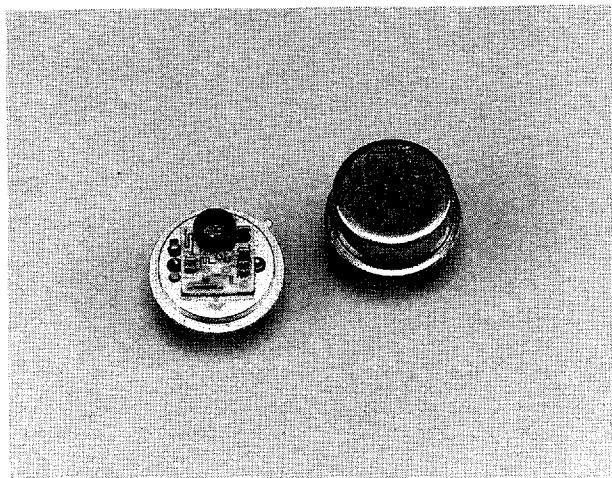


WJ-A19-1 / SMA19-1

10 to 1000 MHz TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH OUTPUT POWER: +22.5 dBm (TYP.)
- ◆ HIGH THIRD ORDER I.P. +35 dBm (TYP.)
- ◆ MEDIUM NOISE FIGURE: 6.0 dB (TYP.)



Specifications *

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	10-1100 MHz	10-1000 MHz	10-1000 MHz
Small Signal Gain (Min.)	11.5 dB	10.5 dB	10.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)			
30-600 MHz	6.0 dB	7.0 dB	7.5 dB
10-1000 MHz	6.5 dB	8.0 dB	8.5 dB
Power Output at			
1 dB Compression (Min.)	+22.5 dBm	+20.5 dBm	+20.0 dBm
VSWR (Max.) Input/Output	1.5:1	1.7:1	2.0:1
DC Current (Max.) at 15 Volts	90 mA	94 mA	99 mA

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

Notes:

1. WJ-CA19-1 is a standard WJ-A19-1 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

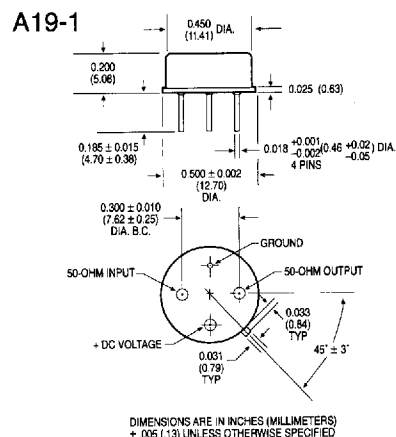
Second Order Harmonic Intercept Point.....	+58 dBm (Typ.)
Second Order Two-Tone Intercept Point	+51 dBm (Typ.)
Third Order Two-Tone Intercept Point	+35 dBm (Typ.)

Absolute Maximum Ratings

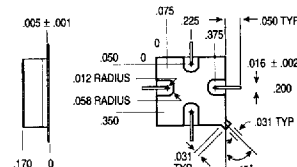
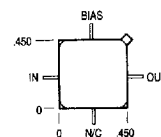
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage.....	+17 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term RF Input Power (1 minute max.).....	100 Milliwatts
Maximum Peak Power	0.5 Watt (3 µsec Max.)
"S" Series Burn-in Temperature (Case)	125°C

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings

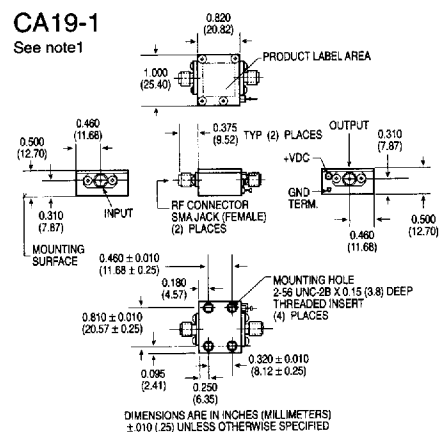


SMA19-1



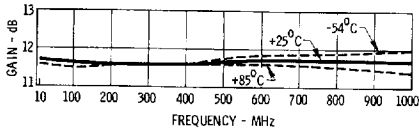
CA19-1

See note 1

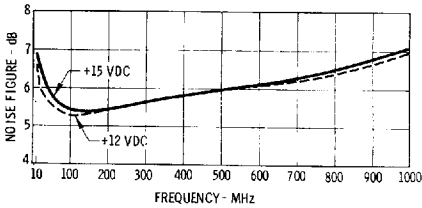


Typical Performance at 25°C

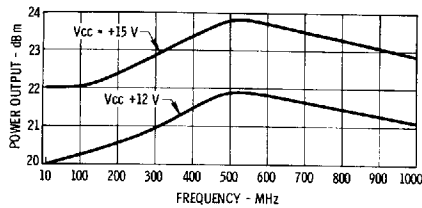
Gain



Noise Figure

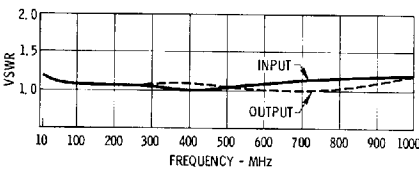


Power Output*

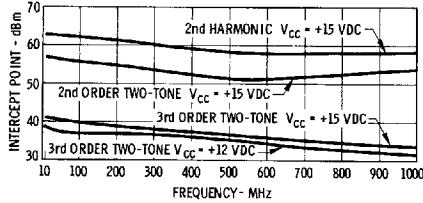


* at 1 dB Gain Compression

VSWR



Intercept Point



Typical Automatic Test Data

Vcc = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.1	1.2	11.9
2.0	1.1	1.1	11.9
5.0	1.0	1.1	12.0
10.0	1.0	1.1	12.0
50.0	1.0	1.1	12.0
100.0	1.0	1.1	11.9
200.0	1.1	1.0	11.9
300.0	1.1	1.0	11.8
400.0	1.2	1.1	12.0
500.0	1.2	1.1	12.1
600.0	1.3	1.1	12.3
700.0	1.2	1.2	12.3
800.0	1.3	1.2	12.3
900.0	1.3	1.2	12.3
1000.0	1.2	1.3	12.3
1100.0	1.3	1.3	12.2

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.034	-138	3.947	-167	.139	14	.077	-153
2.0	.033	-140	3.946	-169	.140	12	.069	-156
5.0	.024	-151	3.978	-176	.141	6	.046	-172
10.0	.023	-164	3.994	176	.143	0	.034	169
50.0	.015	172	3.978	168	.143	-4	.030	156
100.0	.014	-137	3.930	160	.143	-7	.026	145
200.0	.029	-126	3.917	149	.144	-12	.017	121
300.0	.044	-118	3.903	134	.146	-18	.003	-35
400.0	.078	-124	3.996	119	.150	-25	.030	-103
500.0	.100	-146	4.043	103	.153	-33	.052	-128
600.0	.114	-164	4.102	86	.155	-41	.067	-147
700.0	.110	-178	4.118	69	.159	-50	.081	-167
800.0	.123	159	4.134	51	.163	-58	.093	166
900.0	.116	124	4.137	33	.168	-68	.103	132
1000.0	.099	75	4.132	13	.172	-78	.119	93
1100.0	.116	9	4.070	-7	.177	-90	.146	47

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.034	-143	3.914	-167	.139	14	.074	-150
2.0	.032	-142	3.929	-169	.140	12	.066	-154
5.0	.023	-147	3.954	-176	.141	6	.042	-170
10.0	.026	-158	3.970	176	.142	1	.030	172
50.0	.013	-178	3.940	168	.143	-3	.024	163
100.0	.015	-137	3.912	160	.143	-7	.021	158
200.0	.031	-120	3.893	148	.144	-11	.013	157
300.0	.060	-124	3.872	134	.147	-17	.014	-119
400.0	.081	-130	3.959	118	.152	-24	.044	-125
500.0	.110	-153	4.014	102	.155	-32	.069	-145
600.0	.120	-171	4.063	84	.159	-40	.086	-163
700.0	.124	169	4.081	67	.163	-48	.102	176
800.0	.129	146	4.088	48	.169	-57	.120	150
900.0	.127	111	4.094	30	.176	-67	.139	118
1000.0	.124	59	4.059	10	.181	-78	.164	83
1100.0	.162	-0	3.974	-10	.185	-90	.199	42

Vcc = 12.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.1	1.2	11.9
2.0	1.1	1.1	11.9
5.0	1.0	1.1	11.9
10.0	1.1	1.1	12.0
50.0	1.0	1.0	11.9
100.0	1.0	1.0	11.8
200.0	1.1	1.0	11.8
300.0	1.1	1.0	11.8
400.0	1.2	1.1	12.0
500.0	1.2	1.1	12.1
600.0	1.3	1.2	12.2
700.0	1.3	1.2	12.2
800.0	1.3	1.3	12.2
900.0	1.3	1.3	12.2
1000.0	1.3	1.4	12.2
1100.0	1.4	1.5	12.0

Thermal Data: Vcc = 15 Vdc

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.886 W
 Junction Temperature Rise Above Case T_{jc} ... 40°C