TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

Rev. 5/10

AC1215

0.3 TO 1200 MHz TO-8 CASCADABLE AMPLIFIER

Typical Values	AC1215
Extended Bandwidth	**0.3-1200 MHz**
Low Noise Figure	**3.7 dB**
High Third Order I.P.	**+25.0 dBm**
High Performance Thin Film	

SPECIFICATIONS*

Parameter	Typical	Guaranteed* 0 to 50 °C	Guaranteed* -55 to +85 °C
Frequency (Min.)	**0.3-1300 MHz**	**0.3-1200 MHz**	**0.3-1200 MHz**
Small Signal Gain (Min.)	15.0 dB	14.5 dB	14.0 dB
Gain Flatness (Max.)	±0.25 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.) 10-1200 MHz	3.7 dB	4.2 dB	4.7 dB
SWR (Max.) Input/Output	< 1.5:1	1.7:1	1.9:1
Power Output (Min.) @ 1dB comp.	+12.5 dBm	+12.0 dBm	+11.5 dBm
DC Current (Max.)	35.0 mA	38.0 mA	40.0 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C	AC1215
Second Order Harmonic Intercept Point	+43 dBm
Second Order Two Tone Intercept Point	+37 dBm
Third Order Two Tone Intercept Point	+26 dBm

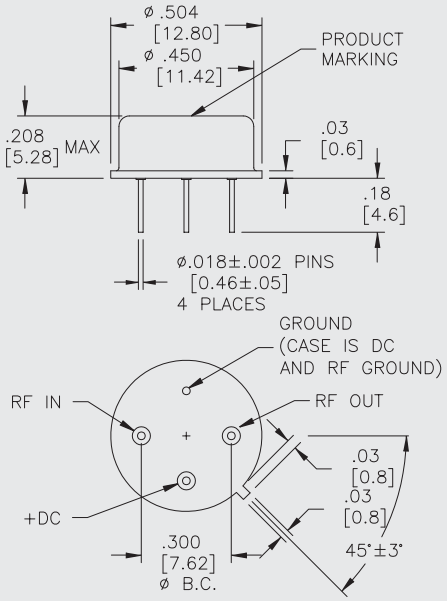
ABSOLUTE MAXIMUM RATINGS

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.)	50 Milliwatts
Maximum Peak Power (3 µsec Max.)	0.5 Watt
Burn-in Temperature	+125 °C
Thermal Resistance[1] (θjc)	+37 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+20.9 °C

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

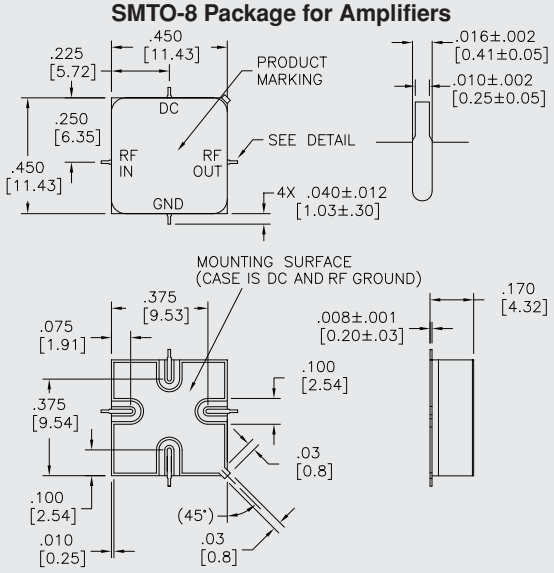
AC1215

TO-8 Package for Amplifiers



AS1215

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]

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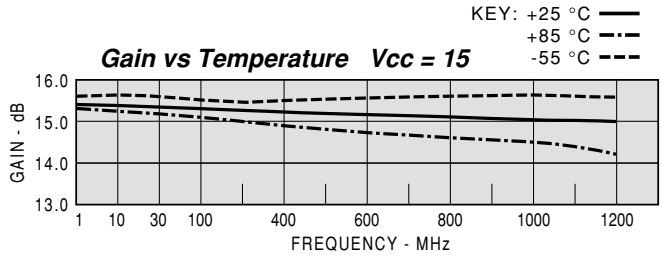
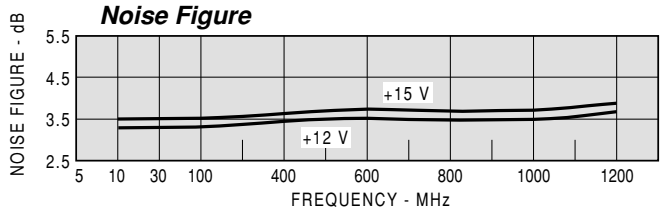
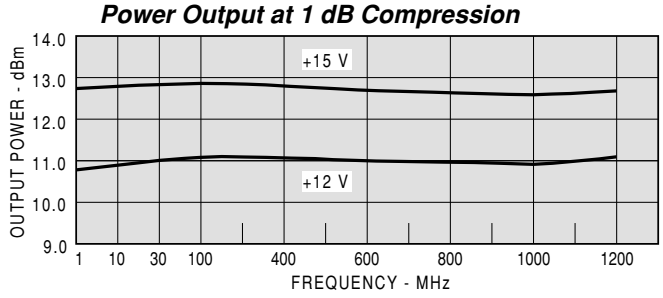
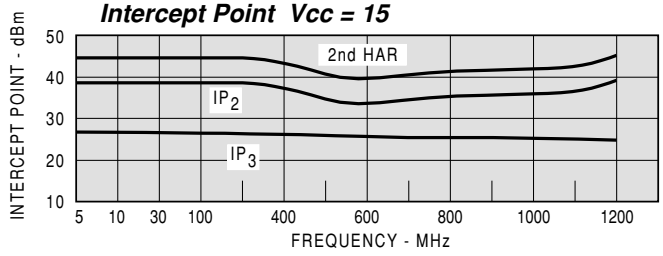
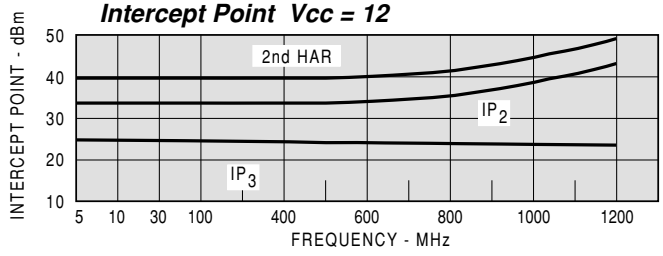
TYPICAL PERFORMANCE











TYPICAL AUTOMATIC TEST DATA

Model: AC1215 Vcc= +15 V Icc = 35.28

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
1	1.08	1.18	15.3		-20.4
5	1.05	1.16	15.3		-20.4
10	1.05	1.16	15.3	0.550	-20.4
50	1.05	1.16	15.2	0.409	-20.4
100	1.08	1.17	15.2	0.379	-20.4
200	1.14	1.21	15.2	0.404	-20.5
300	1.19	1.26	15.1	0.389	-20.5
400	1.27	1.31	15.1	0.382	-20.6
500	1.31	1.35	15.0	0.381	-20.6
600	1.37	1.39	15.1	0.378	-20.7
700	1.40	1.40	15.1	0.398	-20.6
800	1.44	1.39	15.1	0.388	-20.5
900	1.45	1.36	15.1	0.412	-20.5
1000	1.44	1.31	15.2	0.415	-20.3
1100	1.43	1.26	15.1	0.436	-20.2
1200	1.39	1.20	15.1	0.444	-19.8
1300	1.33	1.17	15.0	0.479	-19.5

LINEAR S-PARAMETERS

Model: AC1215 Vcc= +15 V Icc= 35.28

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.04	-54.3	5.84	-177.5	0.096	-3.0	0.08	-152.6
5	0.02	-16.5	5.83	179.9	0.096	-1.0	0.08	-176.5
10	0.03	-26.2	5.83	178.7	0.096	-1.0	0.08	178.9
50	0.03	-28.8	5.79	172.9	0.095	-3.0	0.08	161.9
100	0.04	-61.9	5.75	166.0	0.095	-6.0	0.08	144.3
200	0.07	-89.8	5.75	151.4	0.095	-12.0	0.10	114.6
300	0.09	-107.3	5.71	137.6	0.094	-18.0	0.12	92.7
400	0.12	-120.0	5.69	124.0	0.094	-24.0	0.13	75.0
500	0.13	-132.7	5.65	110.1	0.093	-29.0	0.15	59.3
600	0.16	-145.0	5.66	96.6	0.093	-35.0	0.16	44.8
700	0.17	-156.1	5.68	82.3	0.093	-40.0	0.17	30.0
800	0.18	-168.5	5.70	68.2	0.094	-46.0	0.16	15.3
900	0.18	178.2	5.70	53.2	0.095	-51.0	0.15	-0.7
1000	0.18	166.5	5.72	38.3	0.097	-57.0	0.13	-18.6
1100	0.18	150.6	5.70	22.8	0.098	-62.0	0.11	-39.8
1200	0.16	131.5	5.71	6.9	0.102	-68.0	0.09	-71.5
1300	0.14	106.6	5.61	-10.4	0.107	-75.0	0.08	-116.5
1400	0.14	70.1	5.43	-27.7	0.111	-82.0	0.09	-164.6

Model: AC1215 Vcc= +12 V Icc = 28.27

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	DELAY NSEC	REV/ISO DB
1	1.10	1.16	15.2		-20.3
5	1.08	1.14	15.2		-20.3
10	1.08	1.14	15.1	0.654	-20.3
50	1.08	1.14	15.1	0.401	-20.3
100	1.09	1.15	15.1	0.383	-20.4
200	1.15	1.18	15.1	0.398	-20.4
300	1.22	1.22	15.0	0.390	-20.4
400	1.28	1.27	15.0	0.370	-20.4
500	1.34	1.30	15.0	0.386	-20.4
600	1.39	1.32	15.0	0.376	-20.4
700	1.44	1.32	15.0	0.403	-20.3
800	1.48	1.31	15.0	0.390	-20.2
900	1.51	1.27	15.1	0.417	-20.1
1000	1.50	1.22	15.1	0.420	-19.9
1100	1.47	1.15	15.1	0.436	-19.7
1200	1.44	1.09	15.1	0.447	-19.3
1300	1.38	1.10	15.0	0.485	-19.0

LINEAR S-PARAMETERS

Model: AC1215 Vcc= +12 V Icc= 28.27

FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1	0.05	-44.3	5.75	-177.3	0.097	-3.0	0.08	-147.7
5	0.04	-12.8	5.73	179.8	0.097	-1.0	0.07	-175.0
10	0.04	-15.9	5.72	178.7	0.097	-1.0	0.07	179.5
50	0.04	-24.0	5.69	172.8	0.096	-3.0	0.07	162.4
100	0.04	-53.0	5.66	166.2	0.096	-6.0	0.07	144.6
200	0.07	-80.1	5.68	151.6	0.096	-12.0	0.08	115.1
300	0.10	-100.6	5.61	137.7	0.096	-17.0	0.10	93.7
400	0.12	-115.4	5.62	124.1	0.095	-23.0	0.12	76.9
500	0.14	-129.7	5.60	110.3	0.095	-28.0	0.13	61.9
600	0.16	-142.2	5.61	96.8	0.095	-34.0	0.14	48.1
700	0.18	-152.1	5.60	82.2	0.096	-39.0	0.14	34.3
800	0.19	-166.3	5.63	68.5	0.097	-45.0	0.13	20.4
900	0.20	-178.9	5.66	53.4	0.099	-50.0	0.12	5.3
1000	0.20	169.5	5.70	38.4	0.102	-56.0	0.10	-11.4
1100	0.19	153.1	5.69	22.6	0.103	-62.0	0.07	-34.2
1200	0.18	132.4	5.70	6.4	0.108	-68.0	0.04	-78.3
1300	0.16	107.2	5.60	-10.9	0.113	-75.0	0.05	-156.3
1400	0.15	73.5	5.40	-28.5	0.117	-83.0	0.09	159.2