

AS529

100 TO 500 MHz SMT0-8 CASCADABLE AMPLIFIER

Typical Values

Low Noise Figure	AS529 <1.0 dB
High Gain	29.5 dB
Low Input/Output VSWR	1.1:1
Medium Output Level	+19.5 dBm
Low Voltage	+5 Vdc
High Performance Thin Film	
Standard Size SMT0-8 Package	

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	100-500 MHz	100-500 MHz	100-500 MHz
Small Signal Gain (Min.)	29.5 dB	28.0 dB	27.0 dB
Gain Flatness (Max.)	±0.5 dB	±0.7 dB	±0.9 dB
Noise Figure (Max.)	<1.0 dB	1.2 dB	1.4 dB
SWR (Max.)	Input/Output 1.1:1	1.4:1	1.5:1
	Input 400-500 MHz 1.3:1	1.5:1	1.6:1
Power Output (Min.) @ 1dB comp.	+19.5 dBm	+18.0 dBm	+17.5 dBm
Reverse Isolation	45.0 dB	—	—
DC Current (Max.)	185 mA	190 mA	195 mA

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

INTERMODULATION PERFORMANCE

Typical @ 25 °C; 300 MHz	+5 Volts	+8 Volts
Second Order Harmonic Intercept Point	+60 dBm	+61 dBm
Second Order Two Tone Intercept Point	+54 dBm	+55 dBm
Third Order Two Tone Intercept Point	+32 dBm	+35 dBm

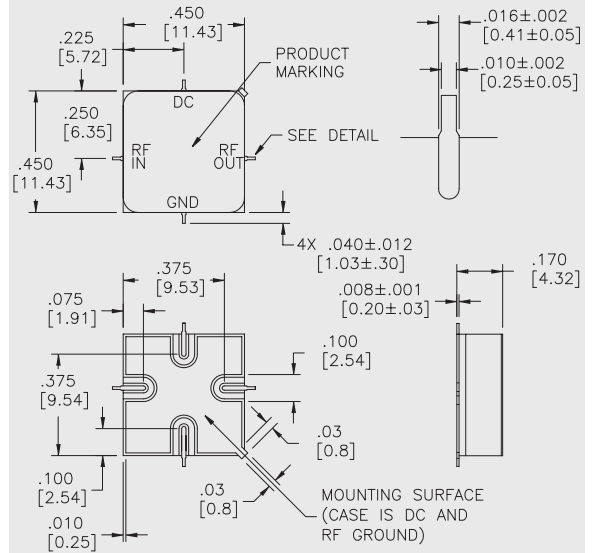
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-62 to +125 °C
Maximum Case Temperature	+125 °C
Maximum DC Voltage	+12 Volts
Maximum Continuous RF Input Power	+24 dBm
Maximum Short Term Input Power (1 Minute Max.)	+27 dBm
Maximum Peak Power (3 μsec Max.)	+27 dBm
Burn-in Temperature	+125 °C
Thermal Resistance¹ (θjc)	+16.66 °C/Watt
Junction Temperature Rise Above Case (Tjc)	+15.4 °C

¹ Thermal resistance is based on total power dissipation.

AS529

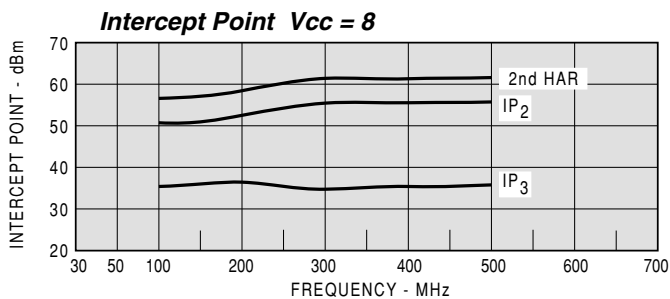
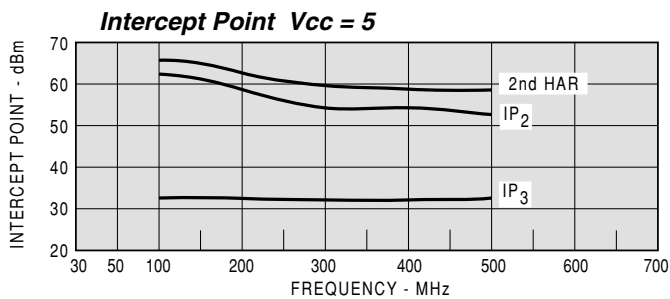
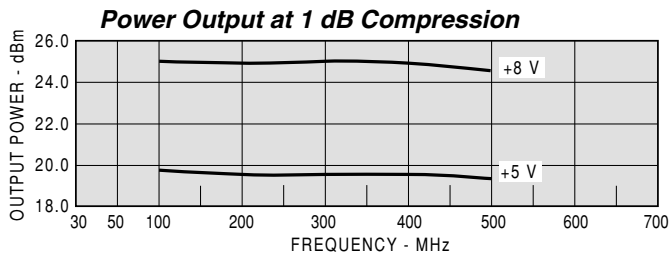
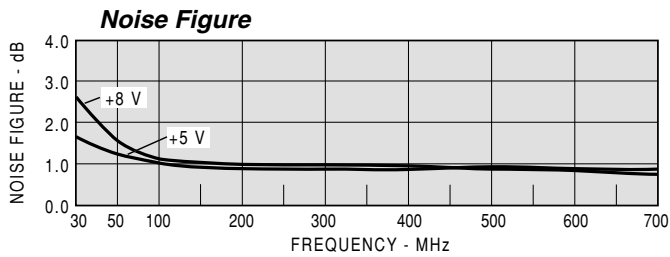
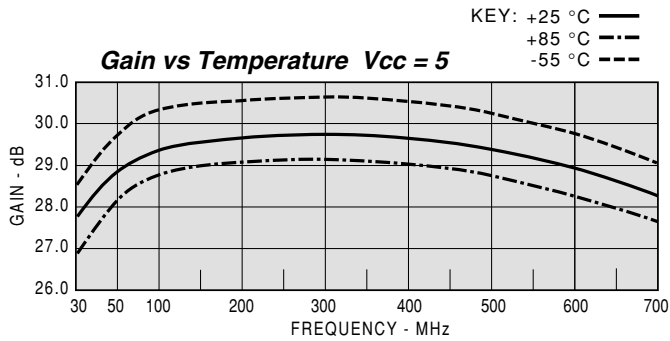
SMT0-8 Package for Amplifiers



DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE

TYPICAL AUTOMATIC TEST DATA



Model: AS529 Vcc=+5V Icc=185.77

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
30	1.81	1.44	27.81	64.0		-44.30
50	1.33	1.25	28.98	34.0		-46.40
100	1.11	1.13	29.53	2.0	1.30	-45.90
150	1.07	1.07	29.67	-15.0	0.91	-46.70
200	1.05	1.04	29.81	-29.0	0.80	-45.30
250	1.05	1.03	29.85	-42.0	0.73	-46.30
300	1.05	1.02	29.82	-54.0	0.68	-45.60
350	1.06	1.01	29.81	-66.0	0.66	-45.30
400	1.08	1.02	29.77	-78.0	0.66	-45.10
450	1.11	1.03	29.67	-90.0	0.66	-44.40
500	1.16	1.05	29.54	-102.0	0.66	-43.90
550	1.22	1.07	29.35	-114.0	0.65	-43.60
600	1.28	1.08	29.11	-125.0	0.65	-45.20
650	1.36	1.10	28.84	-137.0	0.64	-42.90
700	1.44	1.12	28.50	-148.0	0.64	-42.00

Model: AS529 Vcc=+5V Icc=185.77

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
30	0.29	110.40	24.59	64.10	0.01	50.50	0.18	158.30
50	0.14	77.20	28.13	33.60	0.01	21.20	0.11	124.90
100	0.05	42.50	29.96	1.60	0.01	6.80	0.06	80.90
150	0.03	22.70	30.43	-14.70	0.01	17.50	0.03	41.10
200	0.02	10.70	30.95	-29.10	0.01	0.30	0.02	14.40
250	0.02	8.70	31.07	-42.20	0.01	2.90	0.01	-12.40
300	0.02	12.60	30.99	-54.40	0.01	4.50	0.01	-44.20
350	0.03	18.70	30.93	-66.30	0.01	7.40	0.01	-103.40
400	0.04	24.60	30.79	-78.10	0.01	9.10	0.01	-159.70
450	0.05	22.60	30.45	-90.00	0.01	8.10	0.02	171.80
500	0.07	15.10	30.01	-101.90	0.01	-1.40	0.02	144.30
550	0.10	6.70	29.34	-113.60	0.01	-4.80	0.03	127.70
600	0.12	-3.10	28.55	-125.40	0.01	-3.90	0.04	111.60
650	0.15	-13.20	27.66	-137.00	0.01	-7.20	0.05	97.60
700	0.18	-23.10	26.62	-148.50	0.01	-7.00	0.05	82.50

Model: AS529 Vcc=+8V Icc=200.43

FREQ MHZ	SWR IN	SWR OUT	GAIN DB	PHASE DEG	GROUP DELAY NSEC	REV/ISO DB
30	1.71	1.40	28.41	64.0		-44.20
50	1.26	1.26	29.59	34.0		-45.20
100	1.08	1.22	30.15	2.0	1.30	-44.80
150	1.07	1.19	30.29	-14.0	0.90	-44.10
200	1.08	1.17	30.45	-29.0	0.80	-45.10
250	1.10	1.15	30.49	-42.0	0.73	-44.80
300	1.11	1.14	30.47	-54.0	0.68	-45.60
350	1.14	1.12	30.46	-66.0	0.66	-44.60
400	1.17	1.10	30.42	-78.0	0.66	-43.90
450	1.22	1.09	30.32	-90.0	0.66	-43.80
500	1.27	1.10	30.19	-102.0	0.66	-42.90
550	1.33	1.11	29.97	-114.0	0.66	-43.70
600	1.40	1.15	29.71	-125.0	0.66	-44.60
650	1.47	1.19	29.40	-137.0	0.64	-44.00
700	1.55	1.23	29.04	-149.0	0.64	-43.10

Model: AS529 Vcc=+8V Icc=200.43

LINEAR S-PARAMETERS

FREQ. MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
30	0.26	114.00	26.34	64.20	0.01	44.00	0.17	146.50
50	0.12	88.00	30.15	33.70	0.01	16.50	0.12	99.90
100	0.04	92.50	32.17	1.90	0.01	8.80	0.10	48.80
150	0.03	103.60	32.71	-14.40	0.01	6.80	0.09	18.60
200	0.04	97.50	33.29	-28.80	0.01	-5.90	0.08	6.50
250	0.05	85.00	33.45	-41.90	0.01	-6.80	0.07	-2.20
300	0.05	70.00	33.38	-54.10	0.01	-1.50	0.06	-7.20
350	0.06	57.60	33.35	-65.90	0.01	-3.40	0.06	-8.10
400	0.08	45.60	33.20	-77.90	0.01	-4.60	0.05	-4.90
450	0.10	33.40	32.81	-89.90	0.01	-6.30	0.04	5.40
500	0.12	20.60	32.31	-101.80	0.01	-15.40	0.05	19.20
550	0.14	8.90	31.53	-113.60	0.01	-19.40	0.05	30.00
600	0.17	-3.00	30.57	-125.50	0.01	-23.70	0.07	33.90
650	0.19	-14.40	29.52	-137.10	0.01	-28.50	0.09	32.40
700	0.22	-24.90	28.33	-148.60	0.01	-23.30	0.10	28.10
750	0.24	-35.50	27.03	-159.90	0.01	-37.50	0.12	22.60
800	0.26	-45.60	25.67	-171.10	0.01	-35.80	0.15	15.10