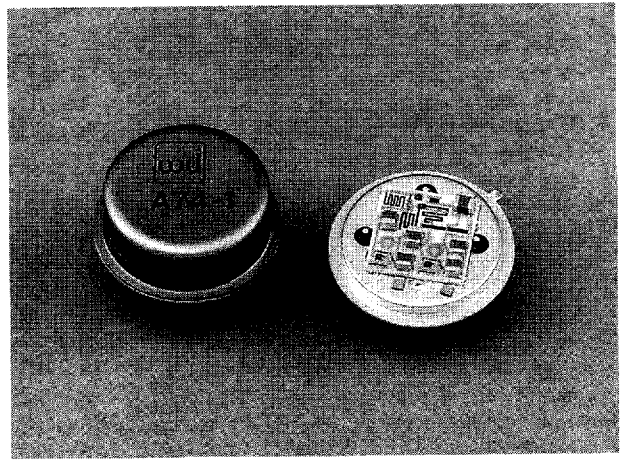


WJ-A74-1 / SMA74-1

5 to 250 MHz TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH GAIN - TWO STAGES: 31.0 dB (TYP.)
- ◆ MEDIUM OUTPUT LEVEL: +8.5 dBm (TYP.)
- ◆ WIDE POWER SUPPLY RANGE:
+8 TO +15 VOLTS
- ◆ LOW VSWR: < 1.3:1 (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	1-300 MHz	5-250 MHz	5-250 MHz
Small Signal Gain (Min.)	31.0 dB	30.0 dB	29.0 dB
Gain Flatness (Max.)	< ±0.2dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	4.5 dB	5.0 dB	5.5 dB
Power Output at 1 dB Compression (Min.)	+8.5 dBm	+7.0 dBm	+7.0 dBm
VSWR (Max.) Input/Output	<1.3:1	1.7:1	2.0:1
DC Current (Max.) at 15 Volts	40 mA	42 mA	44 mA

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

Notes:

Notes:

1. WJ-CA74-1 is a standard WJ-A74-1 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

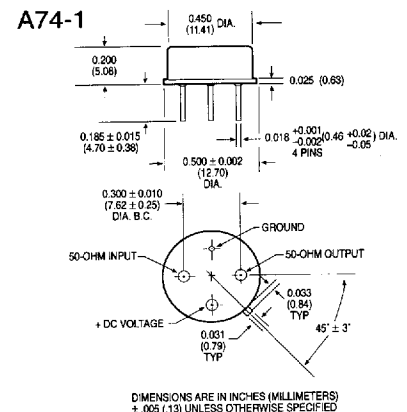
Second Order Harmonic Intercept Point.....	+42 dBm (Typ.)
Second Order Two Tone Intercept Point.....	+34 dBm (Typ.)
Third Order Two Tone Intercept Point.....	+21 dBm (Typ.)

Absolute Maximum Ratings

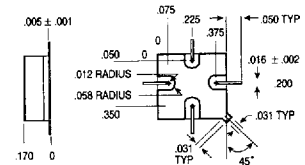
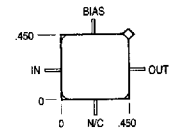
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage.....	+17 Volts
Maximum Continuous RF Input Power	+6 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....	50 Milliwatts
Maximum Peak Power	0.5 Watt (3 µsec Max.)
“S” Series Burn-in Temperature (Case).....	125°C

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings



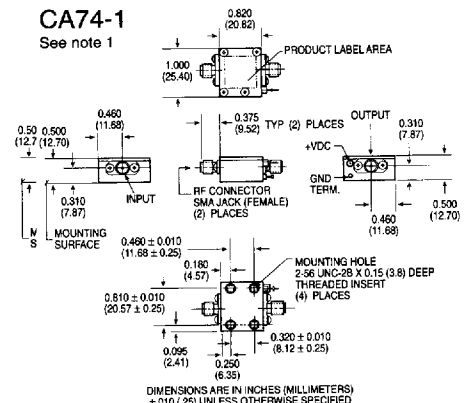
SMA74-1



DIMENSIONS ARE IN INCHES (MILLIMETERS)
+0.10 (.25) UNLESS OTHERWISE SPECIFIED

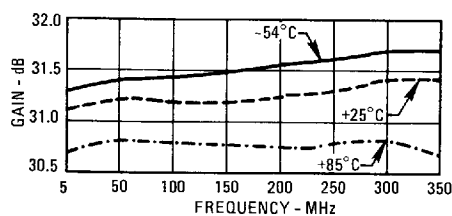
CA74-1

See note 1

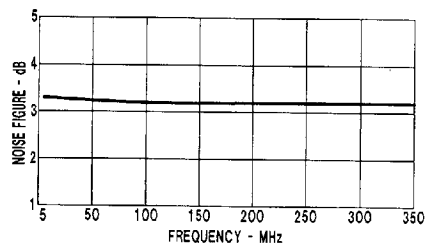


Typical Performance at 25°C

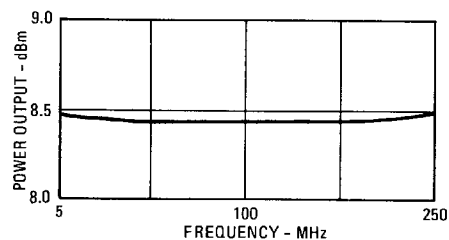
Gain



Noise Figure

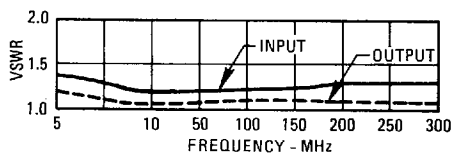


Power Output*



*at 1 dB Gain Compression

VSWR



Typical Automatic Test Data

$V_{CC} = 15.0 \text{ V}$

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	2.4	1.8	32.8
2.0	1.6	1.5	32.1
5.0	1.2	1.3	31.9
10.0	1.1	1.2	32.0
50.0	1.0	1.2	32.2
100.0	1.0	1.3	32.3
150.0	1.0	1.3	32.4
200.0	1.1	1.4	32.5
250.0	1.1	1.4	32.3
300.0	1.1	1.3	32.3
350.0	1.2	1.3	32.1
400.0	1.3	1.3	32.0

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.419	-48	43.443	17	.014	1	.293	-67
2.0	.228	-82	40.114	7	.010	-11	.196	-105
5.0	.084	-122	39.250	2	.008	-5	.132	-148
10.0	.032	-143	39.804	-1	.008	2	.108	-165
50.0	.011	-156	40.647	-17	.008	3	.109	-171
100.0	.018	157	41.096	-36	.009	3	.128	-176
150.0	.024	150	41.462	-55	.009	3	.144	175
200.0	.033	124	42.012	-74	.010	2	.153	163
250.0	.046	91	41.438	-94	.009	7	.153	152
300.0	.060	66	41.306	-113	.010	5	.148	139
350.0	.084	40	40.412	-133	.010	4	.134	127
400.0	.118	11	39.887	-153	.011	6	.114	116

Thermal Data: $V_{CC} = 15 \text{ Vdc}$

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.185 W
 Junction Temperature Rise Above Case T_{jc} ... 8°C