

100 TO 1000 MHz TO-8 CASCADABLE AMPLIFIER

ARS1047

75 dB

11 dB

0 dBm

Standard Size SMT0-8B and TO-8B Package

SPECIFICATIONS*

Parameter	Typical	Guaranteed	
		0 to 50 °C	-55 to +85 °C
Frequency (Min.)	100-1000 MHz	100-1000 MHz	100-1000 MHz
Small Signal Gain (Min.)	11.0 dB	10.0 dB	9.0 dB
Gain Flatness (Max.)	±0.5 dB	±0.65 dB	±0.75 dB
Noise Figure (Max.)			
100-200 MHz	4.0 dB	4.5 dB	6.0 dB
200-1000 MHz	4.0 dB	4.5 dB	5.0 dB
VSWR (Max.)			
100-200 MHz	2.2:1	2.3:1	2.3:1
200-1000 MHz	1.9:1	2.0:1	2.0:1
Power Output (Min.)			
@ 1 dB comp. 100-500 MHz	+28.0 dBm	+27.0 dBm	+26.0 dBm
500-1000 MHz	+29.0 dBm	+28.5 dBm	+27.5 dBm
Reverse Isolation	20.0 dB	19.0 dB	18.5 dB
DC Current (Max.)	350 mA	360 mA	370 mA

* Measured in a 50-ohm system at +12 Vdc unless otherwise specified.

INTERMODULATION PERFORMANCE

ARS1047

+78 dBm

+72 dBm

+43 dBm

ABSOLUTE MAXIMUM RATINGS

-62 to +125 °C

+125 °C

+17 Volts

+22 dBm

+24 dBm

+26 dBm

+125 °C

1150

$\pm 17.0\text{ }^{\circ}\text{C/Watt}$

+28 °C

¹ Thermal resistance is based on total power dissipation.

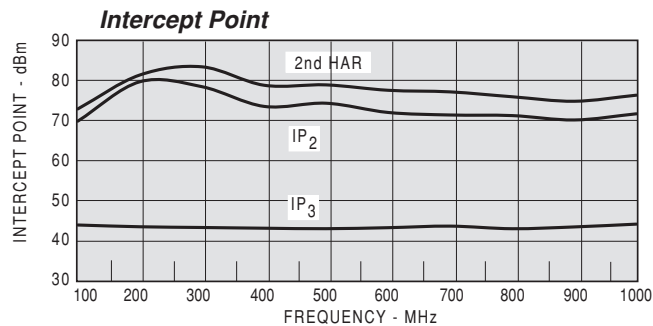
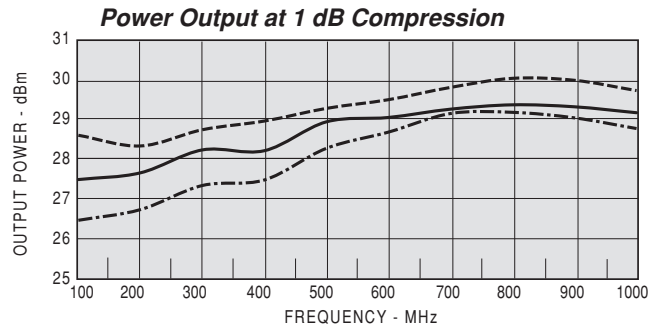
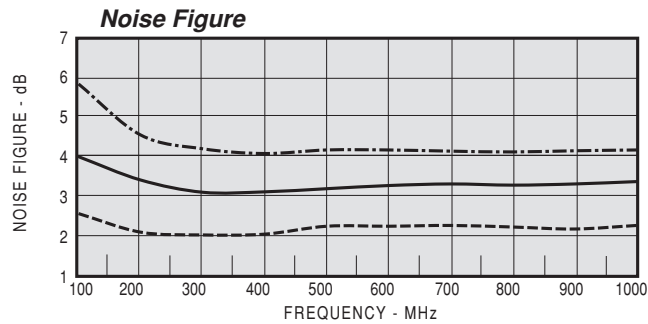
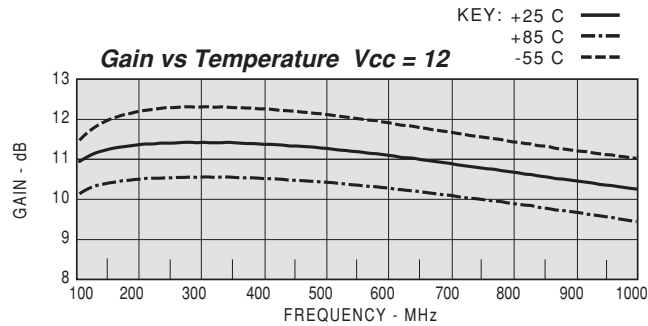
ARS1047

Figure 1: Dimensions of the 1000 MHz Single-Ended Power Amplifier. The figure includes three views: a top view, a side view, and a bottom view. The top view shows a rectangular layout with dimensions in inches and millimeters. Key features include RF IN, RF OUT, DC, and DC GND ports, a PRODUCT MARKING, and a MOUNTING SURFACE. The side view shows the profile of the component with dimensions for the mounting surface and the overall height. The bottom view shows the underside of the component with dimensions for the mounting surface and the overall width.

AR1047

DIMENSIONS ARE IN INCHES [MILLIMETERS]

TYPICAL PERFORMANCE



TYPICAL AUTOMATIC TEST DATA

Model: ARS1047				Vcc=+12V		Icc=355.2	
FREQ	SWR	SWR	GAIN	PHASE	DELAY	REV/ISO	
MHZ	IN	OUT	DB	DEG	NSEC	DB	
100	2.18	1.41	10.98	-8.55	1.04	-19.37	
150	1.99	1.31	11.29	-24.65	0.85	-19.73	
200	1.86	1.25	11.40	-38.82	0.76	-19.77	
250	1.75	1.21	11.43	-52.08	0.71	-19.75	
300	1.64	1.19	11.45	-64.89	0.71	-19.88	
350	1.53	1.20	11.44	-77.42	0.69	-19.91	
400	1.42	1.23	11.40	-89.85	0.68	-19.96	
450	1.32	1.27	11.36	-102.18	0.69	-20.00	
500	1.23	1.33	11.30	-114.40	0.69	-20.12	
550	1.15	1.39	11.22	-126.52	0.67	-20.27	
600	1.07	1.45	11.13	-138.49	0.66	-20.34	
650	1.02	1.52	11.03	-150.42	0.65	-20.46	
700	1.06	1.59	10.93	-162.30	0.66	-20.57	
750	1.12	1.65	10.82	-174.09	0.66	-20.79	
800	1.18	1.70	10.72	-174.27	0.63	-20.95	
850	1.23	1.74	10.61	-162.49	0.65	-21.06	
900	1.28	1.77	10.51	-150.91	0.62	-21.24	
950	1.32	1.78	10.40	-139.11	0.65	-21.42	
1000	1.36	1.77	10.30	-127.44	0.67	-21.52	

Model: ARS1047				LINEAR S-PARAMETERS				Icc=355.2	
		Vcc=+12V							
FREQ.	S11	S21	S12	S22					
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG	
100	-8.91	-37.60	11.20	-10.10	-19.40	157.00	-15.60	-31.30	
150	-9.89	-46.50	11.50	-26.20	-19.70	147.00	-18.00	-32.50	
200	-10.70	-55.80	11.60	-40.50	-19.80	136.00	-19.70	-29.30	
250	-11.50	-65.70	11.60	-53.90	-19.80	127.00	-21.00	-22.70	
300	-12.40	-75.70	11.60	-66.90	-19.80	117.00	-21.60	-14.60	
350	-13.50	-85.80	11.60	-79.60	-19.90	106.00	-21.30	-5.45	
400	-14.90	-95.80	11.60	-92.10	-19.90	95.20	-20.30	2.05	
450	-16.50	-105.00	11.50	-105.00	-20.10	85.10	-19.10	5.25	
500	-18.50	-114.00	11.50	-117.00	-20.10	74.80	-17.60	4.96	
550	-21.10	-122.00	11.40	-129.00	-20.20	64.10	-16.40	2.73	
600	-24.80	-127.00	11.30	-142.00	-20.30	53.90	-15.20	-1.93	
650	-30.30	-123.00	11.20	-154.00	-20.40	43.40	-14.20	-7.53	
700	-36.40	-68.90	11.10	-166.00	-20.60	33.20	-13.40	-13.80	
750	-30.30	-22.30	11.00	-178.00	-20.80	22.90	-12.70	-21.30	
800	-25.60	-18.50	11.00	-170.00	-20.80	12.50	-12.10	-29.00	
850	-22.80	-23.20	10.90	-158.00	-21.00	2.06	-11.70	-37.40	
900	-20.90	-29.90	10.70	-146.00	-21.20	-8.00	-11.30	-45.80	
950	-19.50	-37.30	10.60	-134.00	-21.30	-17.50	-11.10	-55.30	
1000	-18.50	-45.30	10.50	-122.00	-21.40	-27.70	-11.00	-64.60	