TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AP560

10 TO 500 MHz
TO-8 CASCADABLE AMPLIFIER

Typical Values	AP560
High Gain	13.0 dB
High Output Power	+24.5 dBm
High Third Order I.P.	+40 dBm
High Performance Thin Film	
Standard Size TO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)	10-600 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)	13.0 dB	12.5 dB	12.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	4.6 dB	5.5 dB	6.0 dB
SWR (Max.) Input/Output	1.4:1	1.7:1	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.)	130 mA	140 mA	145 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 300 MHz	AP560
Second Order Harmonic Intercept Point	+51 dBm
Second Order Two Tone Intercept Point	+45 dBm
Third Order Two Tone Intercept Point	+40 dBm

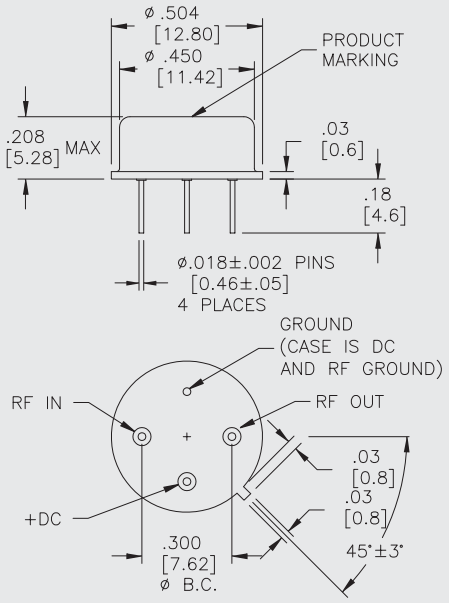
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+15 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)	15.1 °C/Watt
Junction Temperature Rise Above Case (Tjc)	30.5 °C

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

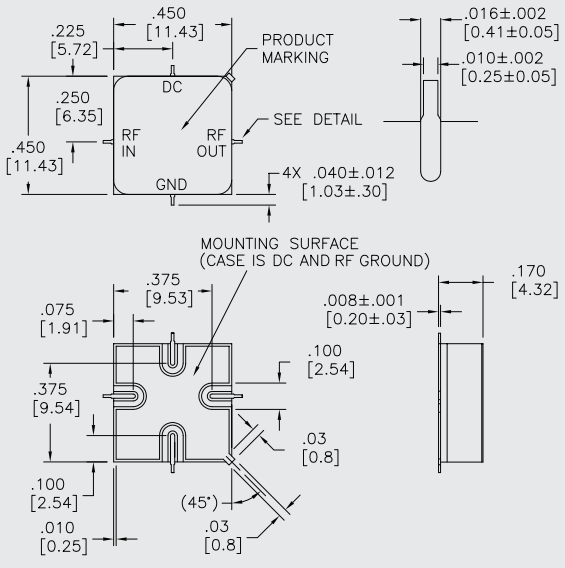
AP560

TO-8 Package for Amplifiers



APS560

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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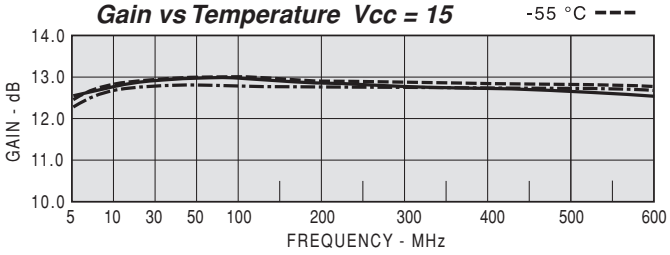
AP560

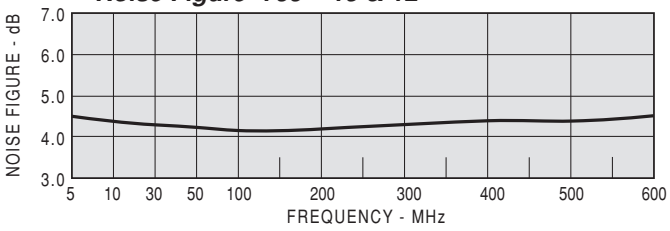
TYPICAL PERFORMANCE

KEY: +25 °C ——
+85 °C —·—
-55 °C – – –

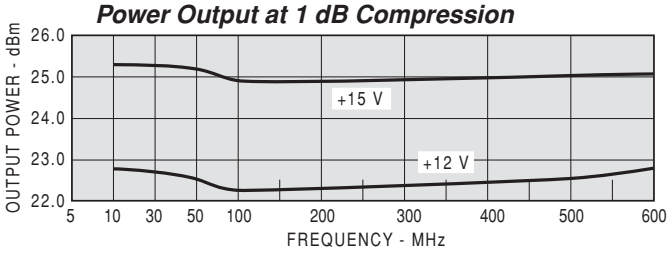
Gain vs Temperature Vcc = 15



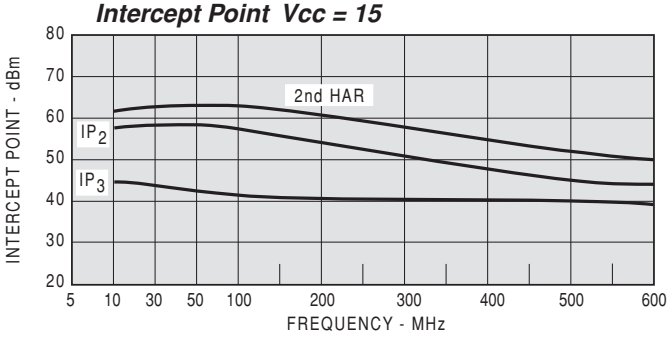
Noise Figure Vcc = 15 & 12



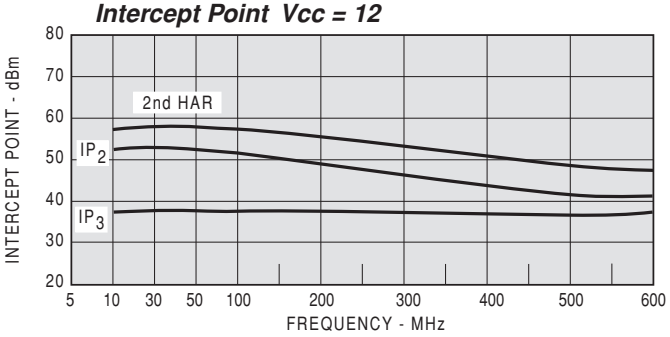
Power Output at 1 dB Compression



Intercept Point Vcc = 15



Intercept Point Vcc = 12



TYPICAL AUTOMATIC TEST DATA

Model: AP560 Vcc=+15V Icc=130.0

FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.70	1.61	12.51	-153	21.00	-17.90
10	1.36	1.41	12.75	-168	8.40	-17.60
30	1.24	1.32	12.91	179	1.30	-17.40
50	1.24	1.30	12.94	172	0.91	-17.40
100	1.24	1.28	12.92	159	0.71	-17.30
200	1.29	1.25	12.84	137	0.62	-17.20
300	1.35	1.21	12.76	114	0.61	-16.80
400	1.38	1.18	12.71	92	0.62	-16.30
500	1.36	1.29	12.68	69	0.64	-15.70
600	1.31	1.61	12.62	46	0.66	-15.10
700	1.34	2.26	12.47	21	0.71	-14.50

LINEAR S-PARAMETERS

Model: AP560 Vcc=+15V Icc=130.0

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.26	-101.40	4.22	-152.50	0.13	32.30	0.23	-167.80
10	0.15	-119.90	4.34	-167.60	0.13	16.30	0.17	-179.70
30	0.11	-148.00	4.42	178.50	0.14	4.20	0.14	174.50
50	0.11	-154.60	4.44	172.00	0.14	1.00	0.13	173.50
100	0.11	-155.10	4.43	159.30	0.14	-3.80	0.12	171.00
200	0.13	-148.20	4.38	136.50	0.14	-10.50	0.11	165.90
300	0.15	-145.90	4.34	114.40	0.15	-16.80	0.09	167.30
400	0.16	-146.70	4.32	92.10	0.15	-23.80	0.08	-171.60
500	0.15	-145.00	4.31	69.20	0.16	-32.60	0.13	-148.10
600	0.13	-133.40	4.28	45.60	0.18	-43.00	0.23	-148.70
700	0.14	-107.10	4.20	20.60	0.19	-54.90	0.39	-162.10

Model: AP560 Vcc=+12V Icc=103.78

FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO
MHZ	IN	OUT	DB	DEG	NSEC	DB
5	1.64	1.55	12.46	-154	20.00	-17.80
10	1.34	1.37	12.69	-168	8.00	-17.50
30	1.23	1.30	12.83	178	1.30	-17.30
50	1.23	1.28	12.88	172	0.91	-17.30
100	1.24	1.27	12.84	159	0.71	-17.20
200	1.31	1.24	12.75	136	0.63	-17.00
300	1.38	1.21	12.65	113	0.62	-16.70
400	1.42	1.21	12.58	91	0.63	-16.10
500	1.38	1.33	12.54	68	0.65	-15.50
600	1.29	1.67	12.46	44	0.67	-14.90
700	1.29	2.35	12.28	18	0.72	-14.30

LINEAR S-PARAMETERS

Model: AP560 Vcc=+12V Icc=103.78

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.24	-102.50	4.20	-154.00	0.13	30.90	0.21	-164.50
10	0.14	-120.50	4.31	-168.40	0.13	15.60	0.16	-177.30
30	0.10	-147.70	4.38	178.20	0.14	4.00	0.13	175.80
50	0.10	-153.20	4.40	171.60	0.14	0.50	0.12	174.90
100	0.11	-152.80	4.39	158.80	0.14	-3.80	0.12	173.20
200	0.13	-145.60	4.34	135.80	0.14	-10.30	0.11	169.80
300	0.16	-145.60	4.29	113.30	0.15	-16.30	0.09	173.50
400	0.17	-148.70	4.26	90.80	0.16	-23.70	0.09	-167.00
500	0.16	-149.90	4.24	67.80	0.17	-32.20	0.14	-149.50
600	0.13	-140.50	4.20	43.80	0.18	-42.60	0.25	-151.40
700	0.13	-108.30	4.11	18.40	0.19	-55.00	0.40	-165.10