AC1019 10 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	*AC1019*
High Dynamic Range	*+116 dBm*
High Output Power	*+22.0 dBm*
High Third Order I.P.	*+35.0 dBm*

High Performance Thin Film

Standard Size TO-8

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50° C	Guaranteed -55 to +85° C
Frequency (Min.)	**5-1100 MHz**	**10-1000 MHz**	**10-1000 MHz**
Small Signal Gain (Min.)	11.5 dB	10.5 dB	10.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	4.5 dB	6.0 dB	6.5 dB
SWR (Max.) Input/Output	< 1.5:1	1.8:1	2.0:1
Power Output (Min.) dBm @ 1dB comp.	**12V** +19.0 **15V** +22.0	**12V** +17.5 **15V** +20.0	**12V** +17.0 **15V** +19.5
DC Current (Max.) mA	70.0 90.0	75.0 94.0	78.0 98.0

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

INTERMODULATION PERFORMANCE

Typical @ 25° C; 500 MHz	*AC1019*
Second Order Harmonic Intercept Point	+50 dBm
Second Order Two Tone Intercept Point	+44 dBm
Third Order Two Tone Intercept Point	+35 dBm

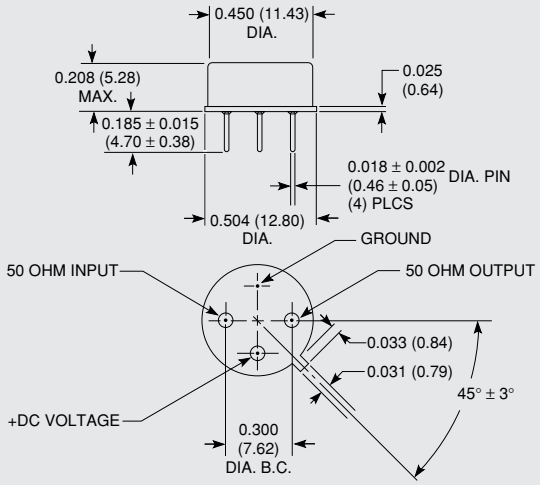
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to 125° C
Maximum Case Temperature	+125° C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+100° C
Thermal Resistance[1] (θjc)	+26° C/Watt
Junction Temperature Rise Above Case (Tjc)	+36.8° C

[1]Thermal resistance is based on total power dissipation.

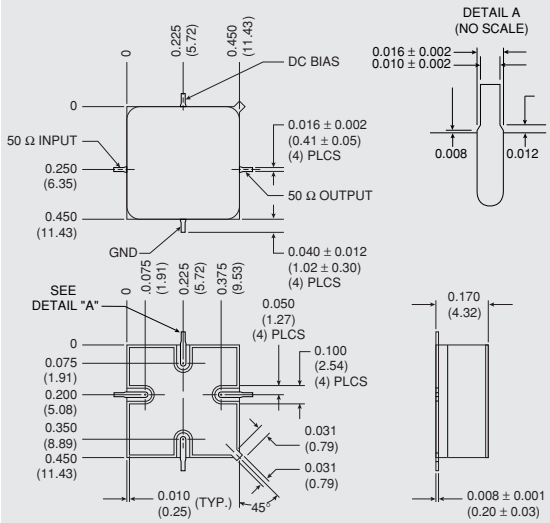
AC1019

TO-8 Package for Amplifiers



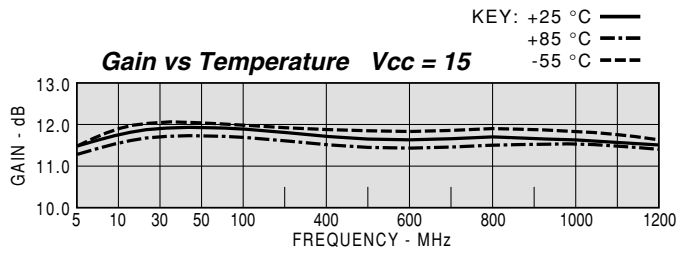
AS1019

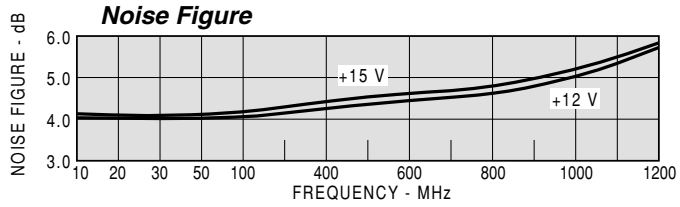
SMTO-8 Package for Amplifiers

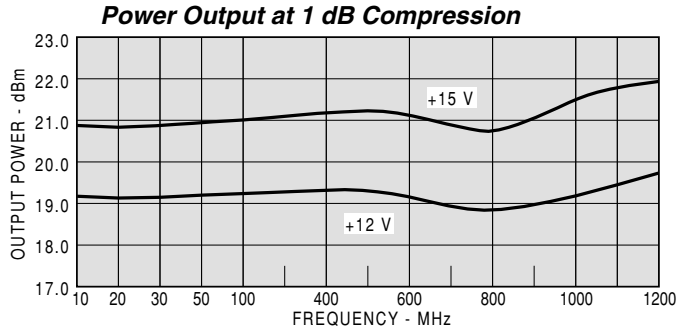


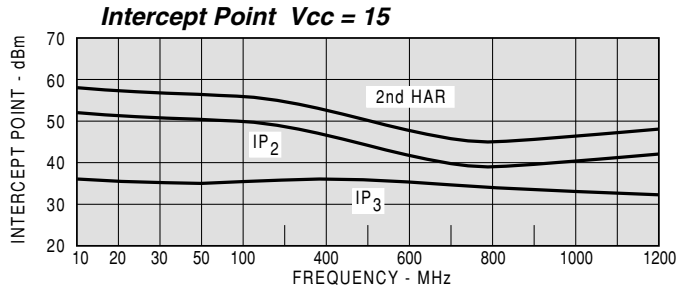
DIMENSIONS ARE IN INCHES (MILLIMETERS)

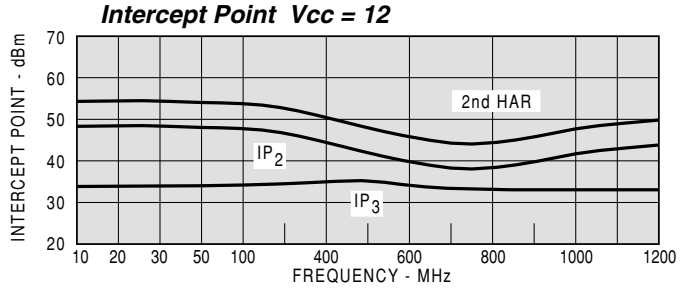
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: AC1019 Vcc=+15V Icc=88.57

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
5	1.80	1.40	10.88	-150		-16.5
10	1.43	1.33	11.26	-166		-16.5
20	1.32	1.31	11.43	-175	2.6	-16.4
50	1.28	1.30	11.48	175	0.93	-16.4
100	1.27	1.30	11.45	165	0.56	-16.4
200	1.28	1.32	11.34	147	0.48	-16.4
300	1.31	1.34	11.23	131	0.45	-16.3
400	1.34	1.35	11.14	115	0.44	-16.2
500	1.34	1.34	11.14	99	0.44	-16.0
600	1.34	1.30	11.14	84	0.44	-15.8
700	1.30	1.22	11.22	67	0.45	-15.5
800	1.22	1.14	11.34	50	0.47	-15.3
900	1.11	1.19	11.47	33	0.49	-15.0
1000	1.07	1.45	11.63	14	0.53	-14.7
1100	1.31	1.92	11.71	-6	0.56	-14.5
1200	1.74	2.82	11.63	-29	0.62	-14.5

LINEAR S-PARAMETERS

Model: AC1019 Vcc=+15V Icc=88.57

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.29	-99.2	3.50	-150.2	0.149	26.3	0.17	-147.7
10	0.18	-121.0	3.66	-165.8	0.149	12.5	0.14	-163.3
20	0.14	-142.8	3.73	-175.0	0.151	5.2	0.13	-175.7
50	0.12	-160.7	3.75	174.9	0.151	-0.9	0.13	170.8
100	0.12	-164.8	3.74	164.7	0.151	-6.2	0.13	157.0
200	0.12	-161.5	3.69	147.4	0.152	-14.2	0.14	133.2
300	0.13	-157.6	3.65	131.2	0.153	-21.6	0.14	114.9
400	0.14	-155.8	3.60	115.3	0.155	-29.5	0.15	99.7
500	0.15	-157.3	3.61	99.4	0.158	-37.2	0.14	87.7
600	0.15	-159.6	3.60	83.6	0.162	-45.5	0.13	80.2
700	0.13	-162.0	3.64	67.4	0.168	-54.6	0.10	79.2
800	0.10	-165.1	3.69	50.4	0.172	-64.4	0.07	100.4
900	0.05	-161.0	3.75	33.0	0.178	-75.0	0.09	149.1
1000	0.03	-42.9	3.81	13.8	0.183	-86.8	0.18	160.3
1100	0.14	-24.3	3.85	-6.5	0.188	-100.2	0.32	152.9
1200	0.27	-30.9	3.81	-28.8	0.189	-115.4	0.48	138.7

Model: AC1019 Vcc=+12V Icc=70.25

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
5	1.79	1.39	10.83	-151		-16.5
10	1.42	1.32	11.22	-166		-16.5
20	1.31	1.30	11.39	-175	2.6	-16.4
50	1.27	1.28	11.45	175	0.92	-16.4
100	1.27	1.29	11.42	165	0.56	-16.4
200	1.28	1.30	11.30	147	0.48	-16.3
300	1.31	1.32	11.20	131	0.45	-16.3
400	1.35	1.32	11.11	115	0.44	-16.1
500	1.36	1.31	11.11	99	0.45	-15.9
600	1.36	1.27	11.11	83	0.44	-15.7
700	1.33	1.20	11.20	67	0.45	-15.3
800	1.24	1.15	11.32	50	0.48	-15.1
900	1.13	1.26	11.45	32	0.49	-14.8
1000	1.05	1.56	11.62	12	0.54	-14.5
1100	1.31	2.11	11.66	-8	0.57	-14.3
1200	1.77	3.18	11.55	-31	0.64	-14.2

LINEAR S-PARAMETERS

Model: AC1019 Vcc=+12V Icc=70.25

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.28	-99.1	3.48	-150.6	0.150	25.8	0.16	-146.3
10	0.17	-120.9	3.64	-165.9	0.150	12.4	0.14	-162.3
20	0.13	-142.6	3.71	-175.2	0.151	5.3	0.13	-175.3
50	0.12	-160.1	3.74	174.8	0.152	-0.8	0.12	171.5
100	0.12	-163.9	3.73	164.7	0.151	-6.0	0.13	157.7
200	0.12	-160.1	3.67	147.3	0.152	-14.0	0.13	134.9
300	0.14	-156.6	3.63	131.0	0.153	-21.3	0.14	117.3
400	0.15	-154.4	3.59	115.0	0.156	-28.9	0.14	102.8
500	0.15	-156.7	3.59	99.0	0.160	-36.9	0.13	91.7
600	0.15	-159.4	3.59	83.0	0.164	-45.2	0.12	86.3
700	0.14	-162.7	3.63	66.7	0.171	-54.2	0.09	90.5
800	0.11	-168.0	3.68	49.5	0.176	-63.8	0.07	120.8
900	0.06	-169.6	3.74	31.8	0.181	-74.4	0.11	156.0
1000	0.02	-28.3	3.81	12.4	0.188	-86.8	0.22	160.2
1100	0.13	-18.5	3.83	-8.2	0.193	-100.5	0.36	151.6
1200	0.28	-28.2	3.78	-31.1	0.194	-116.0	0.52	136.9