

AS1209

100 TO 1200 MHz SMTO-8 CASCADABLE AMPLIFIER

Typical Values	AS1209
Low Noise Figure	1.0 dB
High Gain	28.0 dB
Medium Output Level	+19.8 dBm
High Performance Thin Film Standard Size SMTO-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	80-1400 MHz	100-1200 MHz	100-1200 MHz
Small Signal Gain (Min.)	28.0 dB	27.0 dB	26.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)			
200-1000 MHz	1.0 dB	1.5 dB	1.7 dB
1000-1200 MHz	1.2 dB	1.7 dB	1.9 dB
SWR (Max.)			
Input	1.5:1	1.8:1	2.0:1
Output	1.2:1	1.5:1	1.7:1
Power Output (Min.) @ 1dB comp.	+19.8 dBm	+19.0 dBm	+18.5 dBm
Reverse Isolation	40.0 dB	—	—
DC Current (Max.)	171 mA	178 mA	180 mA

* Measured in a 50-ohm system at +5 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 300 MHz	AS1209
Second Order Harmonic Intercept Point	+55 dBm
Second Order Two Tone Intercept Point	+49 dBm
Third Order Two Tone Intercept Point	+33 dBm

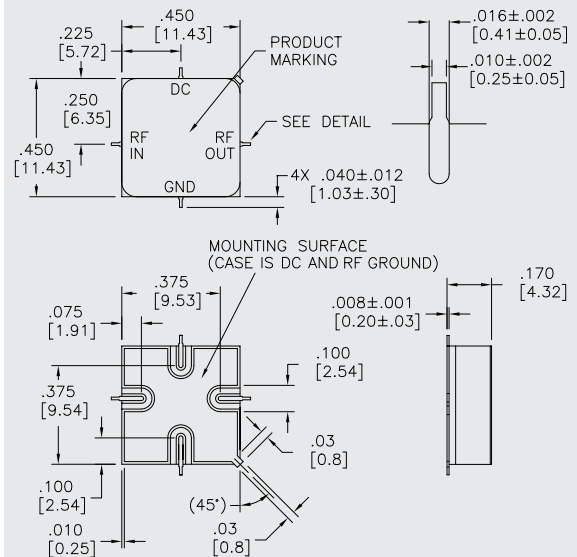
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+11 dBm
Maximum Short Term Input Power (1 Minute Max.)	+15 dBm
Maximum Peak Power (3 μsec Max.)	+18 dBm
Burn-in Temperature	+125 °C
Thermal Resistance ¹ (θjc)	+16.2 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+13.9 °C

¹ Thermal resistance is based on total power dissipation.

AS1209

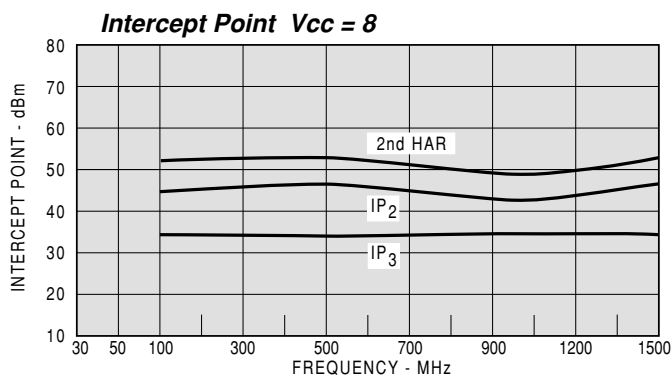
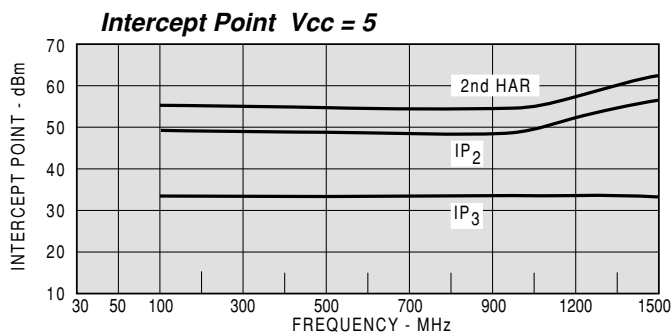
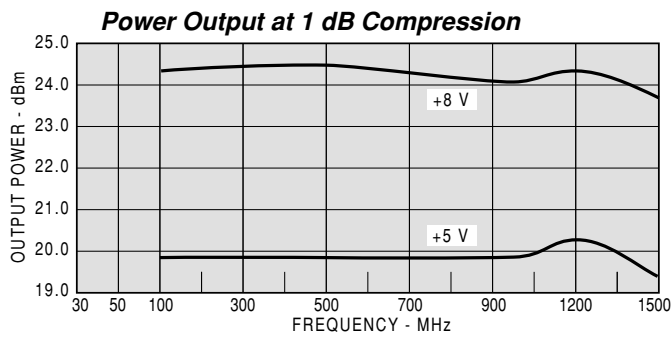
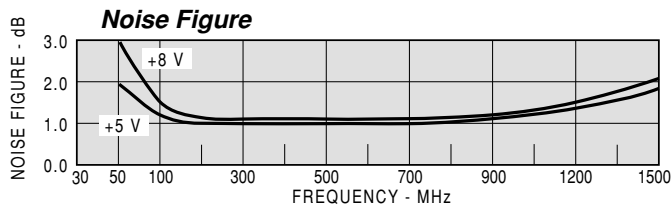
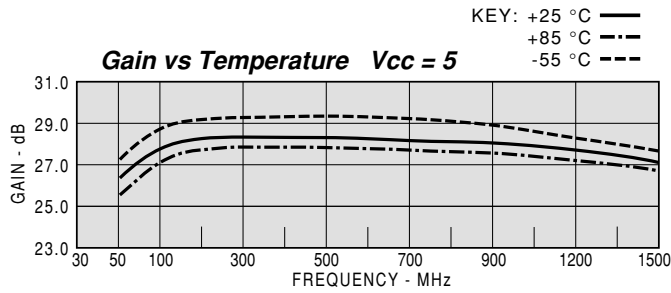
SMTO-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AS1209			Vcc=+5V			Icc=171.23	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
50	2.07	1.36	26.55	49.0		-46.00	
100	1.34	1.17	27.85	11.0	1.50	-46.10	
200	1.11	1.06	28.24	-25.0	1.00	-45.00	
300	1.12	1.04	28.32	-51.0	0.73	-44.50	
400	1.14	1.08	28.29	-75.0	0.65	-44.30	
500	1.13	1.12	28.25	-97.0	0.63	-42.40	
600	1.10	1.16	28.18	-119.0	0.61	-41.70	
700	1.07	1.20	28.10	-141.0	0.61	-40.20	
800	1.09	1.24	28.02	-163.0	0.61	-39.80	
900	1.18	1.25	27.94	174.0	0.62	-38.80	
1000	1.27	1.25	27.82	152.0	0.62	-38.00	
1100	1.35	1.24	27.76	129.0	0.64	-38.10	
1200	1.40	1.26	27.70	106.0	0.65	-36.90	
1300	1.39	1.36	27.66	81.0	0.69	-36.60	
1400	1.40	1.56	27.55	54.0	0.75	-36.10	
1500	1.66	1.91	27.17	25.0	0.81	-36.20	

LINEAR S-PARAMETERS

Model: AS1209		Vcc=+5V				Icc=171.23		
FREQ.	S11	S21		S12		S22		
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	
30	0.57	149.50	15.93	85.70	0.01	56.00	0.23	176.00
50	0.35	124.10	21.26	49.40	0.01	32.00	0.15	147.60
100	0.15	111.40	24.68	10.80	0.01	12.20	0.08	126.90
200	0.05	141.60	25.83	-25.10	0.01	15.20	0.03	129.30
300	0.06	174.70	26.05	-51.30	0.01	7.70	0.02	-178.80
400	0.07	-178.80	25.97	-74.80	0.01	2.70	0.04	-151.60
500	0.06	-177.90	25.84	-97.50	0.01	-3.30	0.06	-152.80
600	0.05	-176.50	25.64	-119.50	0.01	-1.90	0.08	-161.00
700	0.03	-150.60	25.40	-141.40	0.01	-8.40	0.09	-171.10
800	0.04	-101.40	25.17	-163.40	0.01	-17.60	0.11	178.60
900	0.08	-89.20	24.96	174.40	0.01	-21.00	0.11	170.50
1000	0.12	-92.10	24.60	152.20	0.01	-37.30	0.11	164.40
1100	0.15	-99.50	24.44	129.40	0.01	-48.30	0.11	164.50
1200	0.17	-104.00	24.27	105.80	0.01	-59.30	0.11	172.20
1300	0.16	-102.10	24.14	80.90	0.02	-70.90	0.15	177.20
1400	0.17	-88.80	23.86	53.90	0.02	-88.30	0.22	170.40
1500	0.25	-71.50	22.82	24.90	0.02	-107.50	0.31	152.40

Model: AS1209			Vcc=8V			Icc=183.35	
FREQ	SWR	SWR	GAIN	PHASE	GROUP DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
50	1.98	1.33	27.23	49.0		-43.80	
100	1.36	1.17	28.47	11.0	1.40	-44.10	
200	1.22	1.10	28.87	-24.0	0.97	-43.80	
300	1.19	1.09	28.96	-49.0	0.71	-43.20	
400	1.16	1.09	28.95	-72.0	0.63	-43.80	
500	1.11	1.09	28.93	-94.0	0.61	-42.30	
600	1.05	1.09	28.85	-115.0	0.60	-41.50	
700	1.05	1.08	28.76	-137.0	0.59	-40.70	
800	1.15	1.07	28.64	-158.0	0.59	-41.30	
900	1.28	1.05	28.51	-179.0	0.59	-40.30	
1000	1.40	1.03	28.33	159.0	0.59	-39.30	
1100	1.52	1.05	28.16	138.0	0.60	-39.60	
1200	1.63	1.09	28.00	116.0	0.61	-38.90	
1300	1.69	1.14	27.84	93.0	0.63	-39.20	
1400	1.73	1.19	27.64	69.0	0.66	-39.40	
1500	1.81	1.22	27.32	44.0	0.69	-39.00	