WJ-A23

5 TO 1500 MHz TO-8 CASCADABLE AMPLIFIER

- LOW NOISE: 4.8 dB (TYP.)
- LOW VSWR: < 1.4:1 (TYP.)

Specifications

Characteristic	Typical	Guaranteed* 0°-50°C	Guaranteed* -54°C - +85°C
Frequency (Min.)	1-1600 MHz	5-1500 MHz	5-1500 MHz
Small Signal Gain (Min.)	11 dB	10 dB	9.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.6 dB	±1.0 dB
Noise Figure (Max.)	4.8 dB	5.5 dB	6.0 dB
Power Output at 1 dB Compression (Min.)	+4.0 dBm	+2.0 dBm	+2.0 dBm
VSWR (Max.) Input/Output	< 1.4:1	1.9:1	2.0:1
DC Current (Max.) at 15 Volts	14 mA	16 mA	18 mA

*Measured in a 50-ohm system at +15 Vdc Nominal.

Typical Intermodulation Performance at 25°C

Second Order Harmonic Intercept Point . . . . . +29 dBm (Typ.)
Second Order Two Tone Intercept Point . . . . . +24 dBm (Typ.)
Third Order Two Tone Intercept Point . . . . . +15 dBm (Typ.)

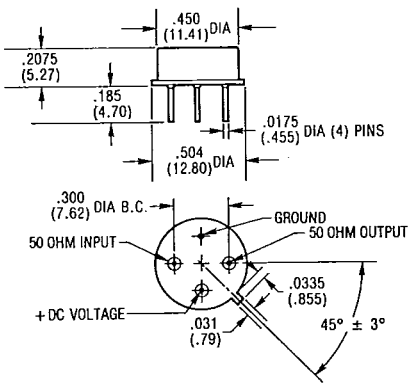
Absolute Maximum Ratings

Ambient Operating Temperature . . . . . -54°C to +100°C
Storage Temperature . . . . . -62°C to +125°C
Maximum Case Temperature . . . . . 125°C
Maximum DC Voltage . . . . . +20 Volts
Maximum Continuous RF Input Power . . . . . +13 dBm
Maximum Short Term RF Input Power . . . . . +17 dBm (1 Minute Max.)
Maximum Peak Power . . . . . 0.5 Watt (3 μsec Max.)
"S" Series Burn-In Temperature . . . . . 125°C

Weight 2.27 grams (0.08 oz.) maximum

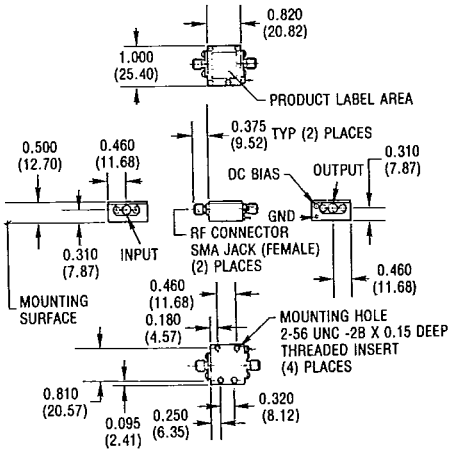
Outline Drawings

A23



DIMENSIONS ARE IN INCHES (MILLIMETERS).

CA23

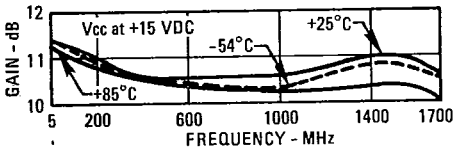


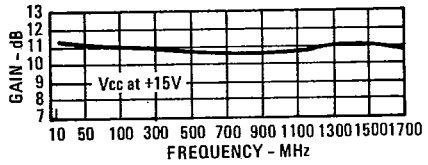
DIMENSIONS ARE IN INCHES (MILLIMETERS).

*WJ-CA23 is standard WJ-A23 installed in miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range. See Cascaded Thin Film Amplifiers.

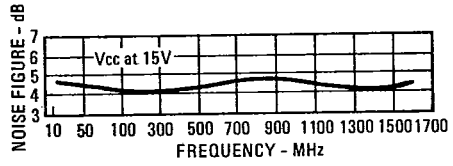
Typical Performance at 25°C

Gain

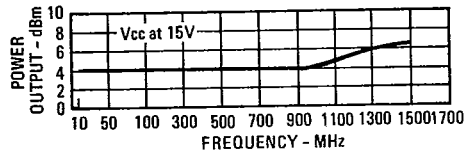




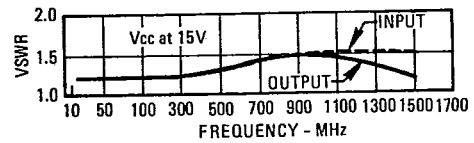
Noise Figure



Power Output*



VSWR



Typical Automatic Test Data

V_{CC} = 15 V

FREQ MHZ	VSWR IN	VSWR OUT	GAIN DB
100.	1.1	1.0	11.5
200.	1.1	1.1	11.5
300.	1.1	1.1	11.4
400.	1.1	1.2	11.4
500.	1.1	1.2	11.2
600.	1.1	1.3	11.1
700.	1.2	1.3	11.0
800.	1.2	1.4	10.9
900.	1.2	1.4	11.0
1000.	1.2	1.4	11.0
1100.	1.2	1.4	11.0
1200.	1.2	1.4	11.0
1300.	1.1	1.3	11.1
1400.	1.1	1.3	11.3
1500.	1.2	1.3	11.5
1600.	1.5	1.2	11.6

Linear S-Parameters

FREQ	S11		S21		S12		S22	
MHZ	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.	.03	-46.1	3.78	162.7	.13	-6.1	.01	149.4
200.	.04	-37.6	3.77	148.7	.13	-13.1	.03	46.7
300.	.05	-55.7	3.74	135.4	.13	-18.5	.05	31.3
400.	.05	-71.3	3.71	121.1	.12	-27.3	.07	14.0
500.	.06	-80.0	3.63	107.8	.12	-33.5	.10	4.3
600.	.07	-95.4	3.59	93.4	.12	-39.8	.12	-9.5
700.	.07	-105.9	3.55	78.2	.12	-47.0	.14	-18.3
800.	.08	-116.4	3.52	63.8	.12	-55.8	.15	-31.2
900.	.08	-128.5	3.53	48.3	.12	-62.4	.17	-41.6
1000.	.08	-144.5	3.53	33.5	.12	-70.6	.16	-50.3
1100.	.09	-160.5	3.53	19.1	.11	-77.0	.16	-62.4
1200.	.08	176.3	3.55	4.1	.11	-85.7	.16	-75.9
1300.	.06	143.7	3.59	-11.7	.11	-96.0	.15	-89.4
1400.	.06	85.6	3.65	-29.6	.11	-105.8	.13	-103.8
1500.	.11	33.4	3.74	-49.1	.11	-116.5	.12	-125.1
1600.	.20	-2.1	3.79	-70.2	.11	-129.4	.09	-144.0
1700.	.34	-30.2	3.72	-93.3	.11	-143.9	.04	-163.0

Deviation from Linear Phase, Gain and Group Delay

FREQ MHZ	DEV LIN θ DEG	REL θ DEG	GAIN DEV DB	ABS GAIN DB	GROUP DELAY N-SEC
100.	-3.34	.00	.33	11.54	.37
200.	-2.45	-13.27	.21	11.42	.37
300.	-1.57	-26.53	.27	11.48	.36
400.	-.19	-39.31	.16	11.37	.35
500.	1.20	-52.07	.04	11.26	.37
600.	1.67	-65.74	-.14	11.08	.39
700.	1.71	-79.86	-.23	10.98	.38
800.	2.28	-93.44	-.25	10.97	.38
900.	2.64	-107.23	-.33	10.89	.39
1000.	2.36	-121.66	-.33	10.89	.40
1100.	2.25	-135.92	-.19	11.03	.39
1200.	2.29	-150.04	-.12	11.10	.41
1300.	.93	-165.54	-.02	11.19	.46
1400.	-2.49	-183.11	.07	11.28	.51
1500.	-7.29	-202.07	.18	11.40	.53