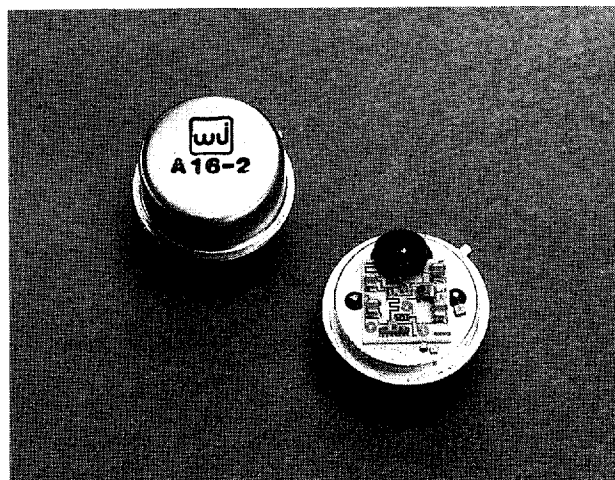


WJ-A16-2 / SMA16-2

10 to 1200 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ LOW NOISE: 3.5 dB (TYP.)
- ◆ HIGH EFFICIENCY: 15 mA (TYP.) AT 5 VOLTS
- ◆ GOOD DYNAMIC RANGE: 102.5 dB (TYP.)
IN 1 MHz BW
- ◆ LOW VSWR: <1.5:1 (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	5 - 1300 MHz	10 - 1200 MHz	10 - 1200 MHz
Small Signal Gain (Min.)	13.0 dB	12.0 dB	11.5 dB
Gain Flatness (Max.)	±2 dB	±5 dB	±7 dB
Noise Figure (Max.)	3.5 dB	4.0 dB	4.5 dB
Power Output at 1 dB	+6.0 dBm	+5.0 dBm	+4.5 dBm
Compression (Min.)			
VSWR (Max.) Input/Output	<1.5:1	1.9:1	2.0:1
DC Current (Max.) at +5 Volts	15 mA	17 mA	18 mA

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

Notes:

1. WJ-CA16-2 is a standard WJ-A16-2 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

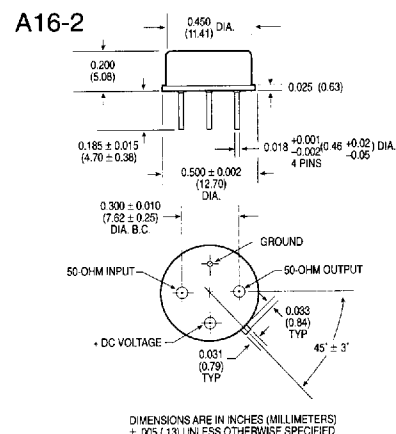
Second Order Harmonic Intercept Point.....	+34 dBm (Typ.)
Second Order Two-Tone Intercept Point	+28 dBm (Typ.)
Third Order Two-Tone Intercept Point	+18 dBm (Typ.)

Absolute Maximum Ratings

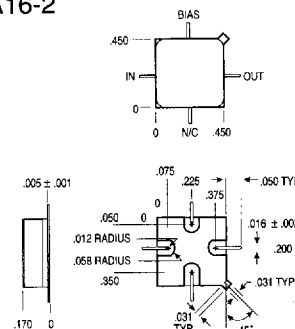
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	+125°C
Maximum DC Voltage.....	+8 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....	50 Milliwatts
Maximum Peak Power	0.5 Watt (3 µsec Max.)
"S" Series Burn-In Temperature (Case)	125°C

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings

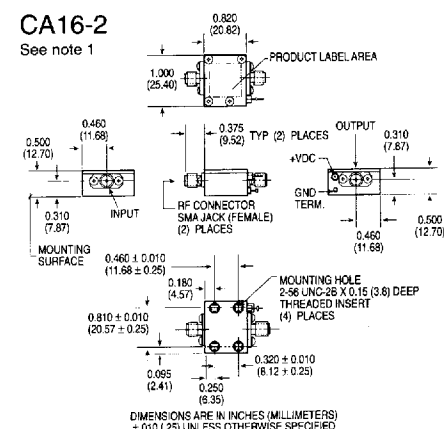


SMA16-2



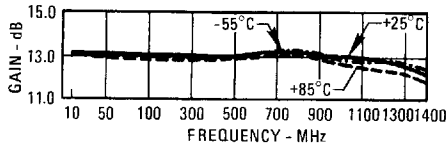
CA16-2

See note 1

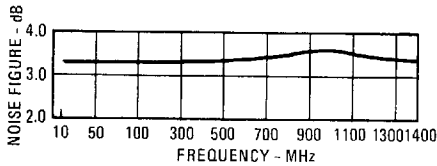


Typical Performance at 25°C

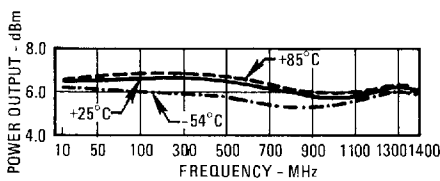
Gain



Noise Figure

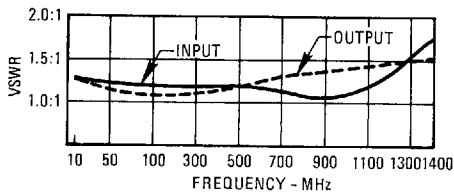


Power Output*

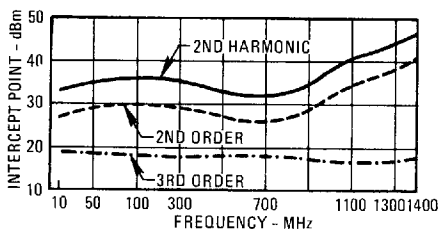


* at 1 dB Gain Compression

VSWR



Intercept Point



Typical Automatic Test Data

V_{CC} = 8.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.3	1.2	13.6
2.0	1.3	1.2	13.6
5.0	1.3	1.1	13.6
10.0	1.3	1.1	13.6
50.0	1.2	1.1	13.6
100.0	1.2	1.1	13.5
200.0	1.2	1.1	13.4
300.0	1.2	1.1	13.3
400.0	1.2	1.2	13.5
500.0	1.3	1.3	13.6
600.0	1.4	1.4	13.6
700.0	1.4	1.5	13.6
800.0	1.4	1.6	13.6
900.0	1.4	1.5	13.6
1000.0	1.3	1.4	13.6
1100.0	1.3	1.2	13.5
1200.0	1.7	1.1	13.2
1300.0	2.5	1.4	12.5

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.123	-146	4.781	-177	.118	4	.088	130
2.0	.124	-149	4.808	-177	.118	4	.082	130
5.0	.114	-164	4.798	179	.118	1	.062	138
10.0	.115	-175	4.781	173	.119	-2	.048	137
50.0	.103	174	4.773	165	.119	-7	.044	119
100.0	.095	169	4.716	156	.119	-11	.043	94
200.0	.085	172	4.677	143	.120	-18	.047	48
300.0	.082	-175	4.641	125	.120	-26	.069	-7
400.0	.103	-166	4.732	107	.120	-36	.104	-51
500.0	.139	-175	4.763	88	.119	-46	.142	-82
600.0	.153	169	4.779	68	.118	-56	.178	-107
700.0	.157	153	4.789	48	.116	-66	.206	-131
800.0	.157	135	4.795	28	.116	-76	.217	-155
900.0	.150	106	4.772	8	.116	-86	.204	179
1000.0	.119	62	4.782	-15	.117	-97	.167	152
1100.0	.125	-6	4.723	-38	.120	-109	.094	118
1200.0	.248	-61	4.592	-65	.124	-123	.050	-24
1300.0	.426	-102	4.240	-94	.125	-141	.183	-87

V_{CC} = 5.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.2	1.2	13.2
2.0	1.2	1.1	13.2
5.0	1.2	1.1	13.2
10.0	1.1	1.0	13.2
50.0	1.1	1.0	13.2
100.0	1.1	1.0	13.1
200.0	1.1	1.1	13.0
300.0	1.1	1.1	13.0
400.0	1.2	1.2	13.2
500.0	1.3	1.3	13.3
600.0	1.4	1.4	13.4
700.0	1.5	1.5	13.5
800.0	1.5	1.5	13.6
900.0	1.5	1.4	13.6
1000.0	1.4	1.3	13.7
1100.0	1.3	1.3	13.7
1200.0	1.6	1.5	13.5
1300.0	2.3	2.0	12.9

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.092	-132	4.569	-177	.123	4	.073	112
2.0	.089	-136	4.574	-177	.124	4	.066	113
5.0	.077	-152	4.594	179	.124	1	.043	112
10.0	.067	-169	4.590	173	.125	-2	.023	103
50.0	.057	174	4.576	166	.126	-6	.019	80
100.0	.057	-177	4.509	157	.125	-11	.021	48
200.0	.054	-167	4.489	144	.126	-17	.032	1
300.0	.065	-142	4.459	127	.126	-25	.062	-42
400.0	.100	-139	4.573	110	.127	-35	.101	-78
500.0	.148	-154	4.630	91	.128	-44	.137	-104
600.0	.174	-172	4.686	71	.127	-54	.166	-127
700.0	.192	175	4.743	52	.127	-64	.186	-150
800.0	.201	154	4.778	31	.129	-74	.193	-175
900.0	.190	127	4.809	11	.133	-84	.177	154
1000.0	.160	92	4.864	-11	.136	-96	.145	114
1100.0	.123	32	4.854	-35	.142	-109	.116	47
1200.0	.216	-46	4.755	-62	.147	-125	.192	-32
1300.0	.401	-96	4.397	-92	.147	-144	.336	-81

Thermal Data: V_{CC} = 5 Vdc

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.051 W
 Junction Temperature Rise Above Case T_{jc} ... 2°C