TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC548

5 TO 500 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC548
High Third Order I.P.	+35 dBm
Low Noise Figure	< 3.7 dB
Medium Output Power	+19.0 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.)		5-600 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)		12.5 dB	11.5 dB	11.0 dB
Gain Flatness (Max.)		±0.2 dB	±0.4 dB	±0.6 dB
Noise Figure (Max.)		< 3.7 dB	4.5 dB	5.0 dB
SWR (Max.)	Input	< 1.5:1	1.9:1	2.0:1
	Output	< 1.3:1	1.4:1	1.5:1
Power Output (Min.) @ 1dB comp.		+19.0 dBm	+17.8 dBm	+17.0 dBm
Reverse Isolation		37.0 dB	—	—
DC Current (Max.)		58 mA	61 mA	64 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 200 MHz	AC548
Second Order Harmonic Intercept Point	+54 dBm
Second Order Two Tone Intercept Point	+48 dBm
Third Order Two Tone Intercept Point	+35 dBm

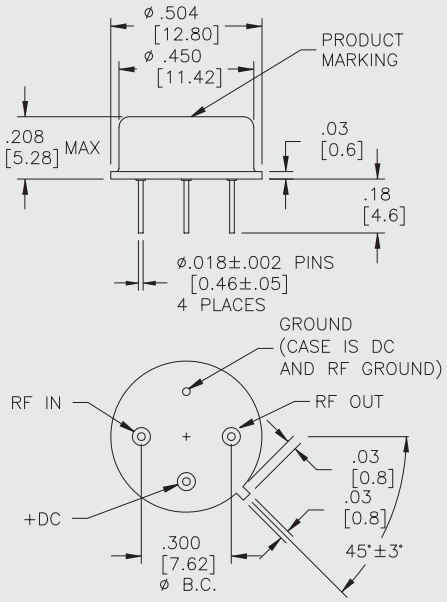
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+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	+105 °C
Thermal Resistance[1] (θjc)	+34.2 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+31.3 °C

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

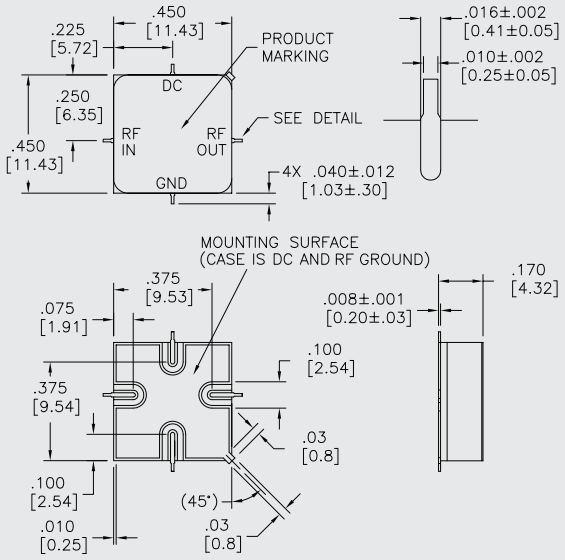
AC548

TO-8 Package for Amplifiers



AS548

SMTO-8 Package for Amplifiers



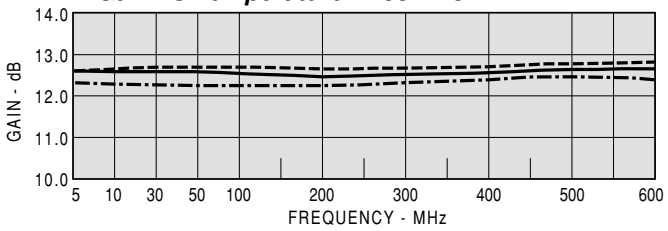
If DC is present on RF input/output, this model requires additional external blocking capacitors.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

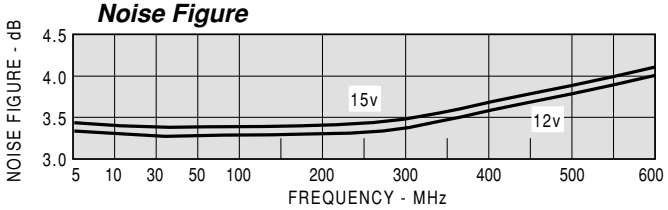
TYPICAL PERFORMANCE

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

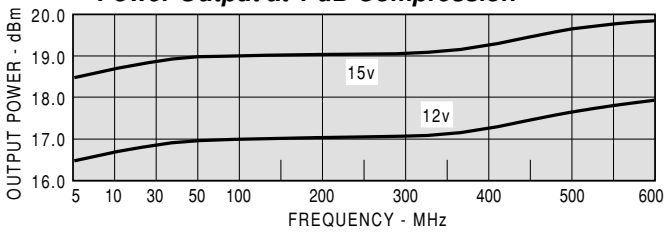
Gain vs Temperature Vcc = 15



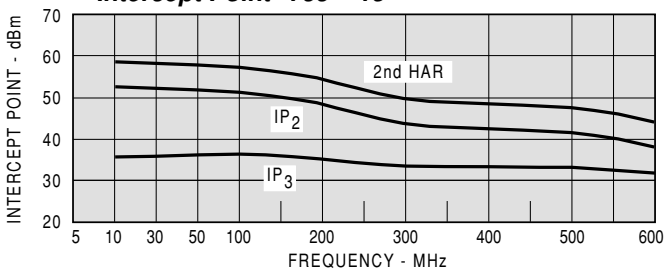
Noise Figure



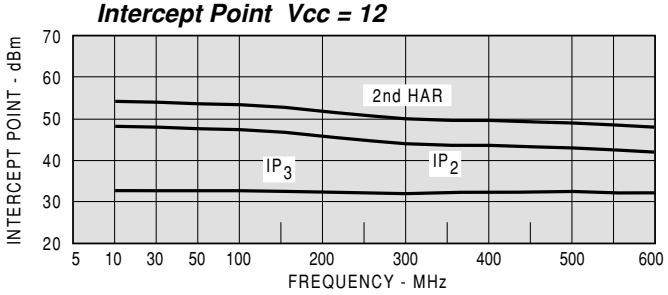
Power Output at 1 dB Compression



Intercept Point Vcc = 15



Intercept Point Vcc = 12



TYPICAL AUTOMATIC TEST DATA

Model: AC548 Vcc=+15V Icc=57.69

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
5	1.32	1.17	12.7		-19.1
10	1.14	1.07	12.7		-18.3
20	1.07	1.04	12.7	1.664	-18.2
50	1.04	1.06	12.6	0.722	-18.2
100	1.04	1.11	12.6	0.505	-18.2
200	1.07	1.20	12.5	0.465	-18.2
300	1.13	1.27	12.5	0.458	-18.2
400	1.23	1.30	12.5	0.461	-18.2
500	1.40	1.27	12.5	0.477	-18.2
600	1.64	1.19	12.4	0.497	-18.1

LINEAR S-PARAMETERS

Model: AC548 Vcc=+15V Icc=57.69

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.14	-82.1	4.30	-163.7	0.111	-174.0	0.08	-19.2
10	0.07	-84.4	4.30	-173.1	0.121	-178.0	0.03	-25.8
20	0.04	-84.9	4.30	-179.1	0.123	179.0	0.02	2.3
50	0.02	-86.4	4.29	173.1	0.124	174.0	0.03	40.7
100	0.02	-92.7	4.26	164.0	0.123	166.0	0.05	52.2
200	0.03	-112.5	4.23	147.3	0.123	152.0	0.09	46.1
300	0.06	-132.6	4.21	130.8	0.123	139.0	0.12	34.4
400	0.10	-154.1	4.21	114.2	0.123	125.0	0.13	21.6
500	0.17	-174.6	4.21	97.0	0.124	111.0	0.12	8.8
600	0.24	165.9	4.17	79.1	0.124	97.0	0.09	-3.0
700	0.33	146.9	4.08	60.7	0.122	81.0	0.03	1.1

Model: AC548 Vcc=+12V Icc=45.79

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
5	1.31	1.18	12.6		-19.1
10	1.14	1.07	12.6		-18.3
20	1.07	1.05	12.6	1.660	-18.2
50	1.04	1.06	12.6	0.718	-18.2
100	1.04	1.10	12.6	0.507	-18.2
200	1.07	1.18	12.5	0.465	-18.2
300	1.13	1.24	12.5	0.458	-18.2
400	1.24	1.25	12.5	0.462	-18.2
500	1.41	1.21	12.5	0.481	-18.2
600	1.66	1.12	12.4	0.499	-18.2

LINEAR S-PARAMETERS

Model: AC548 Vcc=+12V Icc=45.79

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.13	-81.5	4.28	-163.7	0.111	-174.0	0.08	-16.9
10	0.07	-82.9	4.28	-173.1	0.121	-178.0	0.04	-21.3
20	0.04	-81.3	4.28	-179.1	0.123	179.0	0.02	1.1
50	0.02	-80.2	4.27	173.1	0.123	173.0	0.03	32.0
100	0.02	-87.2	4.25	164.0	0.123	166.0	0.05	45.4
200	0.03	-108.8	4.22	147.2	0.122	152.0	0.08	42.0
300	0.06	-131.0	4.20	130.8	0.122	138.0	0.11	31.5
400	0.11	-152.9	4.20	114.1	0.123	123.0	0.11	19.5
500	0.17	-173.6	4.20	96.8	0.123	109.0	0.09	7.7
600	0.25	166.1	4.16	78.8	0.123	94.0	0.06	0.0
700	0.34	146.8	4.06	60.3	0.120	78.0	0.02	79.8