

AC1569

10 TO 1500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values

High Output Power	AC1569 +21.0 dBm
Medium Gain	17.0 dB
High Third Order I.P.	33 mA
High Performance Thin Film Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	10-1600 MHz	10-1500 MHz	10-1500 MHz
Small Signal Gain (Min.)	17.0 dB	16.0 dB	15.5 dB
Gain Flatness (Max.)	< ±0.3 dB	±0.5 dB	±0.8 dB
Noise Figure (Max.)	5.5 dB	7.0 dB	7.5 dB
SWR (Max.)	Input	1.7:1	1.8:1
	Output	2.0:1	2.1:1
Power Output (Min.) @ 1dB comp.	+21.0 dBm	+19.0 dBm	+19.0 dBm
Reverse Isolation	29.0 dB	—	—
DC Current (Max.)	130.0 mA	135.0 mA	140.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	+12 volts	+15 volts
Second Order Harmonic Intercept Point	60 dBm	58 dBm
Second Order Two Tone Intercept Point	54 dBm	52 dBm
Third Order Two Tone Intercept Point	32 dBm	33 dBm

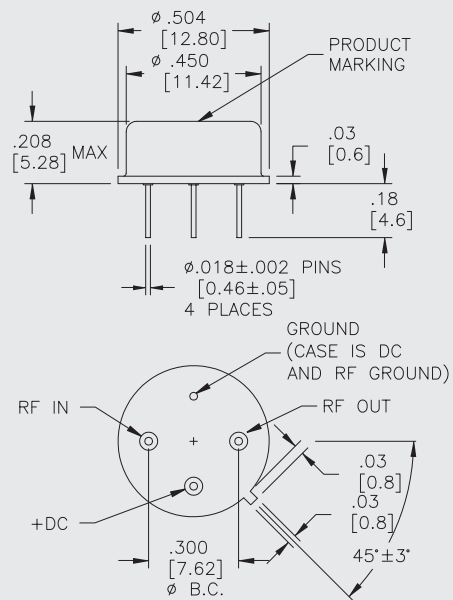
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 μsec Max.)	0.5 Watt
Burn-in Temperature	+85 °C
Thermal Resistance ¹ (θ _{jc})	+19 °C/Watt
Junction Temperature Rise Above Case (T _{jc})	+38.7 °C

¹ Thermal resistance is based on total power dissipation.

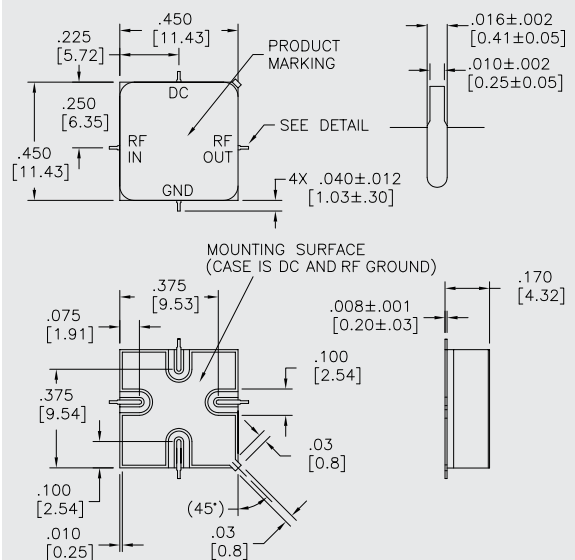
AC1569

TO-8 Package for Amplifiers



AS1569

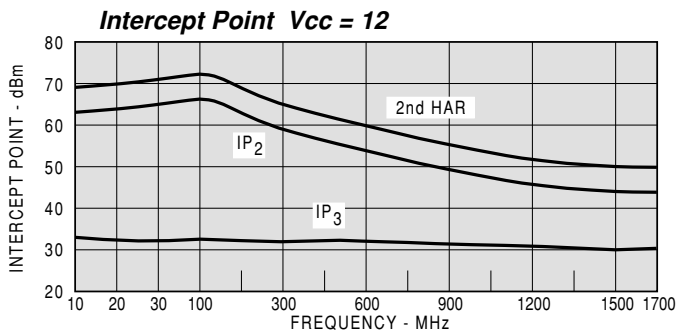
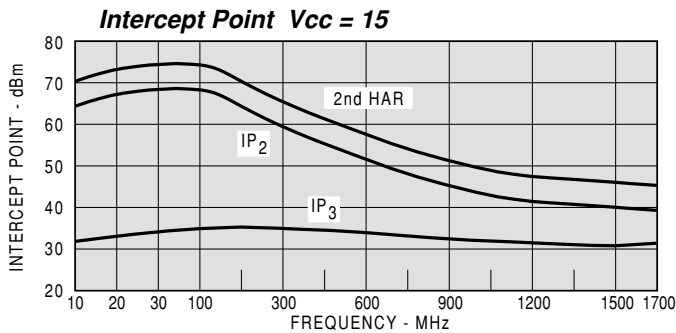
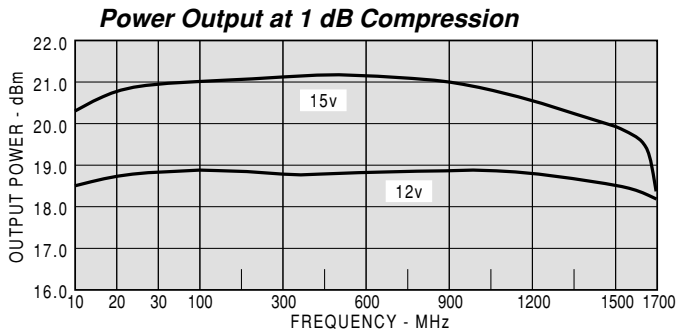
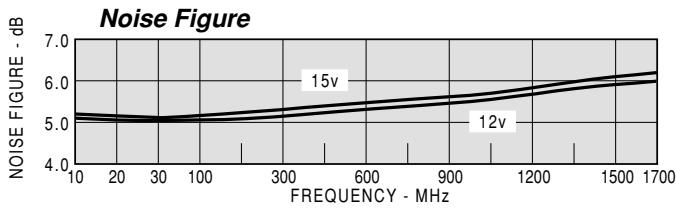
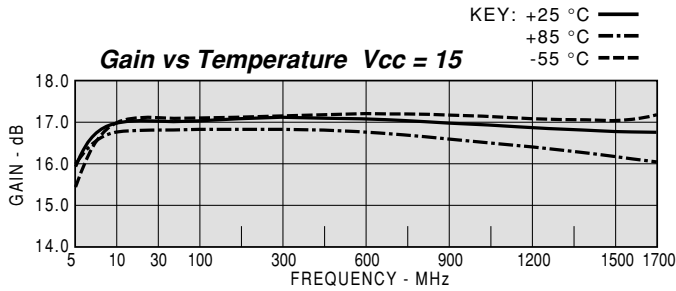
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AC1569			Vcc=+15V			Icc=129.06	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.31	2.20	16.07	54		-30.8	
10	1.13	1.50	17.02	25		-29.9	
20	1.10	1.30	17.12	9		-29.7	
50	1.09	1.25	17.06	-4	1.2	-29.9	
100	1.08	1.25	17.06	-15	0.62	-29.8	
200	1.08	1.26	17.08	-34	0.52	-29.8	
300	1.08	1.24	17.07	-52	0.5	-29.7	
400	1.09	1.22	17.06	-69	0.49	-29.8	
500	1.10	1.18	17.06	-87	0.49	-29.7	
600	1.12	1.15	17.05	-105	0.49	-29.6	
700	1.14	1.12	17.04	-122	0.49	-29.4	
800	1.16	1.09	17.04	-140	0.49	-29.5	
900	1.18	1.09	17.00	-158	0.49	-29.5	
1000	1.19	1.09	17.01	-175	0.49	-29.5	
1100	1.18	1.10	17.00	167	0.49	-29.1	
1200	1.18	1.14	17.01	149	0.5	-29.0	
1300	1.18	1.21	17.04	131	0.51	-28.6	
1400	1.22	1.32	17.03	113	0.5	-28.4	
1500	1.30	1.47	17.09	94	0.54	-28.4	
1600	1.43	1.69	17.00	75	0.52	-28.0	
1700	1.64	1.98	17.10	55	0.55	-27.3	

Model: AC1569

Vcc=+15V

Icc=129.06

LINEAR S-PARAMETERS

FREQ.	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.13	-140.5	6.36	54.2	0.029	63.1	0.38	143.2
10	0.06	-151.7	7.10	25.0	0.032	30.4	0.20	85.7
20	0.05	-159.0	7.18	9.0	0.033	13.2	0.13	43.9
50	0.04	-170.1	7.12	-3.8	0.032	4.9	0.11	19.8
100	0.04	-172.0	7.13	-14.9	0.032	-2.0	0.11	10.9
200	0.04	-163.7	7.14	-33.7	0.032	-9.1	0.12	2.9
300	0.04	-152.8	7.14	-51.6	0.033	-13.0	0.11	-2.8
400	0.04	-139.8	7.13	-69.3	0.032	-16.4	0.10	-7.7
500	0.05	-134.6	7.12	-87.0	0.033	-22.4	0.08	-10.4
600	0.06	-132.7	7.12	-104.6	0.033	-27.7	0.07	-15.5
700	0.07	-130.5	7.11	-122.2	0.034	-33.6	0.06	-21.5
800	0.08	-133.1	7.11	-139.8	0.033	-39.1	0.05	-29.8
900	0.08	-137.7	7.08	-157.6	0.034	-43.4	0.04	-42.2
1000	0.09	-144.5	7.09	-175.1	0.033	-50.5	0.04	-55.0
1100	0.08	-156.2	7.08	-167.1	0.035	-56.7	0.05	-71.4
1200	0.08	-174.9	7.09	149.3	0.035	-63.6	0.06	-88.6
1300	0.08	160.7	7.12	131.0	0.037	-69.2	0.10	-102.9
1400	0.10	132.9	7.11	113.0	0.038	-77.0	0.14	-114.0
1500	0.13	109.2	7.16	93.6	0.038	-86.3	0.19	-124.8
1600	0.18	88.2	7.08	74.7	0.040	-94.7	0.26	-134.2
1700	0.24	73.7	7.16	55.0	0.043	-104.5	0.33	-143.4

Model: AC1569

Vcc=+12V

Icc=101.91

FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.30	2.19	15.96	54		-30.9
10	1.13	1.50	16.90	25		-29.9
20	1.10	1.31	17.00	9		-29.8
50	1.09	1.25	16.93	-5	1.2	-29.7
100	1.08	1.25	16.93	-17	0.66	-29.9
200	1.07	1.26	16.94	-37	0.57	-29.8
300	1.08	1.25	16.93	-57	0.55	-29.6
400	1.09	1.23	16.91	-76	0.54	-29.6
500	1.11	1.20	16.90	-95	0.54	-29.7
600	1.13	1.16	16.90	-114	0.53	-29.5
700	1.16	1.14	16.87	-134	0.54	-29.2
800	1.18	1.12	16.88	-153	0.54	-29.3
900	1.20	1.12	16.83	-172	0.54	-29.3
1000	1.21	1.13	16.82	168	0.53	-29.3
1100	1.21	1.16	16.79	149	0.54	-28.7
1200	1.21	1.22	16.80	130	0.54	-28.7
1300	1.22	1.31	16.82	110	0.56	-28.2
1400	1.26	1.44	16.78	90	0.54	-27.9
1500	1.34	1.63	16.82	69	0.59	-27.9
1600	1.47	1.90	16.67	48	0.57	-27.4
1700	1.70	2.25	16.76	27	0.6	-26.9