

AP2079

10 TO 2000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

High Third Order I.P.	AP2079 38 dBm
High Power Output	+24.5 dBm
Low Noise Figure	3.1 dB
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-2100 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	10.3 dB	9.7 dB	9.0 dB
Gain Flatness (Max.)	±0.4 dB	±0.6 dB	±0.7 dB
Noise Figure (Max.) 250-2000 MHz	3.1 dB	3.6 dB	4.3 dB
SWR (Max.) Input/Output	1.6:1	1.8:1	2.0:1
Power Output (Min.) @ 1dB comp.	+24.5 dBm	+23.5 dBm	+23.0 dBm
Reverse Isolation	17.0 dB	—	—
DC Current (Max.)	125 mA	128 mA	132 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C

Second Order Harmonic Intercept Point.	AP2079 +60 dBm
Second Order Two Tone Intercept Point	+54 dBm
Third Order Two Tone Intercept Point	+38 dBm

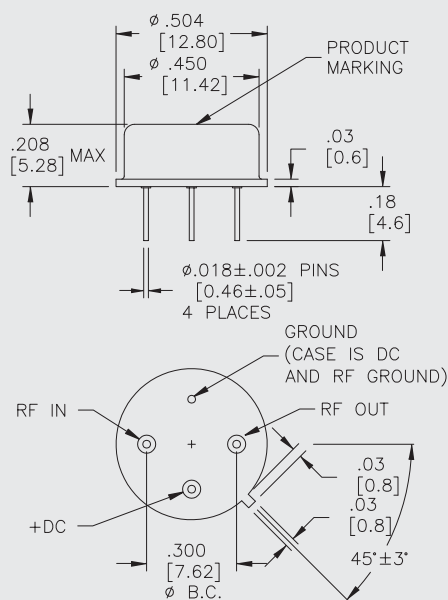
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °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.)	200 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+105 °C
Thermal Resistance ¹ (θ _{jc})	+21 °C/Watt
Junction Temperature Rise Above Case (T _{jc})	+39.5 °C

¹ Thermal resistance is based on total power dissipation.

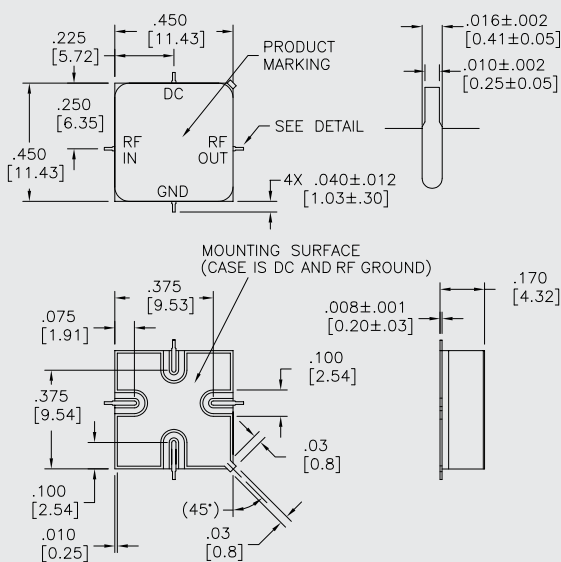
AP2079

TO-8 Package for Amplifiers



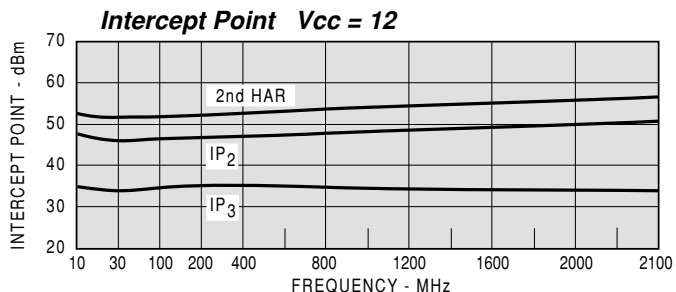
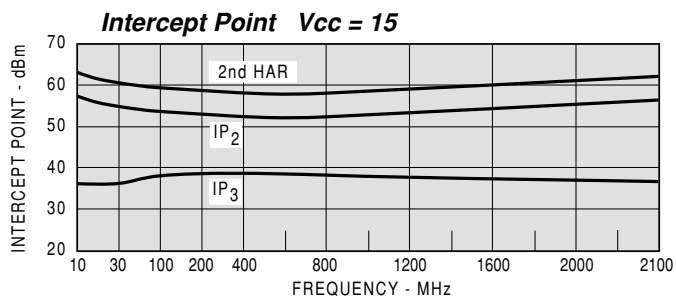
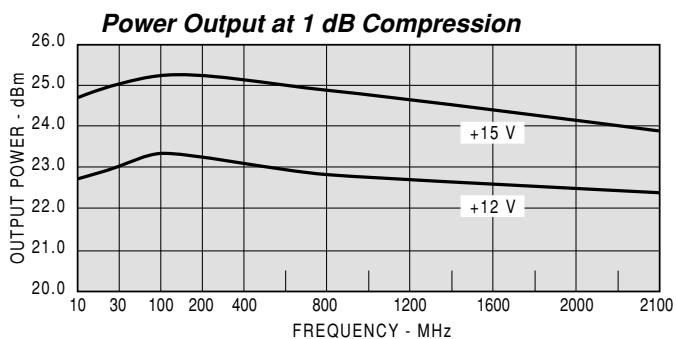
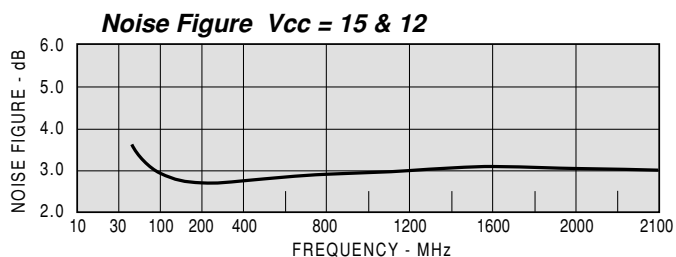
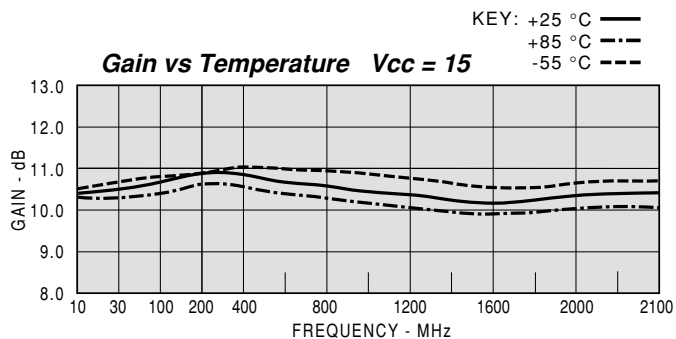
APS2079

SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: AP2079				Vcc=+15V			Icc=123.16	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
10	1.52	1.44	10.21	-157		-16.9		
15	1.32	1.41	10.28	-166		-16.9		
20	1.23	1.41	10.31	-170		-16.9		
50	1.10	1.46	10.32	-179	0.79	-17.1		
100	1.06	1.51	10.51	175	0.34	-17.4		
200	1.04	1.58	10.71	165	0.30	-17.6		
400	1.11	1.58	10.67	145	0.27	-17.7		
600	1.18	1.57	10.52	127	0.25	-17.7		
800	1.23	1.55	10.43	110	0.24	-17.6		
1000	1.28	1.52	10.32	93	0.24	-17.7		
1200	1.32	1.50	10.25	76	0.24	-17.6		
1400	1.36	1.50	10.13	58	0.24	-17.6		
1600	1.39	1.53	10.08	42	0.23	-17.5		
1800	1.37	1.58	10.16	24	0.24	-17.5		
2000	1.33	1.66	10.28	7	0.24	-17.4		
2200	1.24	1.80	10.43	-11	0.25	-17.3		

Model: AP2079				Vcc=+15V			Icc=123.16	
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.21	-78.8	3.24	-157.2	0.143	16.3	0.18	-176.3
15	0.14	-80.6	3.27	-165.5	0.143	9.6	0.17	-174.7
20	0.10	-80.7	3.28	-170.0	0.142	6.0	0.17	-174.2
50	0.05	-78.1	3.28	-178.5	0.139	-1.2	0.19	-175.7
100	0.03	-97.9	3.35	175.4	0.136	-6.1	0.20	-179.6
200	0.02	165.6	3.43	164.7	0.132	-11.0	0.22	166.5
400	0.05	93.0	3.41	145.3	0.130	-19.9	0.23	143.1
600	0.08	71.8	3.36	127.4	0.131	-30.0	0.22	124.2
800	0.10	56.2	3.32	110.2	0.131	-39.4	0.21	105.2
1000	0.12	42.2	3.28	93.1	0.131	-50.6	0.21	85.9
1200	0.14	28.9	3.25	75.7	0.132	-61.2	0.20	65.3
1400	0.15	16.8	3.21	58.4	0.132	-73.5	0.20	43.3
1600	0.16	4.0	3.19	41.8	0.133	-85.8	0.21	21.0
1800	0.16	-9.1	3.22	24.3	0.134	-98.6	0.22	-0.1
2000	0.14	-20.6	3.27	6.8	0.135	-112.5	0.25	-20.2
2200	0.11	-29.8	3.32	-11.3	0.136	-128.7	0.28	-40.5

Model: AP2079				Vcc=+12V			Icc=105.92	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO		
MHZ	IN	OUT	DB	DEG	NSEC	DB		
10	1.52	1.51	10.14	-157		-17.2		
15	1.32	1.49	10.23	-166		-17.2		
20	1.23	1.49	10.25	-170		-17.2		
50	1.10	1.54	10.28	-179	0.80	-17.4		
100	1.06	1.60	10.47	175	0.33	-17.7		
200	1.03	1.67	10.68	165	0.30	-17.9		
400	1.11	1.68	10.64	145	0.27	-18.0		
600	1.18	1.66	10.50	128	0.25	-17.9		
800	1.23	1.63	10.39	110	0.24	-17.8		
1000	1.28	1.59	10.31	93	0.24	-17.8		
1200	1.33	1.56	10.23	76	0.24	-17.6		
1400	1.36	1.54	10.15	59	0.24	-17.5		
1600	1.39	1.55	10.11	42	0.23	-17.4		
1800	1.37	1.57	10.22	25	0.24	-17.2		
2000	1.31	1.64	10.35	7	0.25	-17.0		
2200	1.21	1.75	10.53	-12	0.26	-16.8		

Model: AP2079				Vcc=+12V			Icc=105.92	
FREQ.	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
10	0.20	-77.5	3.21	-157.4	0.138	15.7	0.20	-171.6
15	0.14	-78.7	3.25	-165.6	0.138	9.1	0.20	-171.9
20	0.10	-77.8	3.25	-170.0	0.138	5.8	0.20	-172.3
50	0.05	-73.8	3.27	-178.6	0.136	-1.0	0.21	-175.2
100	0.03	-92.1	3.34	175.4	0.131	-6.0	0.23	-179.7
200	0.02	162.5	3.42	164.7	0.127	-10.5	0.25	167.9
400	0.05	88.7	3.40	145.5	0.126	-18.2	0.25	146.5
600	0.08	69.3	3.35	127.6	0.127	-27.4	0.25	129.6
800	0.11	53.9	3.31	110.3	0.129	-36.8	0.24	112.5
1000	0.12	39.7	3.28	93.4	0.129	-46.8	0.23	95.8
1200	0.14	26.3	3.25	76.0	0.133	-57.3	0.22	77.6
1400	0.15	14.2	3.22	58.7	0.133	-68.9	0.21	57.9
1600	0.16	1.2	3.20	42.1	0.135	-80.5	0.22	37.3
1800	0.16	-13.1	3.24	24.6	0.139	-92.9	0.22	17.6
2000	0.14	-25.6	3.29	6.9	0.142	-106.4	0.24	-2.1
2200	0.10	-37.5	3.36	-11.5	0.145	-122.0	0.27	-23.3