



A1212/ SMA1212

100 to 1200 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ VERY LOW NOISE: 1.8 dB (TYP.)
- ◆ HIGH OUTPUT POWER: 19 dBm (TYP.)
- ◆ HIGH POWER ADDED EFFICIENCY: 20%



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	100-1200 MHz	100-1200 MHz	100-1200 MHz
Small Signal Gain (Min.)	14.0 dB	12.5 dB	11.5 dB
Gain Flatness (Max.)	±0.6 dB	±1.0 dB	±1.2 dB
Noise Figure (Max.)	1.8 dB	2.3 dB	2.7 dB
Power Output at 1 dB Compression (Min.)	+19 dBm	+17 dBm	+16 dBm
VSWR Input/Output (Max.)	1.8:1	2.1:1	2.3:1
DC Current (Max.) at +5 Volts	70 mA	75 mA	85 mA

*Measured in a 50-ohm system at +5 Vdc Nominal.

Note: WJ-CA1212 is a standard WJ-A1212 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

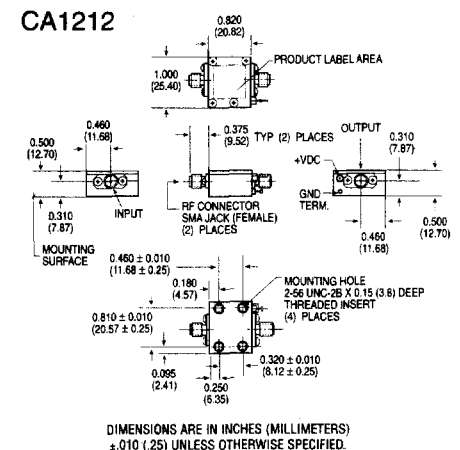
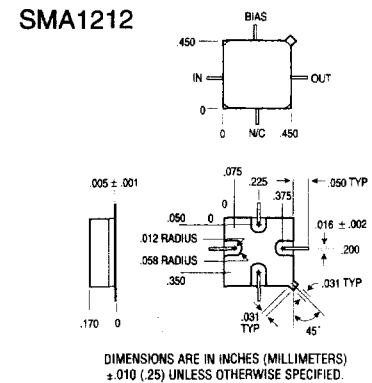
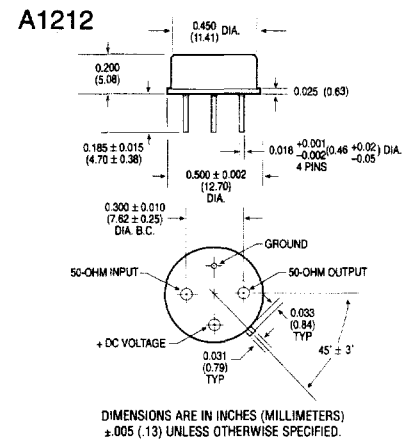
Second Order Harmonic Intercept Point+46 dBm (Typ.)
 Second Order Two-Tone Intercept Point+40 dBm (Typ.)
 Third Order Two-Tone Intercept Point+29 dBm (Typ.)

Absolute Maximum Ratings

Storage Temperature.....-62°C to +125°C
 Maximum Case Temperature.....+125°C
 Maximum DC Voltage8 Volts
 Maximum Continuous RF Input Power+13 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.)

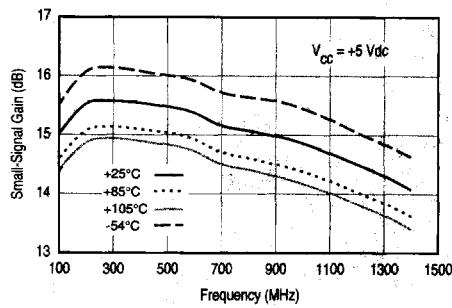
Outline Drawings



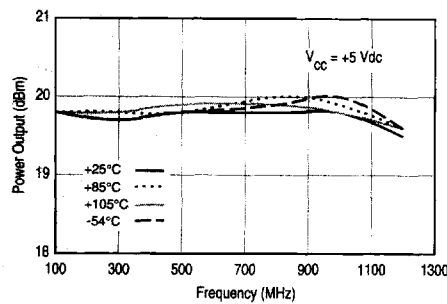
Typical Performance at 25°C

WJ-A1212/SMA1212

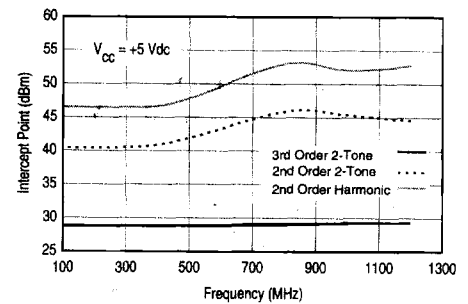
Small Signal Gain



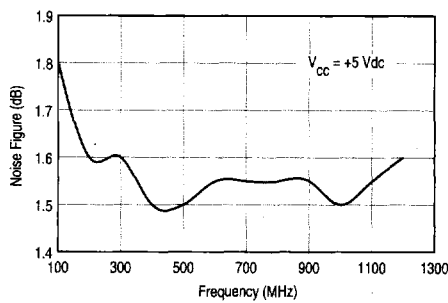
Power Output (1dB Gain Compression)



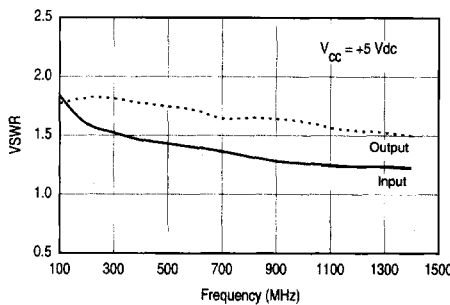
Intercept Point



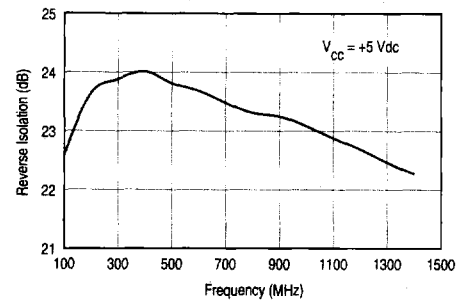
Noise Figure



VSWR



Reverse Isolation



Typical Automatic Test Data

Linear S-Parameters ($V_{CC} = +5 \text{ Vdc}$)

Frequency (MHz)	S11		S21		S12		S22		VSWR		Gain (dB)
	Mag	Ang	Mag	Ang	Mag	Ang	Mag	Ang	In	Out	
50	0.391	-24	4.757	-164	0.088	-13	0.241	-95	2.28	1.63	13.5
100	0.295	-28	5.627	-175	0.074	-17	0.277	-135	1.83	1.76	15.0
200	0.230	-25	5.976	167	0.065	-16	0.290	-166	1.59	1.82	15.5
300	0.206	-24	6.003	155	0.063	-17	0.289	178	1.52	1.81	15.6
400	0.187	-21	5.983	143	0.063	-18	0.279	167	1.46	1.77	15.5
500	0.176	-22	5.940	133	0.064	-22	0.271	158	1.43	1.74	15.5
600	0.166	-22	5.867	122	0.065	-25	0.263	151	1.40	1.71	15.4
700	0.154	-21	5.724	112	0.066	-29	0.244	146	1.36	1.64	15.3
800	0.139	-23	5.669	103	0.068	-34	0.245	142	1.32	1.65	15.1
900	0.123	-19	5.612	92	0.068	-38	0.242	132	1.28	1.64	14.9
1000	0.117	-17	5.535	83	0.070	-42	0.236	127	1.26	1.62	14.9
1100	0.111	-14	5.425	73	0.071	-47	0.220	122	1.25	1.56	14.7
1200	0.106	-10	5.312	63	0.073	-52	0.213	115	1.23	1.54	14.5
1300	0.105	-5	5.192	53	0.075	-57	0.208	110	1.23	1.52	14.3
1400	0.100	-0	5.054	43	0.076	-63	0.199	104	1.22	1.50	14.1
1500	0.100	6	4.947	34	0.078	-69	0.193	97	1.22	1.47	13.9
1600	0.101	16	4.813	24	0.080	-75	0.182	19	1.22	1.44	13.6
1700	0.093	28	4.667	15	0.081	-81	0.167	84	1.20	1.40	13.4
1800	0.105	41	4.543	5	0.082	-88	0.157	73	1.23	1.37	13.1
1900	0.121	5	4.394	-3	0.083	-95	0.145	64	1.37	1.34	12.9
2000	0.150	65	4.274	-13	0.083	-103	0.123	49	1.35	1.28	12.6

Thermal Data: $V_{CC} = +5 \text{ Vdc}$

Thermal Resistance (θ_{jc})182°C/W
 Transistor Power Dissipation (Pd)0.147 W
 Junction Temperature Rise above Case (T_{jc}).....26°C

