

# ARS1208

## 10 TO 1200 MHz TO-8B CASCADABLE AMPLIFIER

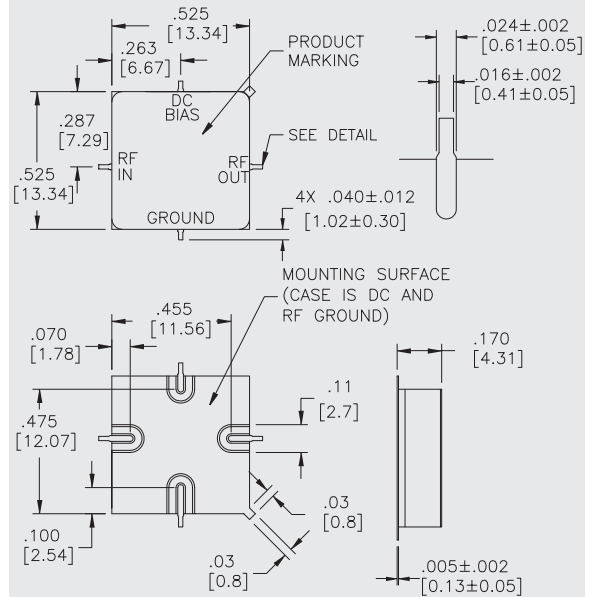
**Typical Values**

<b>High Second Order I.P.</b> .....	<b>+64 dBm</b>
<b>High Second Order Harmonic I.P.</b> .....	<b>+70 dBm</b>
<b>Medium Gain</b> .....	<b>13.0 dB</b>
<b>Medium Power Output</b> .....	<b>+17.0 dBm</b>
<b>High Performance Thin Film SMT0-8B Amplifier Package</b>	

**ARS1208**

### ARS1208

**SMT0-8B Package for Amplifiers**



## SPECIFICATIONS\*

Parameter	Typical	Guaranteed*	
		0 to 50 °C	-55 to +85 °C
<b>Frequency (Min.)</b>	<b>10-1200 MHz</b>	<b>10-1200 MHz</b>	<b>10-1200 MHz</b>
<b>Small Signal Gain (Min.)</b>	13.0 dB	11.8 dB	11.3 dB
<b>Gain Flatness (Max.)</b>	±0.5 dB	±0.7 dB	±0.9 dB
<b>Noise Figure (Max.)</b>	<4.3 dB	5.5 dB	6.0 dB
<b>SWR (Max.)</b>	Input <1.5:1 Output 1.8:1	1.7:1 2.0:1	1.8:1 2.1:1
<b>Power Output (Min.)</b> @ 1dB comp. 10-700 MHz 700-1200 MHz	+16.5 dBm +18.0 dBm	+15.5 dBm +17.5 dBm	+15.0 dBm +17.0 dBm
<b>DC Current (Max.)</b>	93.0 mA	98.0 mA	105.0 mA

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

## INTERMODULATION PERFORMANCE

Typical @ 25 °C; 500 MHz	+12 Volts	+15 Volts
<b>Second Order Harmonic Intercept Point</b> .....	+67 dBm	+70 dBm
<b>Second Order Two Tone Intercept Point</b> .....	+61 dBm	+64 dBm
<b>Third Order Two Tone Intercept Point</b> .....	+30 dBm	+31 dBm

## ABSOLUTE MAXIMUM RATINGS

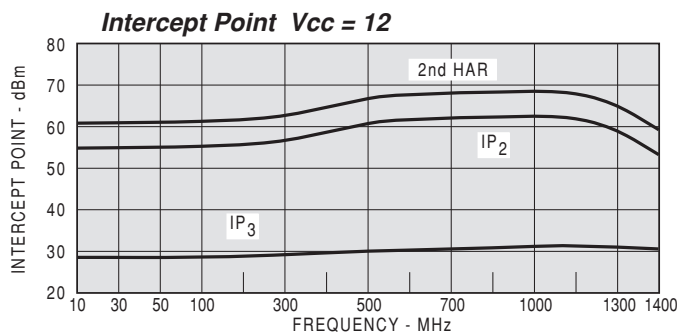
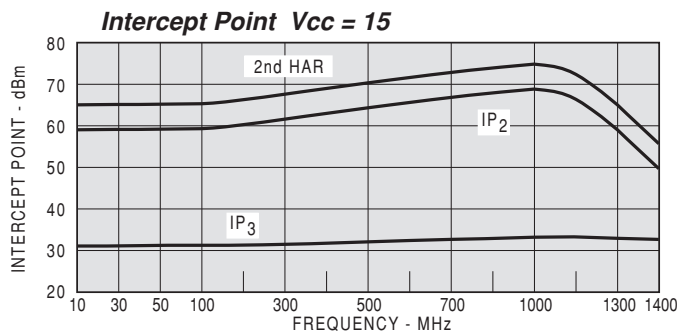
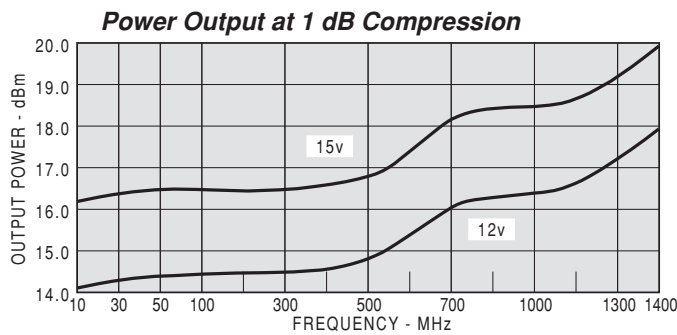
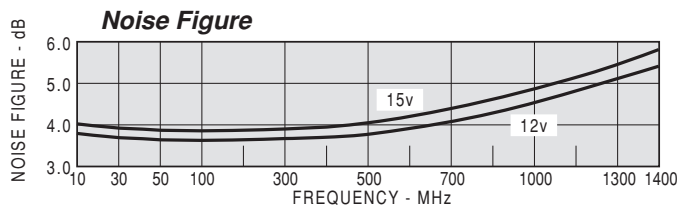
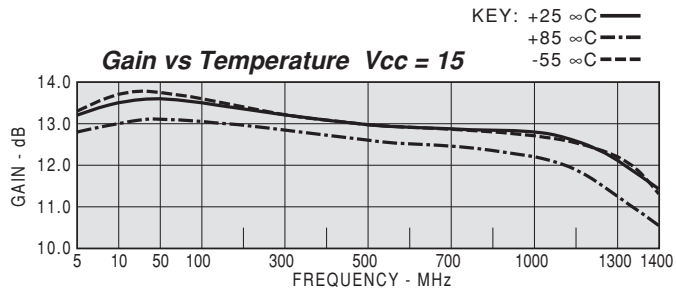
<b>Storage Temperature</b> .....	-62 to +125 °C
<b>Maximum Case Temperature</b> .....	+125 °C
<b>Maximum DC Voltage</b> .....	+17 Volts
<b>Maximum Continuous RF Input Power</b> .....	+15 dBm
<b>Maximum Short Term Input Power (1 Minute Max.)</b> .....	100 Milliwatts
<b>Maximum Peak Power (3 μsec Max.)</b> .....	0.5 Watt
<b>Burn-in Temperature</b> .....	+105 °C
<b>Thermal Resistance<sup>1</sup> (θjc)</b> .....	+15 °C/Watt
<b>Junction Temperature Rise Above Case (Tjc)</b> .....	+20.9 °C

<sup>1</sup> Thermal resistance is based on total power dissipation.

DIMENSIONS ARE IN INCHES [MILLIMETERS]

## TYPICAL PERFORMANCE

## TYPICAL AUTOMATIC TEST DATA



Model: ARS1208			Vcc= +15			Icc = 93.26	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.71	1.60	13.04	-164		-19.3	
10	1.54	1.61	13.41	-174		-18.9	
30	1.48	1.63	13.51	175		-18.7	
50	1.47	1.63	13.46	169	0.73	-18.8	
100	1.45	1.64	13.39	155	0.76	-18.8	
200	1.44	1.66	13.22	130	0.70	-18.8	
300	1.45	1.69	13.09	106	0.68	-18.8	
400	1.47	1.72	12.96	81	0.67	-18.7	
500	1.48	1.75	12.88	57	0.67	-18.5	
600	1.48	1.78	12.77	33	0.66	-18.2	
700	1.46	1.80	12.78	9	0.68	-18.0	
800	1.41	1.83	12.72	-16	0.69	-17.8	
900	1.34	1.86	12.76	-41	0.71	-17.4	
1000	1.23	1.89	12.72	-68	0.73	-17.1	
1100	1.11	1.89	12.64	-94	0.75	-16.9	
1200	1.09	1.87	12.45	-122	0.76	-16.6	
1300	1.24	1.81	12.02	-150	0.80	-16.3	
1400	1.41	1.76	11.38	-178	0.76	-16.0	

Model: ARS1208			Vcc= 15				Icc= 93.26	
FREQ.	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5	0.26	-30.3	4.49	-163.8	0.108	21.9	0.23	41.6
10	0.21	-20.9	4.68	-173.6	0.113	10.1	0.23	20.5
30	0.19	-12.3	4.74	175	0.116	-0.6	0.24	4.6
50	0.19	-12.3	4.71	168.8	0.115	-5.3	0.24	0.0
100	0.19	-16.8	4.67	155.1	0.114	-13.8	0.24	-6.9
200	0.18	-27.4	4.58	129.9	0.114	-28.6	0.25	-17.3
300	0.19	-39.0	4.51	105.5	0.115	-42.7	0.26	-28.4
400	0.19	-52.4	4.44	81.4	0.117	-57.7	0.27	-39.5
500	0.19	-66.7	4.40	57.1	0.119	-72.6	0.27	-51.1
600	0.19	-83.6	4.35	33.0	0.123	-87.8	0.28	-64.6
700	0.19	-101.2	4.36	8.7	0.126	-103.5	0.29	-78.7
800	0.17	-121.4	4.32	-16.2	0.129	-119.6	0.29	-92.7
900	0.14	-143.9	4.34	-41.1	0.135	-136.1	0.30	-106.6
1000	0.10	-169.7	4.33	-67.5	0.139	-152.8	0.31	-119.9
1100	0.05	147.8	4.28	-94.2	0.144	-170.0	0.31	-134.8
1200	0.04	41.6	4.19	-121.6	0.148	172.8	0.30	-150.8
1300	0.11	-16.2	3.99	-150.4	0.153	155.3	0.29	-167.3
1400	0.17	-45.0	3.71	-177.6	0.159	137.7	0.27	175.4
1500	0.21	-68.8	3.49	155.4	0.164	119.4	0.26	155.4

Model: ARS1208			Vcc= +12V			Icc= 73.90	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
5	1.71	1.63	12.86	-164		-19.2	
10	1.57	1.65	13.24	-174		-18.8	
20	1.52	1.66	13.33	179	1.5	-18.7	
30	1.51	1.67	13.32	175	1.2	-18.7	
50	1.50	1.67	13.30	169	0.77	-18.7	
100	1.48	1.68	13.22	155	0.75	-18.8	
200	1.46	1.69	13.05	130	0.69	-18.8	
300	1.47	1.71	12.93	106	0.68	-18.7	
400	1.48	1.75	12.81	81	0.67	-18.6	
500	1.48	1.76	12.75	57	0.67	-18.4	
600	1.47	1.78	12.65	33	0.66	-18.2	
700	1.44	1.81	12.65	8	0.69	-17.9	
800	1.38	1.82	12.59	-17	0.69	-17.7	
900	1.31	1.85	12.64	-41	0.71	-17.4	
1000	1.20	1.86	12.59	-68	0.73	-17.1	
1100	1.09	1.85	12.50	-95	0.76	-16.8	
1200	1.11	1.84	12.32	-122	0.77	-16.6	
1300	1.26	1.77	11.88	-151	0.79	-16.3	
1400	1.43	1.72	11.24	-178	0.76	-15.9	
1500	1.57	1.65	10.68	155	0.77	-15.7	