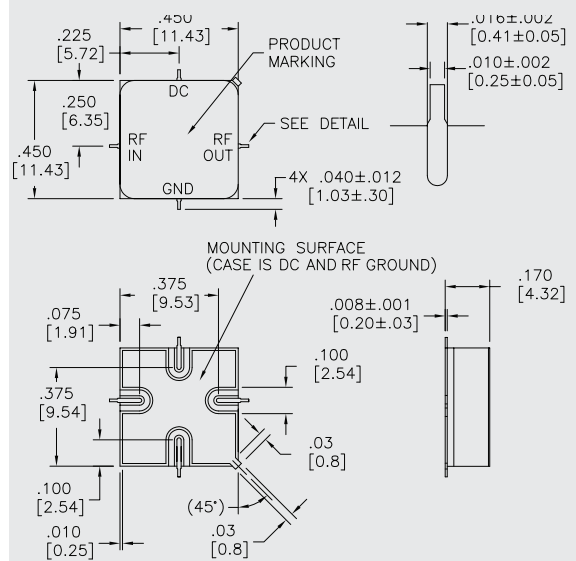
AC4079

TO-8 Package for Amplifiers



AS4079

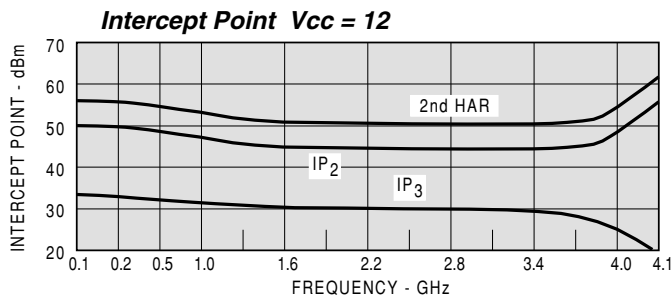
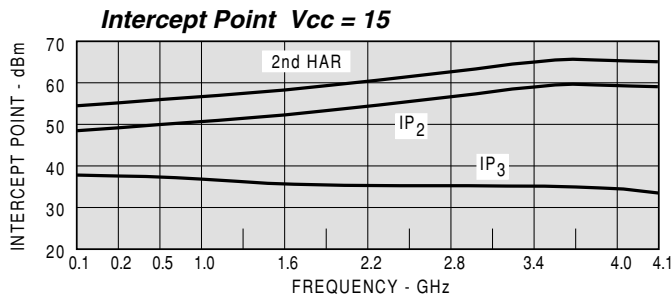
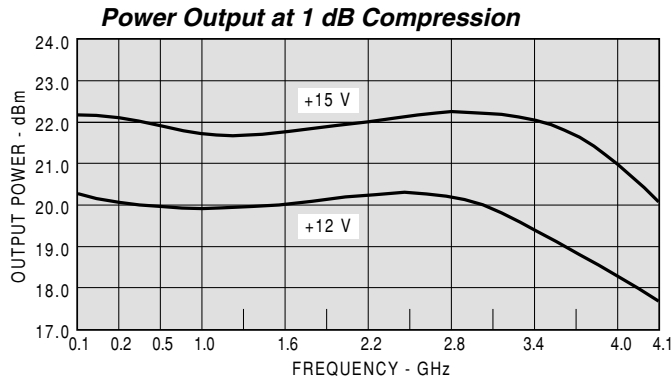
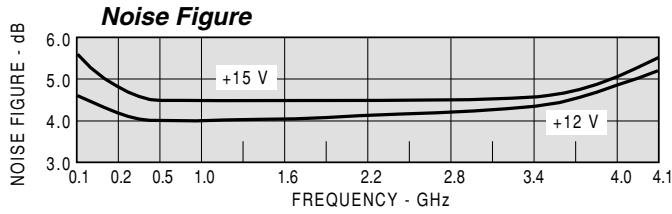
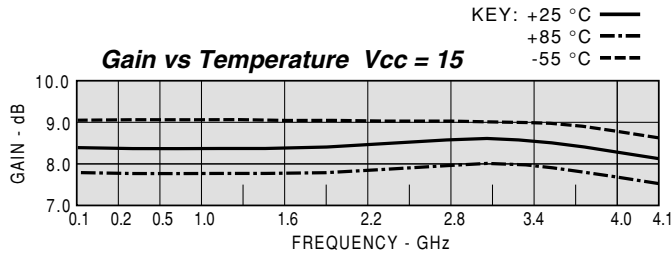
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



MODEL: AC4079			Vcc = +15V		GROUP DELAY		Icc = 114.18 mA	
FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB		NSEC	REV/ISO DB		
50	1.30	1.25	8.5					
100	1.30	1.21	8.3					
400	1.32	1.19	8.4		0.212			
700	1.25	1.22	8.4		0.197			
1000	1.20	1.23	8.4		0.208			
1300	1.21	1.23	8.3		0.204			
1600	1.18	1.22	8.3		0.209			
1900	1.22	1.21	8.3		0.200			
2200	1.25	1.25	8.5		0.201			
2500	1.24	1.30	8.7		0.212			
2800	1.24	1.36	8.6		0.228			
3100	1.20	1.38	8.9		0.225			
3400	1.14	1.36	8.8		0.225			
3700	1.11	1.29	8.5		0.231			
4000	1.22	1.18	8.2		0.244			
4100	1.31	1.14	8.3		0.243			

MODEL: AC4079			Vcc = +15V				Icc = 114.18 mA			
FREQ. MHZ	S11		S21		S12		S22		MAG	ANG
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
50	0.13	-16.0	2.66	-179.9	0.157	2	0.11	160.8		
100	0.13	-3.3	2.61	173.4	0.160	-1	0.10	149.0		
400	0.14	-15.4	2.63	150.3	0.160	-19	0.09	124.5		
700	0.11	-23.9	2.62	129.4	0.159	-33	0.10	95.3		
1000	0.09	-35.2	2.62	107.0	0.158	-47	0.10	70.6		
1300	0.09	-56.5	2.61	84.5	0.156	-61	0.10	44.3		
1600	0.08	-73.4	2.61	61.9	0.152	-75	0.10	15.3		
1900	0.10	-82.8	2.59	40.5	0.152	91	0.09	-21.2		
2200	0.11	-100.8	2.67	19.0	0.148	-105	0.11	61.3		
2500	0.11	-117.1	2.72	-4.0	0.146	-120	0.13	94.0		
2800	0.11	-137.8	2.69	-28.3	0.146	-136	0.15	-121.6		
3100	0.09	-147.0	2.79	-52.8	0.142	-151	0.16	-143.6		
3400	0.07	-137.4	2.76	-77.0	0.141	-167	0.15	-164.3		
3700	0.05	-106.7	2.67	-101.9	0.138	179	0.13	-179.6		
4000	0.10	-60.5	2.57	-127.9	0.136	163	0.08	165.6		
4100	0.13	-53.9	2.61	-137.7	0.136	158	0.07	155.2		

MODEL: AC4079			Vcc = +12V		GROUP DELAY		Icc = 106.74 mA	
FREQ. MHZ	VSWR IN	VSWR OUT	GAIN DB		NSEC	REV/ISO DB		
50	1.31	1.33	8.6					
100	1.28	1.28	8.4					
400	1.28	1.26	8.5		0.212			
700	1.22	1.29	8.5		0.195			
1000	1.21	1.30	8.5		0.209			
1300	1.21	1.29	8.4		0.205			
1600	1.20	1.27	8.4		0.208			
1900	1.24	1.24	8.4		0.196			
2200	1.24	1.25	8.7		0.204			
2500	1.27	1.28	8.8		0.208			
2800	1.28	1.32	8.7		0.228			
3100	1.22	1.35	9.0		0.222			
3400	1.19	1.33	9.0		0.228			
3700	1.11	1.27	8.6		0.230			
4000	1.21	1.20	8.3		0.244			
4100	1.27	1.18	8.4		0.258			

MODEL: AC4079			Vcc = +12V				Icc = 106.74 mA			
FREQ. MHZ	S11		S21		S12		S22		MAG	ANG
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG		
50	0.13	-21.3	2.68	-179.6	0.150	2	0.14	166.1		
100	0.12	-5.7	2.62	173.6	0.154	-1	0.12	155.8		
400	0.12	-15.2	2.66	15.7	0.154	-18	0.12	132.4		
700	0.10	-21.5	2.66	129.6	0.153	-31	0.13	104.4		
1000	0.09	-33.9	2.65	107.3	0.153	-45	0.13	80.4		
1300	0.09	-50.1	2.64	85.0	0.152	-58	0.13	54.6		
1600	0.09	-69.1	2.64	62.4	0.150	-73	0.12	28.8		
1900	0.11	-80.2	2.63	41.4	0.148	-87	0.11	-3.6		
2200	0.11	-100.3	2.71	19.5	0.146	-102	0.11	-42.6		
2500	0.12	-116.2	2.74	-3.2	0.148	-117	0.12	-77.8		
2800	0.12	-128.8	2.72	-27.9	0.149	-132	0.14	-107.7		
3100	0.10	-144.3	2.83	-51.3	0.149	-148	0.15	-130.5		
3400	0.08	-156.9	2.81	-76.5	0.147	-164	0.14	-149.0		
3700	0.05	-141.4	2.70	-101.2	0.146	-179	0.12	-160.3		
4000	0.10	-64.7	2.59	-127.0	0.147	166	0.09	-165.1		
4100	0.12	-58.2	2.64	-136.6	0.147	161	0.08	-138.8		