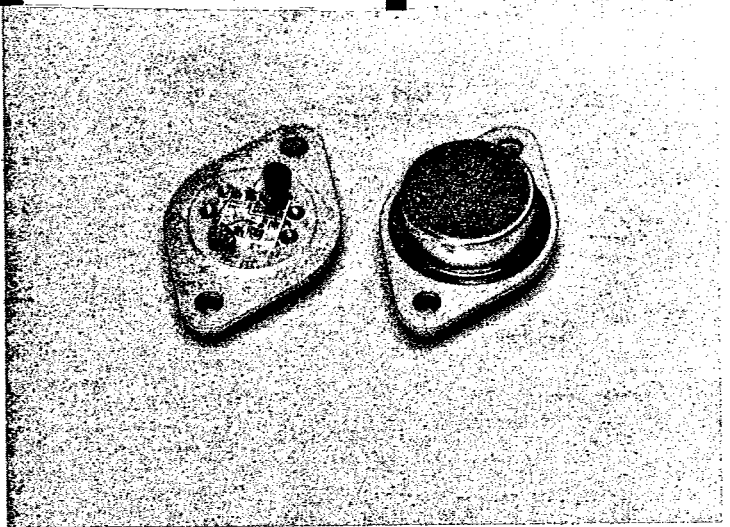


WJ-PA7

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

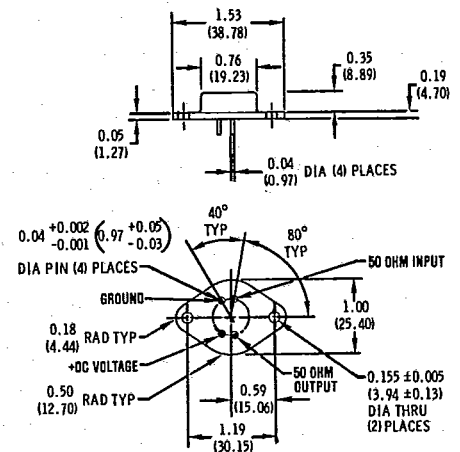


Specifications

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.)	9.0 dB	8.0 dB	7.5 dB
		7.7 dB	5.5 dB
Gain Flatness (Max.)	±0.4 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	6.0 dB	7.5 dB	8.0 dB
		7.0 dB	9.5 dB
Power Output at 1 dB Compression (Min.)	31.5 dBm	30.0 dBm	29.5 dBm
VSWR (Max.)	1.8:1	2.5:1	2.5:1
		1.8:1	2.5:1
DC Current (Max.) at 24 Volts	430 mA	435 mA	440 mA

Outline Drawing

PA7



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.)

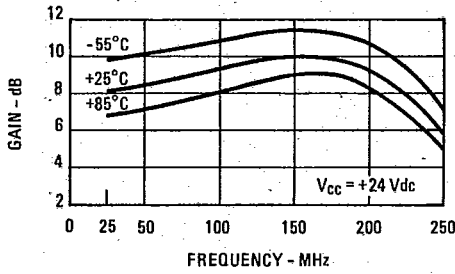
Absolute Maximum Ratings

- 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

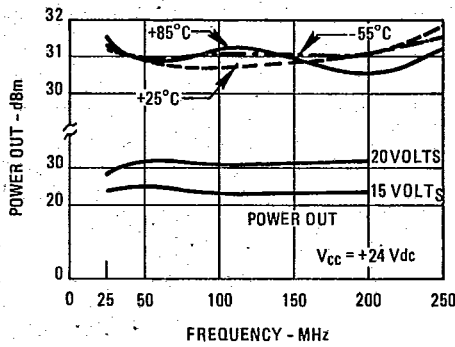
Proper heat sinking required to insure reliable performance.

Typical Performance at 25°C

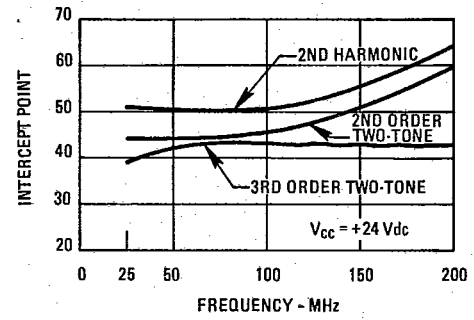
Gain



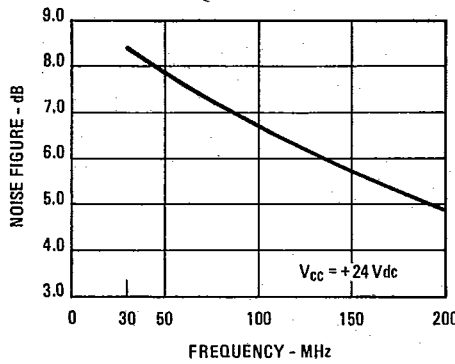
Power Output*



Intercept Point

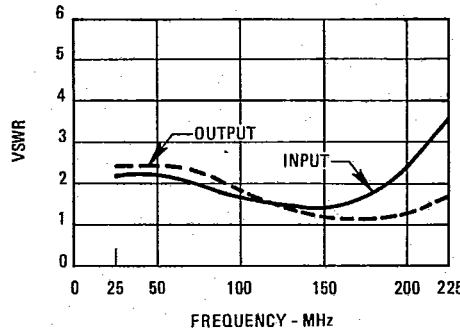


Noise Figure

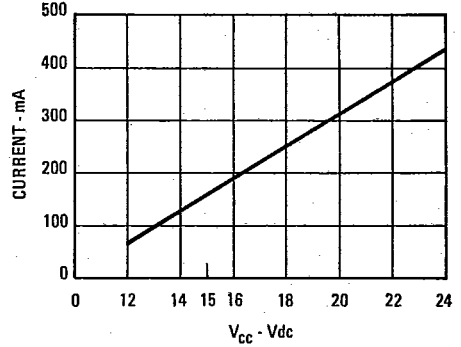


***at 1 dB Gain Compression**

VSWR



Current - mA



Typical Automatic Test Data

V_{cc} = +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

V_{cc} = +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	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
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	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
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	0.481	-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 0 DEG	REL 0 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

V_{cc} = +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	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
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