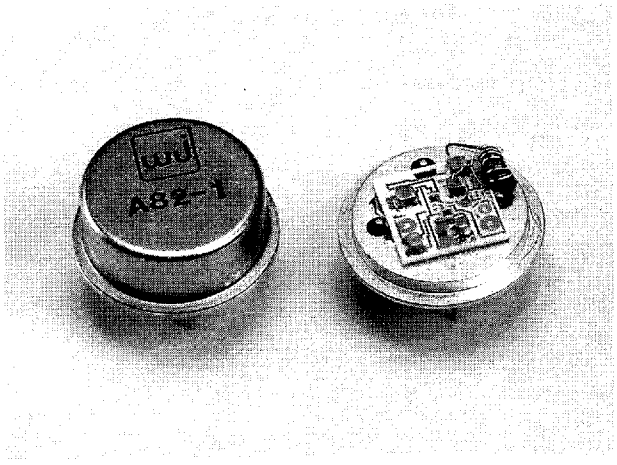
WJ-A82-1 / SMA82-1

20 to 250 MHz
TO-8 CASCADABLE AMPLIFIER



- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH REVERSE ISOLATION: > 34 dB (TYP.)
- ◆ HIGH OUTPUT POWER: +15.5 dBm (TYP.)
- ◆ HIGH GAIN: 18 dB (TYP)
- ◆ LOW OUTPUT VSWR : 1.1:1 (TYP.)

Specifications*

Characteristics	Typical	Guaranteed 0° - 50°C	Guaranteed -54°C - +85°C
Frequency (Min.)	20-300 MHz	20-250 MHz	20-250 MHz
Small Signal Gain (Min.)	18 dB	16.5 dB	16.0 dB
Gain Flatness (Max.)	+0.5 dB	+0.7 dB	+1.0 dB
Noise Figure (Max.)	4.0 dB	4.5 dB	5.0 dB
Power Output			
at 1 dB Compression (Min.)	+15.5 dBm	+14.0 dBm	+13.5 dBm
VSWR (Max.)			
Input	1.6:1	1.9:1	2.0:1
Output	1.1:1	1.3:1	1.3:1
DC Current (Max.) at +15 Volts	50 mA	52 mA	54 mA

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

Notes:
1. WJ-CA82-1 is a standard WJ-A82-1 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.....38 dBm (Typ.)
Second Order Two Tone Intercept Point .....30 dBm (Typ.)
Third Order Two Tone Intercept Point.....28 dBm (Typ.)

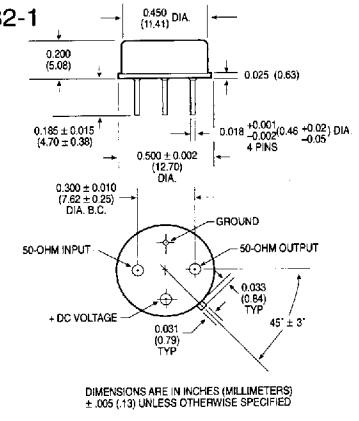
Absolute Maximum Ratings

Storage Temperature .....-62°C to 125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage..... +17 Volts
Maximum Continuous RF Input Power .....+10 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 (0.07oz.)

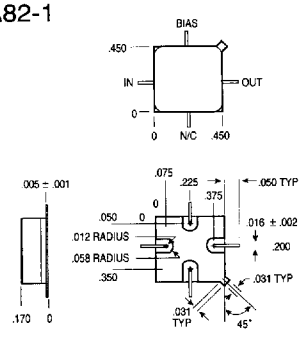
Outline Drawings

A82-1



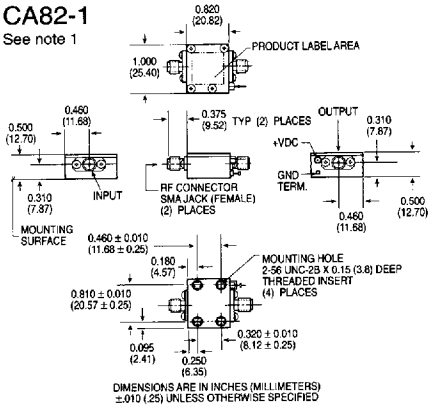
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

SMA82-1



DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

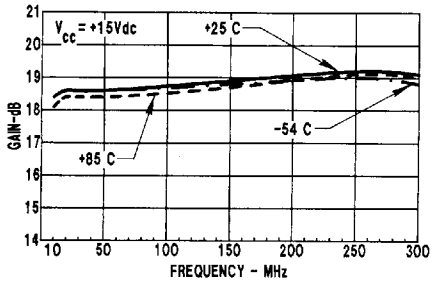
CA82-1
See note 1

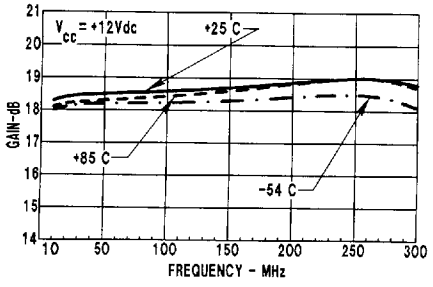


DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

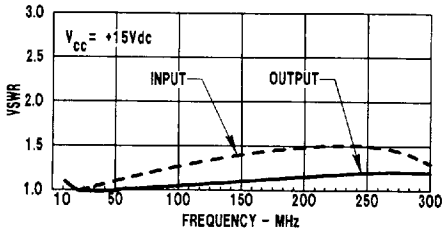
Typical Performance at 25°C

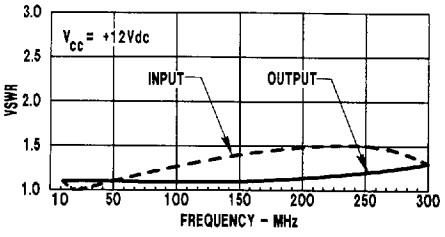
Gain vs. Temperature



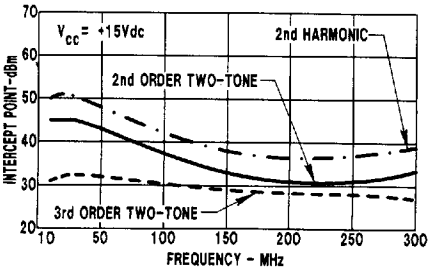


Input/Output VSWR



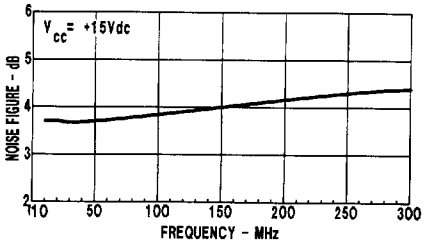


Intercept Points

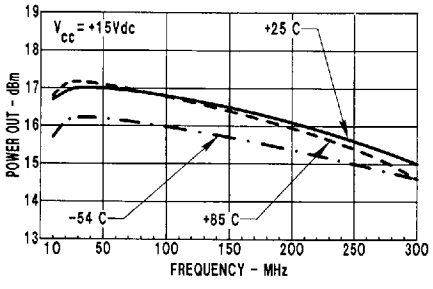


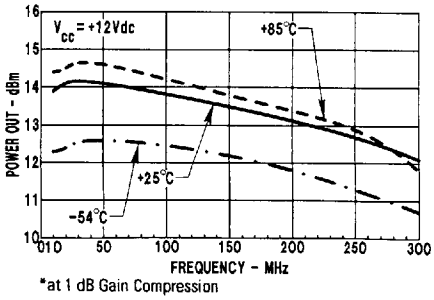
1

Noise Figure



Output Power vs. Temperature *





*at 1 dB Gain Compression

Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
2.0	2.1	1.3	18.2
5.0	1.3	1.1	19.5
10.0	1.2	1.1	19.6
20.0	1.1	1.1	19.7
50.0	1.1	1.1	19.8
100.0	1.1	1.1	19.8
150.0	1.2	1.1	20.0
200.0	1.3	1.1	20.0
250.0	1.4	1.1	19.7
300.0	1.5	1.2	19.1
350.0	1.6	1.3	18.0
400.0	1.6	1.5	16.7

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.0	.360	–65	8.133	–136	.014	41	.139	142
5.0	.141	–94	9.458	–164	.018	16	.066	93
10.0	.072	–113	9.561	–174	.019	8	.042	66
20.0	.042	–142	9.632	179	.019	2	.035	41
50.0	.035	129	9.754	166	.019	–5	.034	16
100.0	.065	65	9.822	149	.018	–13	.037	–3
150.0	.096	19	9.943	131	.017	–21	.038	–33
200.0	.131	–17	9.994	112	.015	–26	.040	–80
250.0	.164	–55	9.684	92	.014	–26	.059	–135
300.0	.196	–90	9.037	70	.012	–24	.097	–177
350.0	.228	–123	7.944	49	.012	–16	.147	153
400.0	.244	–151	6.804	30	.013	–10	.192	128

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.167 W
Junction Temperature Rise Above Case T_{jc} ... 8°C