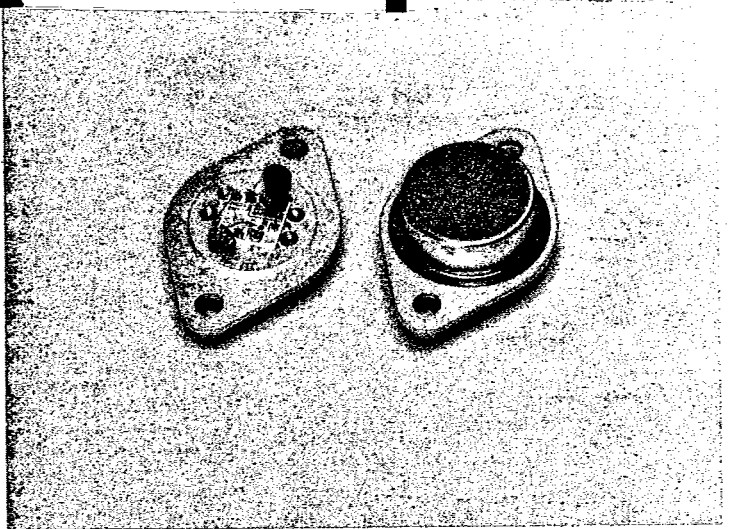


WJ-PA7

50 TO 200 MHz TO-3 CASCADABLE AMPLIFIER

- HIGH OUTPUT POWER: 1.5 WATTS (TYP.)
- WIDE POWER SUPPLY RANGE: 12 TO 24 Vdc
- HIGH THIRD-ORDER INTERCEPT POINT:
+42 dBm



Specifications

Characteristic	Typ.	Guaranteed ¹	
		0° -50°C	-54°C - +85°C
Frequency (Min.)	30-250 MHz	50-200 MHz	50-200 MHz
Small Signal Gain (Min.)			
	100-200	9.0 dB	8.0 dB
	50-100	7.7 dB	6.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)			
	100-200	6.0 dB	7.5 dB
	50-100	7.0 dB	9.0 dB
Power Output at 1 dB Compression (Min.)	31.5 dBm	30.0 dBm	29.5 dBm
VSWR (Max.)			
	Input	1.8:1	2.5:1
	Output	1.8:1	2.5:1
DC Current (Max.) at 24 Volts	430 mA	435 mA	440 mA

Notes: 1. Measured in a 50-ohm system at +24 Vdc nominal.

Typical Intermodulation Performance at 25°C

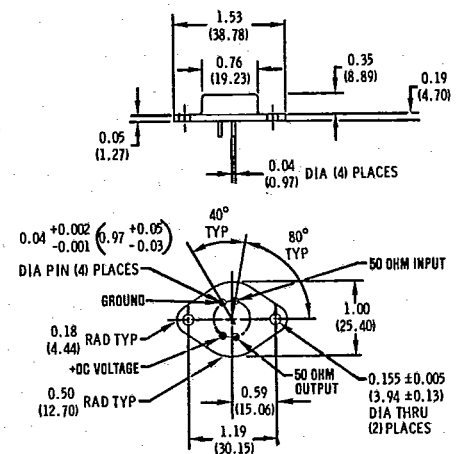
Second Order Harmonic Intercept Point +55 dBm (Typ.)
 Second Order Two Tone Intercept Point +48 dBm (Typ.)
 Third Order Two Tone Intercept Point +42 dBm (Typ.)

Absolute Maximum Ratings

Ambient Operating Temperature -54°C to +71°C
 Storage Temperature -55°C to +125°C
 Maximum Case Temperature 80°C
 Maximum DC Voltage 28 Volts
 Maximum Continuous RF Input Power 30 dBm
 Maximum Short Term RF Input Power (1 Minute Max.) 2 Watts
 Maximum Peak Power (3 μsec Max.) 4 Watts
 "S" Series Burn-In Temperature 71°C
 Proper heat sinking required to insure reliable performance.

Outline Drawing

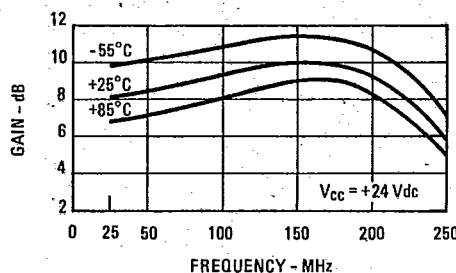
PA7



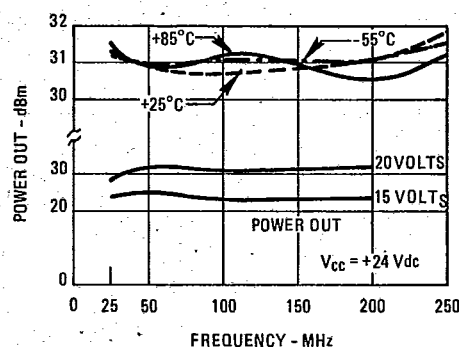
DIMENSIONS ARE IN INCHES (MILLIMETERS)

Typical Performance at 25°C

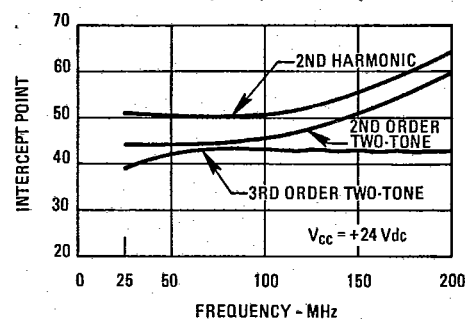
Gain



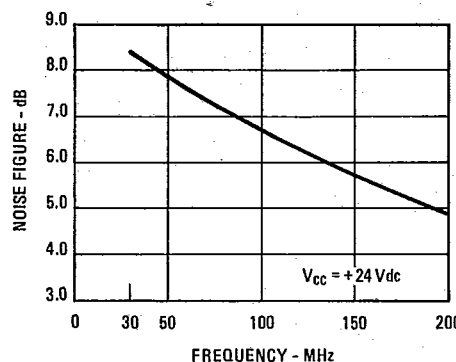
Power Output*



Intercept Point

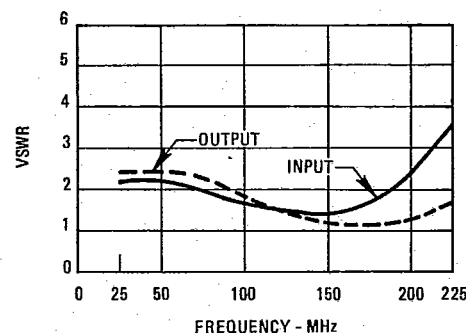


Noise Figure

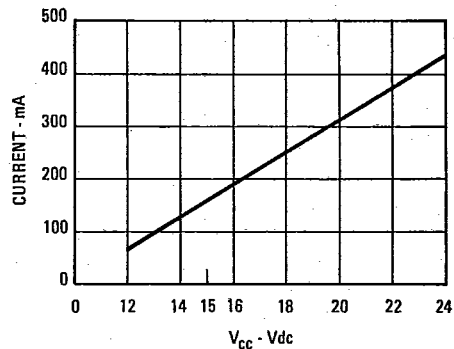


*at 1 dB Gain Compression

VSWR



Current - mA



Typical Automatic Test Data

Vcc = +24 Vdc.

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB
10.0	1.8	1.6	7.9
25.0	2.2	2.4	8.2
50.0	2.2	2.4	8.5
100.0	1.7	1.8	9.4
150.0	1.4	1.2	9.9
200.0	2.4	1.3	9.3

Vcc = +15 Vdc

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB
10.0	2.1	2.1	5.4
25.0	2.6	3.0	5.7
50.0	2.6	3.1	6.0
100.0	2.1	2.3	7.1
150.0	1.5	1.6	8.3
200.0	2.1	1.6	8.1

Linear S-Parameters

FREQUENCY MHZ	MAG S11	ANG S11	MAG S21	ANG S21	MAG S12	ANG S12	MAG S22	ANG S22
10.0	0.279	3	2.49	-140	0.10	45	0.230	-24
25.0	0.375	-13	2.57	-180	0.11	8	0.403	-2
50.0	0.372	-39	2.66	151	0.11	-13	0.414	-19
100.0	0.270	-92	2.95	102	0.11	-43	0.291	-47
150.0	0.152	155	3.14	47	0.10	-71	0.097	-93
200.0	0.419	48	2.98	-16	0.08	-92	0.139	116
250.0	0.692	-5	1.99	-77	0.07	-107	0.388	88
300.0	0.806	-41	1.14	-124	0.07	-127	0.596	63

Linear S-Parameters

FREQUENCY MHZ	MAG S11	ANG S11	MAG S21	ANG S21	MAG S12	ANG S12	MAG S22	ANG S22
10.0	0.364	8	1.86	-148	0.11	36	0.363	-9
25.0	0.440	-11	1.92	177	0.11	4	0.498	-7
50.0	0.441	-35	1.99	150	0.11	-14	0.508	-24
100.0	0.365	-84	2.26	102	0.12	-44	0.401	-61
150.0	0.203	-166	2.61	46	0.11	-76	0.219	-121
200.0	0.346	63	2.53	-21	0.09	-106	0.224	142
250.0	0.650	1	1.71	-88	0.07	-122	0.444	90
300.0	0.775	-36	0.90	-139	0.06	-139	0.620	57

Deviation from Linear Phase, Gain and Group Delay

FREQ MHZ	DEV LIN DEG	REL DEG	GAIN DEV DB	ABS GAIN DB	GROUP DELAY N-SEC
100.	-1.00	.00	-.33	3.93	2.97
150.	2.00	-53.34	.33	3.75	3.13
200.	-1.00	-112.63	-.21	3.16	3.30

Vcc = +20 Vdc

FREQUENCY MHZ	VSWR IN	VSWR OUT	GAIN DB
10.0	1.8	1.9	7.3
25.0	2.3	2.6	7.7
50.0	2.3	2.6	8.0
100.0	1.8	2.0	9.0
150.0	1.4	1.3	9.9
200.0	2.3	1.4	9.2
250.0	5.2	2.5	6.0
300.0	8.6	4.3	0.7
350.0	9.8	6.5	-4.4

Linear S-Parameters

FREQUENCY MHZ	MAG S11	ANG S11	MAG S21	ANG S21	MAG S12	ANG S12	MAG S22	ANG S22
10.0	0.297	10	2.33	-146	0.10	39	0.321	-16
25.0	0.388	-9	2.43	179	0.11	6	0.439	-6
50.0	0.387	-36	2.51	151	0.11	-14	0.448	-21
100.0	0.297	-89	2.80	102	0.11	-42	0.330	-53
150.0	0.156	170	3.11	47	0.10	-72	0.130	-108
200.0	0.395	52	2.90	-16	0.08	-95	0.174	129
250.0	0.680	-2	1.99	-79	0.07	-111	0.428	91
300.0	0.792	-37	1.09	-128	0.07	-130	0.626	64