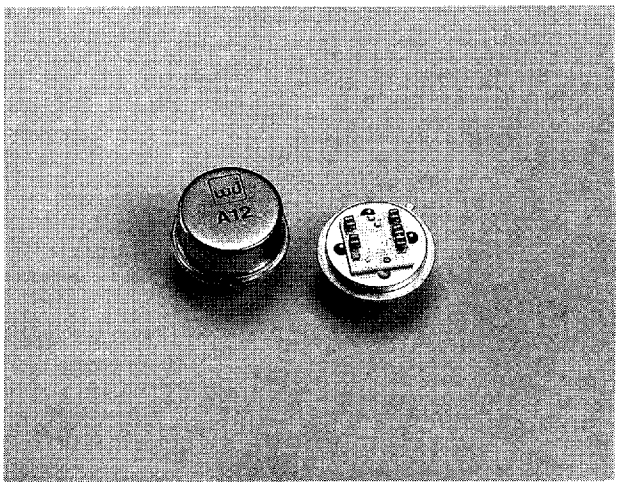
WJ-A12 / SMA12



10 to 1000 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ LOW NOISE: 2.8 dB (TYP.)
- ◆ HIGH GAIN: 16 dB (TYP.)
- ◆ MEDIUM OUTPUT POWER: +8.0 dBm (TYP.)
- ◆ LOW VSWR: <1.6:1 (TYP.)

Specifications*

Characteristic	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	5-1000 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)	16.0 dB	15.0 dB	14.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	2.8 dB	3.5 dB	3.9 dB
Power Output at 1 dB Compression (Min.)	+8.0 dBm	+7.0 dBm	+6.5 dBm
VSWR (Max.) Input/Output	<1.6:1	1.9:1	2.0:1
DC Current (Max.) at 15 Volts	22 mA	25 mA	27 mA

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

Notes:

1. WJ-CA12 is a standard WJ-A12 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.....+32 dBm (Typ.)
Second Order Two Tone Intercept Point.....+25 dBm (Typ.)
Third Order Two Tone Intercept Point.....+22 dBm (Typ.)

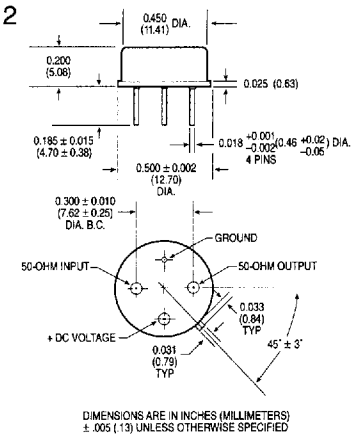
Absolute Maximum Ratings

Storage Temperature .....-62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage..... +17 Volts
Maximum Continuous RF 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.)

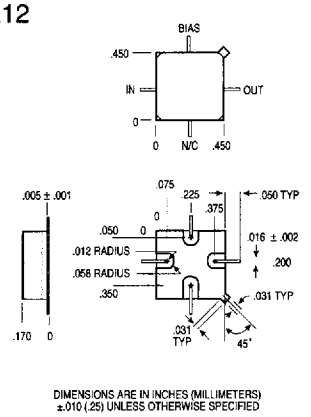
Outline Drawings

A12



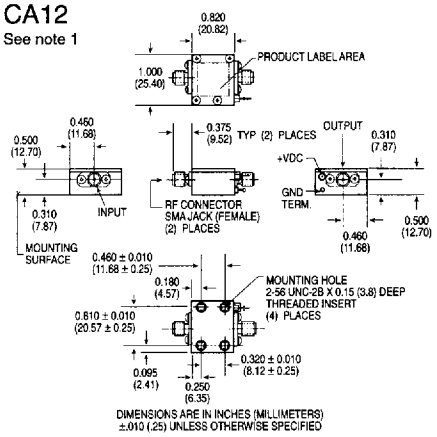
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

SMA12



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

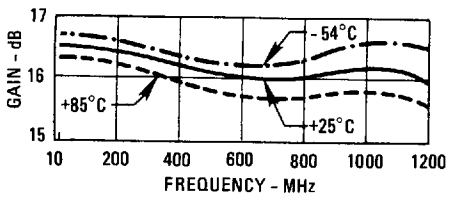
CA12
See note 1



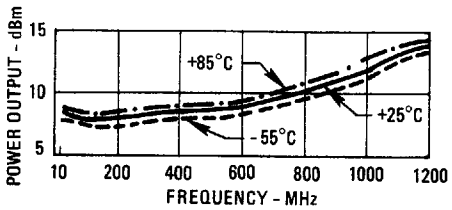
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

Gain

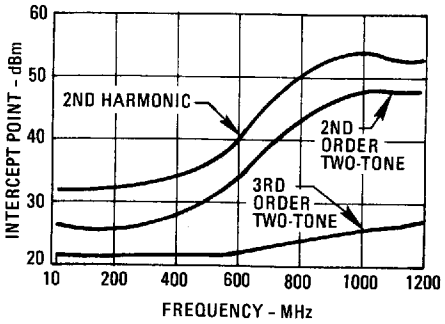


Power Output*

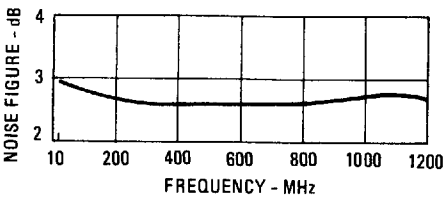


*at 1 dB Gain Compression

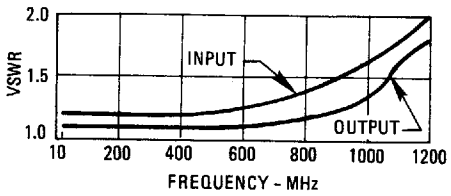
Intercept Point



Noise Figure



VSWR



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.1	1.2	16.2
2.0	1.1	1.2	16.2
5.0	1.1	1.2	16.2
10.0	1.1	1.2	16.1
50.0	1.1	1.2	16.0
100.0	1.0	1.2	15.9
200.0	1.0	1.1	15.8
300.0	1.1	1.1	15.8
400.0	1.2	1.1	15.9
500.0	1.2	1.1	16.0
600.0	1.3	1.2	16.0
700.0	1.3	1.2	16.0
800.0	1.3	1.3	16.1
900.0	1.3	1.4	16.1
1000.0	1.5	1.5	15.6
1100.0	2.1	1.6	14.5

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.041	–171	6.488	–179	.082	2	.098	–178
2.0	.043	–171	6.462	–179	.082	2	.099	–178
5.0	.046	–178	6.425	178	.083	0	.100	177
10.0	.046	173	6.369	171	.083	–2	.098	166
50.0	.035	154	6.321	163	.083	–5	.092	150
100.0	.024	147	6.226	153	.083	–9	.082	134
200.0	.007	169	6.166	139	.084	–15	.061	109
300.0	.034	–91	6.134	119	.083	–23	.027	59
400.0	.078	–109	6.256	99	.084	–31	.026	–83
500.0	.107	–135	6.307	78	.082	–40	.056	–128
600.0	.119	–156	6.325	55	.080	–48	.081	–151
700.0	.130	–179	6.328	33	.078	–55	.105	–179
800.0	.128	146	6.352	8	.080	–63	.127	146
900.0	.138	87	6.351	–18	.083	–70	.150	101
1000.0	.202	14	6.059	–49	.086	–81	.184	50
1100.0	.360	–43	5.333	–81	.090	–95	.230	–5

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.180 W
Junction Temperature Rise Above Case T_{jc} ... 8°C