

FEATURES

- Frequency Range: 10 to 1000 MHz
- High Power Output: +24 dBm (Typ)
- Medium Gain: 13.0 dB (Typ)
- Temperature Compensated

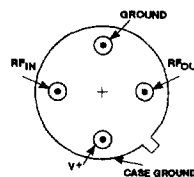
APPLICATIONS

- IF/RF Amplification
- Output Stage

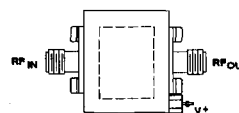
DESCRIPTION

The 1024 Series is a thin-film bipolar RF amplifier for higher output power and medium-gain applications up to 1000 MHz. Resistive feedback and active bias assure temperature compensation and increased immunity to bias voltage variations. Low

VSWR is maintained by inductive tuning while the RF is coupled through the amplifier by internal blocking capacitors. The 1024 Series amplifiers are available in either the TO-8 hermetic case or connected TC-1 package.



UTO—TO-8T, p. 16-48

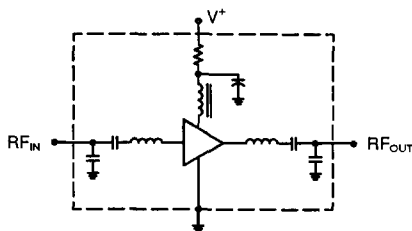


UTC—TC-1, p. 16-42

ELECTRICAL SPECIFICATIONS (Measured in a 50-ohm system @ +15 VDC nominal unless otherwise noted)

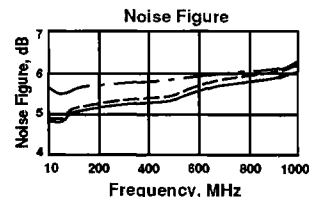
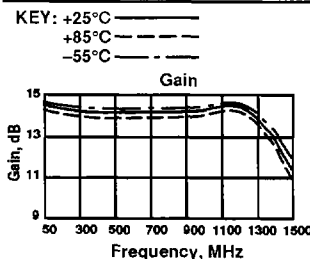
Symbol	Characteristic	Typical T _c = 25°C	Guaranteed Specifications		Unit
			T _c = 0° to 50°C	T _c = -55° to +85°C	
BW	Frequency Range	10-1000	10-1000	10-1000	MHz
GP	Small Signal Gain (Min.)	13.0	12.0	12.0	dB
—	Gain Flatness (Max.)	±0.2	±1.0	±1.0	dB
NF	Noise Figure (Max.)	5.5	6.5	7.0	dB
P _{1dB}	Power Output @ +1 dB Compression				
—	10-500 MHz (Min.)	+26.0	+24.5	+24.0	dBm
—	500-1000 MHz (Min.)	+24.0	+22.0	+21.5	dBm
—	Input VSWR (Max.)	1.5:1	2.0:1	2.0:1	—
—	Output VSWR (Max.)	1.5:1	2.0:1	2.0:1	—
IP ₃	Two Tone 3rd Order Intercept Point	+35.0	—	—	dBm
IP ₂	Two Tone 2nd Order Intercept Point	+42.0	—	—	dBm
HP ₂	One Tone 2nd Harmonic Intercept Point	+48.0	—	—	dBm
I _b	DC Current	155	—	—	mA

SCHEMATIC



TYPICAL PERFORMANCE OVER TEMPERATURE

(@ +15 VDC unless otherwise noted)



MAXIMUM RATINGS

DC Voltage	17 Volts
Continuous RF Input Power	+14 dBm
Operating Case Temperature	-55°C to +100°C
Storage Temperature	-62°C to +150°C
"R" Series Burn-In Temperature	+100°C

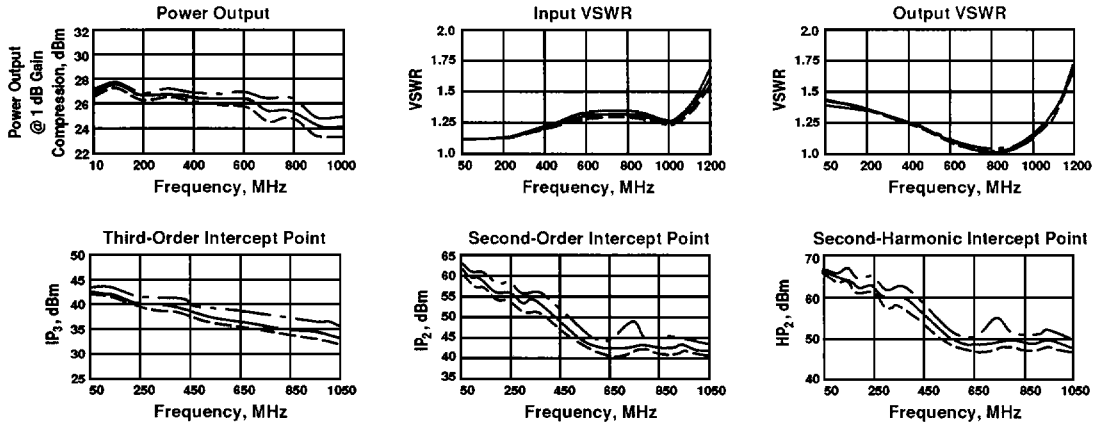
THERMAL CHARACTERISTICS*

θ _{Jc}	72/52/52°C/W
Active Transistor Power Dissipation	663/498/498 mW
Junction Temperature Above Case Temperature	48/26/26°C
MTBF (MIL-HDBK-217E, A _{UP} @ 90°C)	454,100 Hrs.

*For further information, see High Reliability section, p. 17-2.

WEIGHT: (typical) UTO—2.1 grams; UTC—21.5 grams

TYPICAL PERFORMANCE OVER TEMPERATURE (continued)



AUTOMATIC NETWORK ANALYZER MEASUREMENTS (Typical production unit at +25°C ambient)

S-PARAMETERS

BIAS = 15.00 VOLTS

FREQ GHz	S ₁₁		S ₂₁		S ₁₂		S ₂₂		GPDEL ns	PHASE DEG
	Mag	Ang	dB	Ang	dB	Ang	Mag	Ang		
.05	.03	-75.5	14.0	173.0	-20.3	-3.0	.17	167.95	.56	.28
.10	.03	-81.5	14.0	163.1	-20.3	-8.4	.17	162.02	.56	-.67
.15	.04	-84.5	13.9	153.8	-20.3	-13.5	.16	155.20	.51	-.83
.20	.04	-87.2	13.9	144.8	-20.4	-18.2	.15	148.08	.50	-.83
.25	.05	-88.2	13.9	135.9	-20.4	-23.1	.14	140.82	.50	-.69
.30	.06	-90.3	13.8	127.2	-20.4	-27.8	.13	133.74	.48	-.39
.35	.07	-92.6	13.8	118.4	-20.4	-32.6	.12	126.79	.49	-.15
.40	.09	-95.1	13.8	109.6	-20.4	-37.6	.11	119.60	.49	.11
.45	.10	-97.2	13.8	100.8	-20.4	-42.3	.09	112.39	.49	.36
.50	.11	-100.0	13.7	92.0	-20.4	-47.3	.08	104.69	.49	.63
.55	.12	-103.2	13.7	83.3	-20.5	-52.5	.06	97.15	.49	.93
.60	.13	-106.0	13.7	74.5	-20.5	-57.4	.04	88.99	.49	1.13
.65	.14	-108.9	13.7	65.4	-20.5	-62.7	.03	78.21	.50	1.12
.70	.14	-111.7	13.7	56.4	-20.5	-68.0	.02	63.26	.50	1.20
.75	.14	-114.1	13.7	47.3	-20.5	-73.4	.01	30.58	.51	1.06
.80	.14	-115.4	13.8	38.0	-20.5	-79.3	.00	-67.33	.51	.84
.85	.14	-115.6	13.8	28.5	-20.5	-85.1	.00	-142.32	.53	.41
.90	.13	-113.5	13.9	-18.7	-20.4	-91.2	.01	116.90	.54	-.34
.95	.12	-107.5	13.9	8.7	-20.4	-97.6	.02	85.99	.56	-1.38
1.00	.12	-97.0	14.0	-1.8	-20.4	-104.7	.05	70.20	.58	-2.80
1.10	.15	-69.6	14.1	-24.2	-20.4	-119.7	.13	46.32	.64	
1.20	.26	-60.7	14.0	-49.0	-20.6	-136.9	.26	24.62	.70	
1.30	.41	-68.1	13.4	-75.7	-21.3	-155.7	.42	2.25	.75	
1.40	.57	-82.1	12.4	-102.8	-22.5	-174.6	.58	-20.06	.75	
1.50	.68	-97.2	10.8	-128.5	-24.2	-168.9	.70	-40.77	.70	
1.60	.74	-111.2	8.9	-151.9	-26.5	156.4	.78	-59.50	.63	
1.70	.76	-123.5	7.0	-173.0	-28.8	150.5	.82	-75.96	.57	
1.80	.76	-133.7	5.2	167.2	-30.4	154.2	.82	-90.25	.54	
1.90	.72	-141.3	3.7	147.2	-30.2	159.7	.80	-102.36	.57	
2.00	.69	-145.7	2.2	124.4	-28.7	155.8	.79	-112.25	.66	
2.10	.67	-146.7	.1	97.2	-27.6	144.9	.79	-121.69	.77	
2.20	.70	-147.0	-3.1	69.9	-27.1	131.5	.79	-131.24	.73	
2.30	.75	-150.1	-7.4	48.7	-27.1	118.8	.80	-140.87	.53	
2.40	.80	-155.5	-12.0	36.0	-27.1	106.5	.81	-150.78	.29	
2.50	.83	-161.6	-16.2	31.6	-27.4	94.3	.82	-160.49	.08	

LINEARIZATION RANGE: .05 to 1.00 GHz