TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC564
AC566

5 TO 500 MHz
TO-8 CASCADABLE AMPLIFIERS

Typical Values	AC564	AC566
High Gain	36.2 dB	32.5 dB
High Reverse Isolation	46 dB	40 dB
Low Noise Figure	2.5 dB	2.8 dB

High Efficiency
High Performance Thin Film
Standard Size TO-8 Package

SPECIFICATIONS*

Parameter		Typical	Guaranteed 0 to 50 °C	Guaranteed -55 to +85 °C
Frequency (Min.)		5-600 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)				
	AC564	36.2 dB	35.5 dB	35.0 dB
	AC566	32.5 dB	32.0 dB	31.5 dB
Gain Flatness (Max.)		±0.35 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)	AC564	2.5 dB	3.5 dB	4.0 dB
	AC566	2.8 dB	3.5 dB	4.0 dB
SWR (Max.)	Input/Output	1.4:1^	1.7:1^	1.8:1^
Power Output (Min.)				
@ 1dB comp.	AC564	+11.5 dBm	+10.5 dBm	+10.0 dBm
	AC566	+16.0 dBm	+15.0 dBm	+14.5 dBm
Reverse Isolation	AC564	46.0 dB	—	—
	AC566	40.0 dB	—	—
DC Current (Max.)	AC564	48.0 mA	51.0 mA	54.0 mA
	AC566	65.0 mA	68.0 mA	71.0 mA

* Measured in a 50-ohm system at +15 Vdc unless otherwise specified.
^ AC564 Input SWR is 0.2 higher at 5.0 MHz.

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC564	AC566
Second Order Harmonic Intercept Point	+41 dBm	+53 dBm
Second Order Two Tone Intercept Point	+35 dBm	+47 dBm
Third Order Two Tone Intercept Point	+23 dBm	+30 dBm

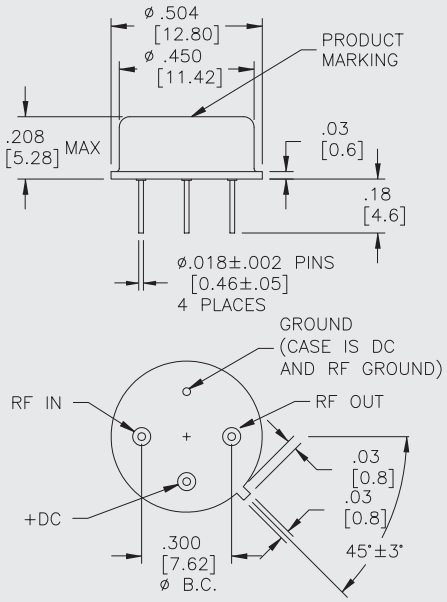
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+19 Volts
Maximum Continuous RF Input Power	+6 dBm
Maximum Short Term Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature (AC564)	+105 °C
Burn-in Temperature (AC566)	+100 °C
Thermal Resistance[1] (θjc; AC564)	+35 °C/Watt
Thermal Resistance[1] (θjc; AC566)	+35 °C/Watt
Junction Temperature Rise Above Case (Tjc; AC564)	+26.9 °C
Junction Temperature Rise Above Case (Tjc; AC566)	+35.7 °C

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

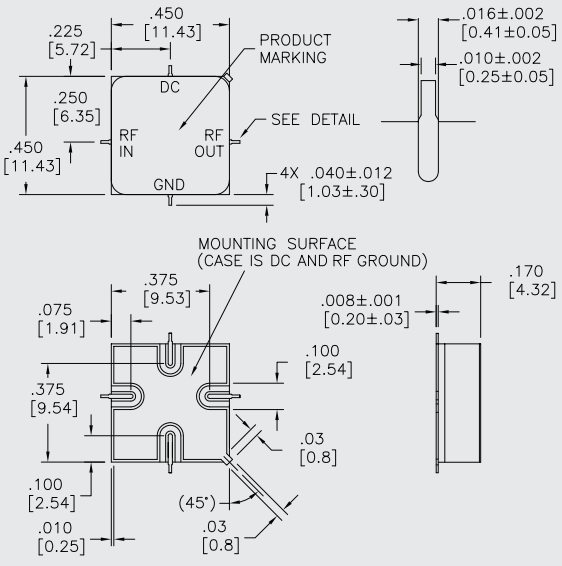
AC564/AC566

TO-8 Package for Amplifiers



AS564/AS566

SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

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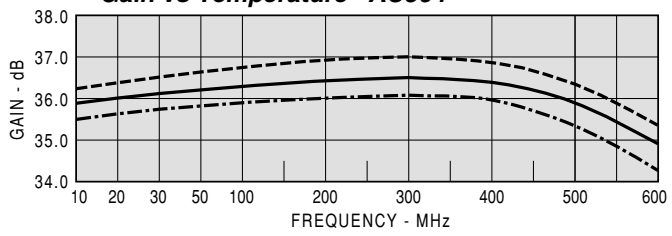
AC564/AC566

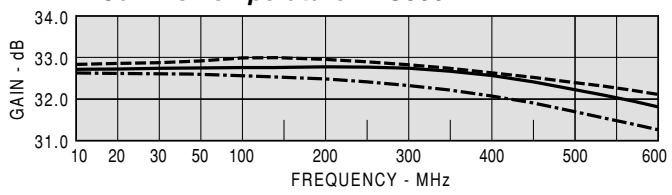
TYPICAL PERFORMANCE

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

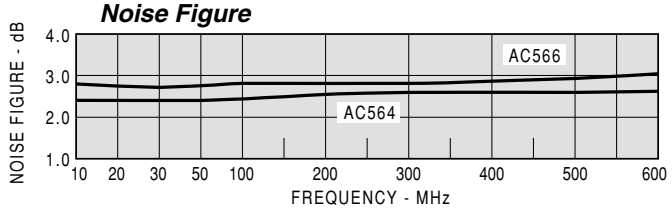
Gain vs Temperature AC564



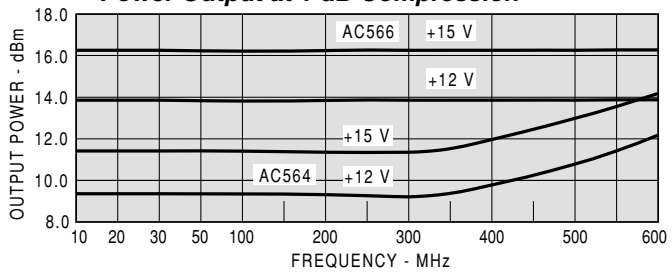
Gain vs Temperature AC566



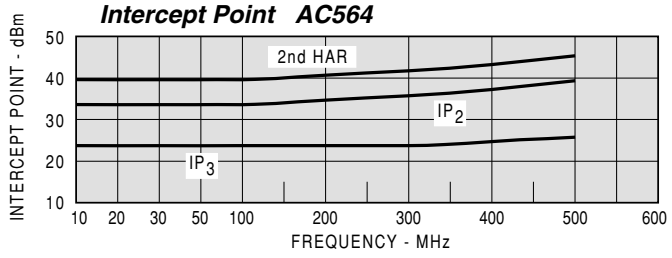
Noise Figure



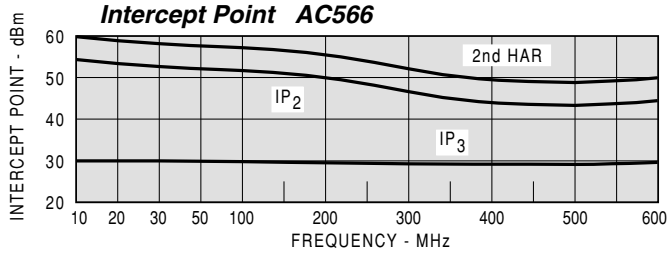
Power Output at 1 dB Compression



Intercept Point AC564



Intercept Point AC566



TYPICAL AUTOMATIC TEST DATA

Model: AC564 Vcc=+15V Icc=47.71

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
2	2.05	1.55	34.5		-48.3
5	1.45	1.23	35.7		-46.1
10	1.29	1.17	35.9		-46.0
50	1.28	1.14	36.1	1.503	-47.8
100	1.20	1.13	36.1	1.054	-46.5
200	1.27	1.09	36.4	0.937	-46.8
300	1.30	1.05	36.3	0.951	-46.8
400	1.50	1.02	36.2	1.052	-46.5
500	1.45	1.06	35.7	1.022	-46.5
600	1.59	1.15	35.1	1.106	-45.2

LINEAR S-PARAMETERS

Model: AC564 Vcc=+15V Icc=47.71

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2	0.34	-78.8	53.12	62.7	0.004	65.0	0.22	-76.4
5	0.18	-109.2	60.85	25.3	0.005	22.0	0.10	-49.7
10	0.13	-139.4	62.41	9.3	0.005	14.0	0.08	-32.2
50	0.12	165.0	63.75	-12.3	0.004	6.0	0.07	-22.4
100	0.09	144.4	63.70	-31.2	0.005	-5.0	0.06	-32.9
200	0.12	98.2	66.12	-65.2	0.005	7.0	0.04	-59.3
300	0.13	50.6	65.59	-99.3	0.005	-4.0	0.02	-86.3
400	0.20	14.2	64.62	-137.1	0.005	-5.0	0.01	-76.8
500	0.19	-28.1	61.17	-173.9	0.005	8.0	0.03	-72.0
600	0.23	-50.9	56.83	146.2	0.005	-0.0	0.07	-115.6
700	0.27	-79.6	52.40	112.6	0.005	26.0	0.16	-156.0

Model: AC564 Vcc=+12V Icc=38.01

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
2	1.96	1.59	33.9		-47.5
5	1.38	1.24	35.1		-46.8
10	1.26	1.17	35.3		-46.8
50	1.18	1.14	35.5	1.501	-46.6
100	1.20	1.13	35.4	1.042	-46.2
200	1.29	1.10	35.8	0.932	-47.0
300	1.28	1.06	35.7	0.935	-46.3
400	1.41	1.05	35.6	1.039	-45.9
500	1.43	1.09	35.2	1.021	-46.5
600	1.54	1.20	34.7	1.117	-45.3

Model: AC566 Vcc=+15V Icc=66.78

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
2	1.38	1.66	31.4		-42.6
5	1.28	1.12	32.4		-41.2
10	1.23	1.06	32.5		-40.9
50	1.20	1.04	32.6	1.633	-40.7
100	1.18	1.03	32.6	0.895	-40.9
200	1.17	1.04	32.7	0.834	-40.6
300	1.14	1.06	32.7	0.848	-40.2
400	1.08	1.08	32.6	0.884	-40.1
500	1.05	1.10	32.4	0.910	-39.5
600	1.15	1.15	32.0	0.913	-39.0

Model: AC566 Vcc=+12V Icc=52.70

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
2	1.39	1.61	31.1		-42.5
5	1.30	1.14	32.1		-41.0
10	1.25	1.07	32.2		-40.7
50	1.23	1.04	32.3	1.620	-40.6
100	1.22	1.03	32.3	0.893	-40.6
200	1.19	1.04	32.4	0.831	-40.4
300	1.17	1.05	32.5	0.845	-39.9
400	1.12	1.06	32.4	0.883	-39.6
500	1.10	1.06	32.3	0.914	-38.9
600	1.18	1.11	31.9	0.924	-38.4