

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	-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

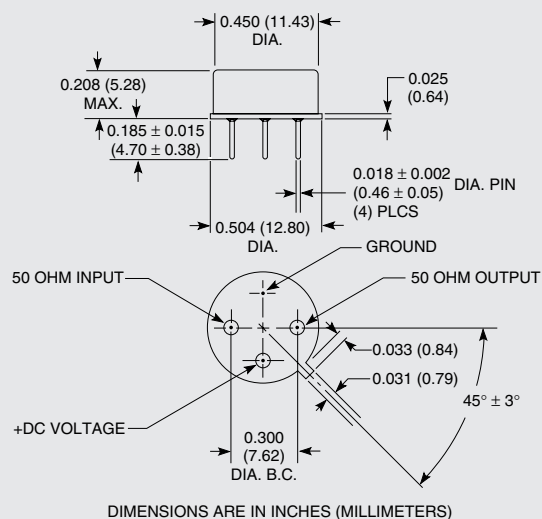
ABSOLUTE MAXIMUM RATINGS

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.

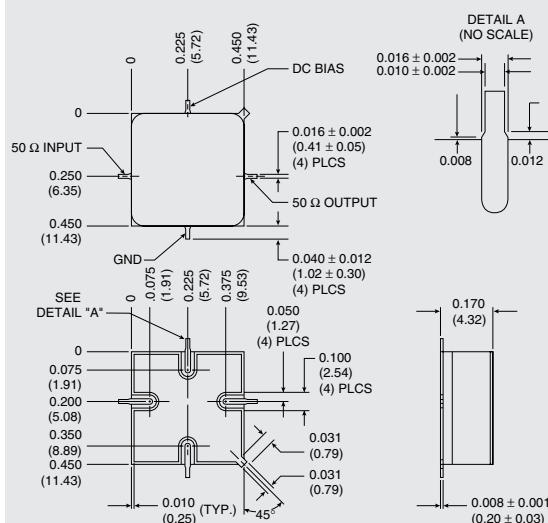
AC1215

TO-8 Package for Amplifiers



AS1215

SMT0-8 Package for Amplifiers

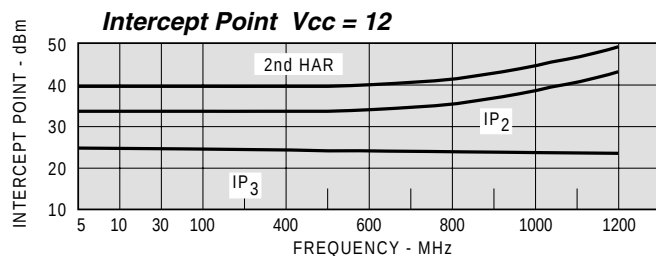
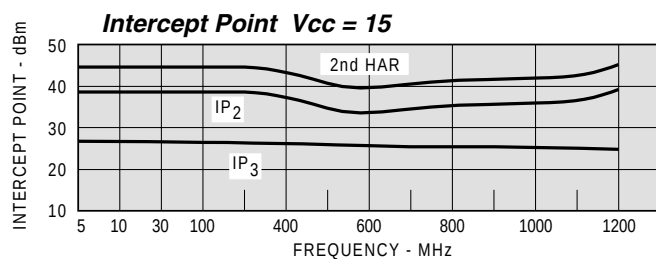
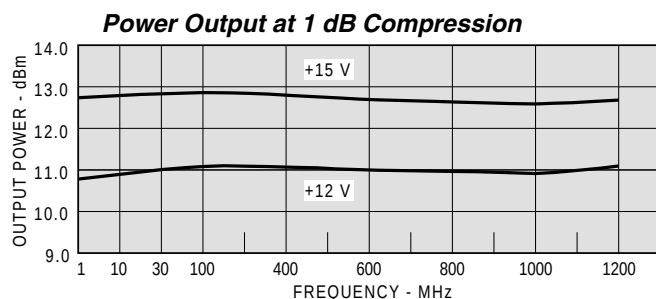
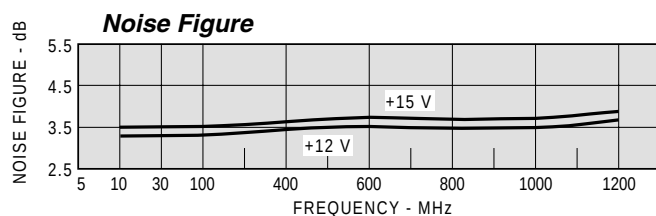
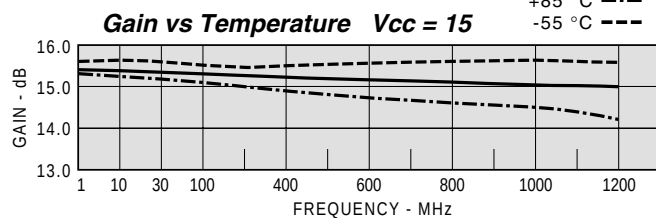


If DC is present on RF input/output, this model requires additional external blocking capacitors.

TYPICAL PERFORMANCE

Typical Performance

KEY: +25 °C —
+85 °C - - -
-55 °C ---



TYPICAL AUTOMATIC TEST DATA

MODEL:AC1215 Vcc=+15V Icc= 35.28 mA

FREQUENCY MHZ	USWR IN	USWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.00	1.18	15.3		-28.4
5.0	1.05	1.16	15.3		-28.4
10.0	1.05	1.16	15.3	.558	-28.4
50.0	1.05	1.16	15.2	.488	-28.4
100.0	1.00	1.17	15.2	.379	-28.4
200.0	1.14	1.21	15.2	.484	-28.5
300.0	1.19	1.26	15.1	.389	-28.5
400.0	1.27	1.31	15.1	.382	-28.6
500.0	1.31	1.35	15.0	.381	-28.6
600.0	1.37	1.39	15.1	.378	-28.7
700.0	1.40	1.40	15.1	.398	-28.6
800.0	1.44	1.39	15.1	.388	-28.5
900.0	1.45	1.36	15.1	.412	-28.5
1000.0	1.44	1.31	15.2	.416	-28.3
1100.0	1.43	1.26	15.1	.436	-28.2
1200.0	1.39	1.20	15.1	.444	-19.0
1300.0	1.33	1.17	15.0	.479	-13.5

MODEL:AC1215 Vcc=+15V Icc= 35.28 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11 MAG ANG	S21 MAG ANG	S12 MAG ANG	S22 MAG ANG
1	.04 -94.3	5.04 -177.5	.036 -3	.08 -152.0
5	.02 -16.5	5.03 179.9	.036 -1	.08 -176.5
10	.03 -26.2	5.03 178.7	.036 -1	.08 178.9
50	.03 -28.0	5.79 172.9	.035 -3	.08 181.9
100	.04 -51.9	5.75 166.8	.035 -6	.08 144.3
200	.07 -89.0	5.75 161.4	.035 -12	.10 114.6
300	.09 -107.3	5.71 157.6	.034 -18	.12 92.7
400	.12 -120.0	5.69 124.0	.034 -24	.13 75.0
500	.13 -132.7	5.65 110.1	.033 -29	.15 59.3
600	.16 -145.0	5.66 96.8	.033 -35	.18 44.8
700	.17 -156.1	5.68 82.3	.033 -40	.17 30.0
800	.19 -166.5	5.70 68.2	.034 -46	.16 15.3
900	.18 170.2	5.78 53.2	.035 -51	.15 -7
1000	.18 166.5	5.72 38.3	.037 -57	.13 -18.6
1100	.18 150.6	5.78 22.0	.038 -62	.11 -30.0
1200	.16 131.5	5.71 6.9	.102 -68	.09 -71.5
1300	.14 106.6	5.61 -10.4	.107 -75	.08 -118.5
1400	.14 79.1	5.43 -27.7	.111 -82	.09 -164.6

MODEL:AC1215 Vcc=+12V Icc= 28.27 mA

FREQUENCY MHZ	USWR IN	USWR OUT	GAIN DB	GROUP DELAY NSEC	REV/ISO DB
1.0	1.10	1.10	15.2		-28.3
5.0	1.00	1.14	15.2		-28.3
10.0	1.00	1.14	15.1	.654	-28.3
50.0	1.00	1.14	15.1	.481	-28.3
100.0	1.00	1.15	15.1	.393	-28.4
200.0	1.15	1.18	15.1	.398	-28.4
300.0	1.22	1.22	15.0	.398	-28.4
400.0	1.28	1.27	15.0	.378	-28.4
500.0	1.34	1.28	15.0	.386	-28.4
600.0	1.39	1.32	15.0	.376	-28.4
700.0	1.44	1.32	15.0	.483	-28.3
800.0	1.49	1.31	15.0	.398	-28.2
900.0	1.51	1.27	15.1	.417	-28.1
1000.0	1.50	1.22	15.1	.429	-19.9
1100.0	1.47	1.15	15.1	.436	-19.7
1200.0	1.44	1.09	15.1	.447	-19.3
1300.0	1.38	1.10	15.0	.485	-19.0

MODEL:AC1215 Vcc=+12V Icc= 28.27 mA

LINEAR S-PARAMETERS

FREQ. MHZ	S11 MAG ANG	S21 MAG ANG	S12 MAG ANG	S22 MAG ANG
1	.05 -44.3	5.76 -177.3	.037 -3	.08 -147.7
5	.04 -12.0	5.73 178.8	.037 -1	.07 -176.0
10	.04 -16.9	5.72 178.7	.037 -1	.07 178.9
50	.04 -24.0	5.69 172.8	.036 -3	.07 182.4
100	.04 -53.0	5.66 166.2	.036 -6	.07 144.6
200	.07 -80.1	5.68 161.6	.036 -12	.08 115.1
300	.10 -100.6	5.61 157.7	.036 -17	.10 93.7
400	.12 -115.4	5.62 124.1	.035 -23	.12 76.9
500	.14 -129.7	5.60 110.3	.035 -28	.13 61.9
600	.16 -142.2	5.61 96.8	.035 -34	.14 48.1
700	.18 -152.1	5.68 82.2	.036 -39	.14 34.3
800	.19 -166.3	5.63 68.5	.037 -46	.13 20.4
900	.20 -170.9	5.66 53.4	.039 -50	.12 6.3
1000	.20 163.5	5.70 38.4	.102 -56	.10 -11.4
1100	.19 153.1	5.69 22.6	.103 -62	.07 -34.2
1200	.18 132.4	5.70 6.4	.108 -68	.04 -70.3
1300	.16 107.2	5.60 -10.9	.113 -75	.05 -156.3
1400	.15 73.5	5.48 -28.5	.117 -83	.06 159.2

1000-1500 MHz