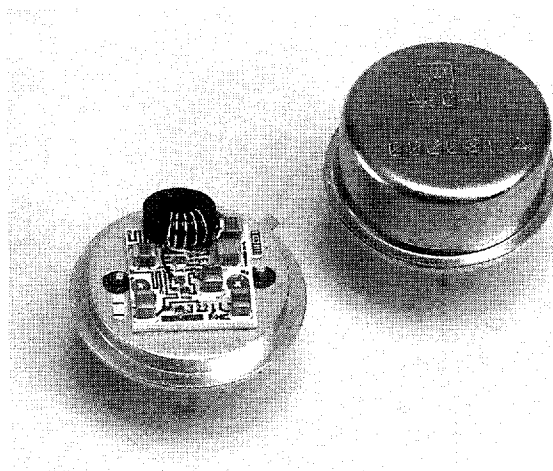


WJ-A80-1/SMA80-1

10 to 200 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH REVERSE ISOLATION: >32 dB (TYP.)
- ◆ VERY LOW NOISE: 2.0 dB (TYP.)
- ◆ HIGH GAIN: 27.3 dB (TYP.)
- ◆ HIGH EFFICIENCY: 29 mA at 15 VOLTS (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	5-200 MHz	10-200 MHz	10-200 MHz
Small Signal Gain (Min.)	27.3 dB	26.0 dB	25.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	2.0 dB	2.5 dB	3.0 dB
Power Output at 1 dB Compression (Min.)	+16.0 dBm	+14.5 dBm	+14.0 dBm
VSWR (Max.)			
Input	1.5:1	1.8:1	2.0:1
Output	1.8:1	2.1:1	2.3:1
DC Current (Max.) at 15 Volts	30 mA	32 mA	34 mA

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

Notes:

WJ-CA80-1 is a standard WJ-A80-1 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

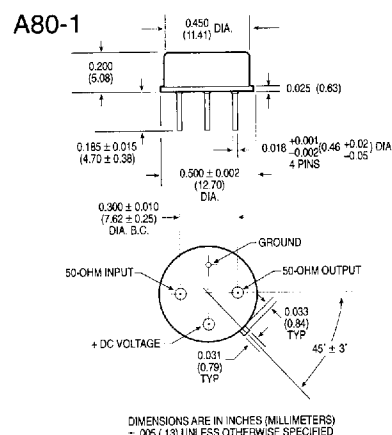
Second Order Harmonic Intercept Point	+39 dBm (Typ.)
Second Order Two-Tone Intercept Point	+33 dBm (Typ.)
Third Order Two-Tone Intercept Point	+28 dBm (Typ.)

Absolute Maximum Ratings

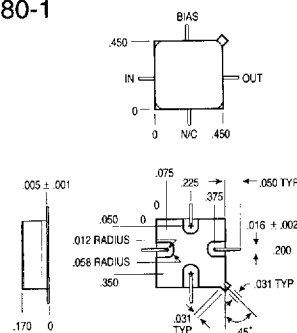
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage	+17 Volts
Maximum Continuous RF Input Power	+10 dBm
Maximum Short-Term RF Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power	0.5 Watt (3 µsec Max.)
"S" Series Burn-In Temperature (Case)	125°C

Weight: 2.0 Grams (0.07 oz.)

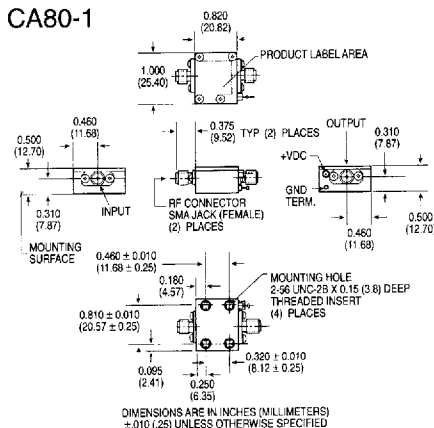
Outline Drawings



SMA80-1

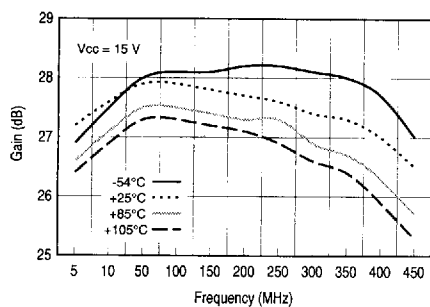


CA80-1

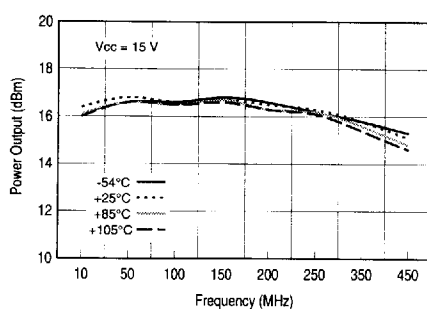


Typical Performance at 25°C

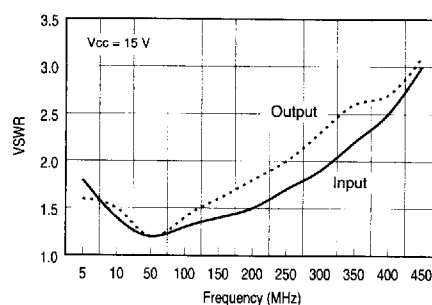
Gain



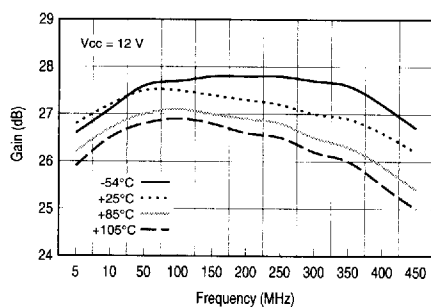
Power Output (1 dB Gain Compression)



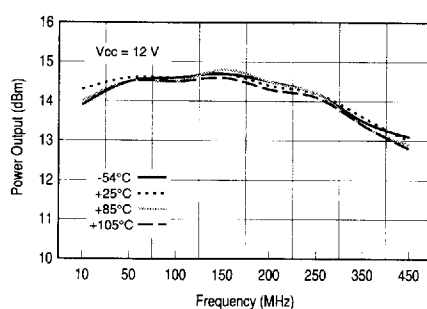
VSWR



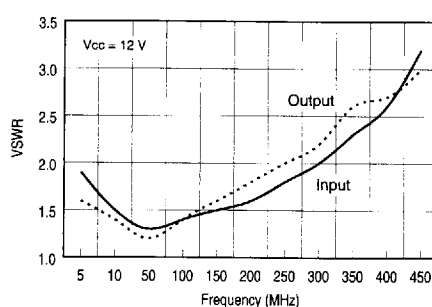
Gain



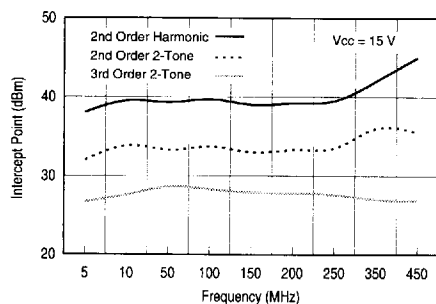
Power Output (1 dB Gain Compression)



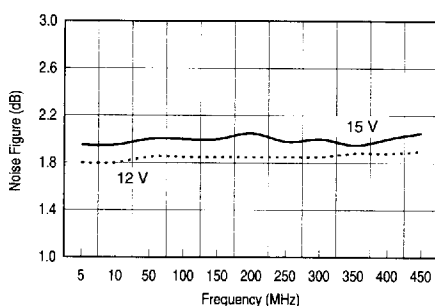
VSWR



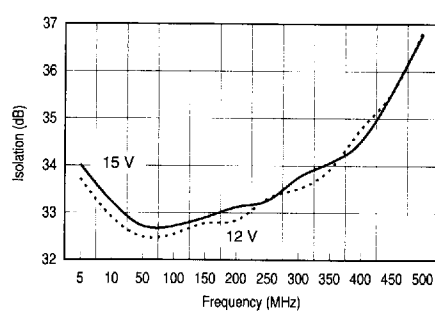
Intercept Point



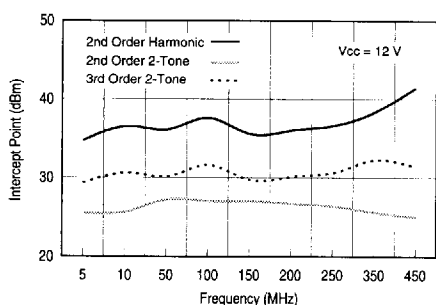
Noise Figure



Reverse Isolation



Intercept Point



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	1.8	1.6	27.2
10.0	1.4	1.5	27.6
50.0	1.2	1.2	27.9
100.0	1.3	1.4	27.9
200.0	1.5	1.8	27.7
300.0	1.9	2.3	27.4
400.0	2.5	2.7	27.0
500.0	3.2	3.1	25.9

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	.279	-49	22.94	-157	.02	12	.229	118
10.0	.183	-46	23.98	-169	.02	3	.185	106
50.0	.110	-36	24.82	169	.02	-10	.099	50
100.0	.125	-41	24.94	152	.02	-23	.164	42
200.0	.205	-63	24.16	122	.02	-42	.227	14
300.0	.302	-75	23.55	90	.02	-62	.387	-21
400.0	.423	-87	22.51	58	.02	-87	.464	-61
500.0	.527	-101	19.72	24	.02	-114	.516	-107

V_{CC} = 12.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	1.9	1.6	26.8
10.0	1.5	1.4	27.2
50.0	1.3	1.2	27.5
100.0	1.4	1.4	27.5
200.0	1.6	1.8	27.3
300.0	2.0	2.2	27.0
400.0	2.6	2.7	26.6
500.0	3.6	3.1	25.6

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	.299	-44	21.91	-156	.02	13	.226	116
10.0	.208	-39	22.91	-168	.02	3	.158	97
50.0	.142	-30	23.72	170	.02	-10	.110	31
100.0	.157	-38	23.79	153	.02	-23	.170	29
200.0	.236	-61	23.08	122	.02	-43	.278	9
300.0	.335	-75	22.49	91	.02	-63	.383	-25
400.0	.449	-88	21.50	58	.02	-87	.464	-64
500.0	.561	-102	19.03	25	.02	-116	.513	-110

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{JC} 45°C/W
 Transistor Power Dissipation P_d0.270 W
 Junction Temperature Rise Above Case T_{JC} ...12.2°C