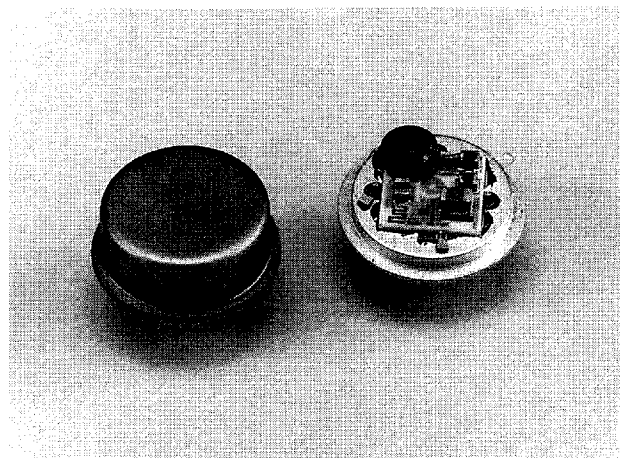


WJ-A7 / SMA7

5 to 500 MHz TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ MEDIUM OUTPUT POWER: +14 dBm (TYP.)
- ◆ INTERCEPT POINT: +26 dBm (TYP.)
- ◆ LOW VSWR: < 1.2:1 INPUT; < 1.5:1 OUTPUT
- ◆ FLAT BANDWIDTH: ± 2 dB (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +71°C
Frequency (Min.)	3-550 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)	14.9 dB	14 dB	13.5 dB
Gain Flatness (Max.)	± 0.2 dB	± 0.7 dB	± 1.0 dB
Noise Figure (Max.)	5.5 dB	6.5 dB	6.5 dB
Power Output at 1 dB Compression (Min.)	+14 dBm	+13 dBm	+12.5 dBm
VSWR (Max.) Input/Output	1.3 :1	1.8:1	2.0:1
DC Current (Max.) at 24 Volts	43 mA	45mA	47 mA

*Measured in a 50-ohm system at +24 Vdc Nominal.

Notes:

1. WJ-CA7 is a standard WJ-A7 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.....+47 dBm (Typ.)
 Second Order Two Tone Intercept Point.....+45 dBm (Typ.)
 Third Order Two Tone Intercept Point.....+26 dBm (Typ.)

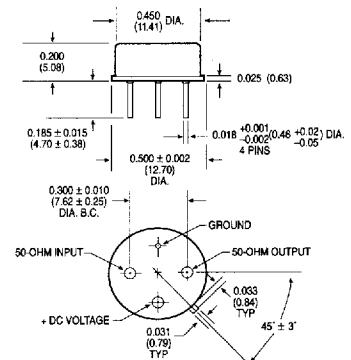
Absolute Maximum Ratings

Storage Temperature-62°C to + 125°C
 Maximum Case Temperature125°C
 Maximum DC Voltage.....+25 Volts
 Maximum Continuous RF Input Power+13 dBm
 Maximum Short Term RF Input Power.....50 Milliwatts (1 Minute Max.)
 Maximum Peak Power1 Watt (3 μ sec Max.)
 "S" Series Burn-in Temperature (Case)125°C

Weight approximately 2.0 grams (0.07 oz.)

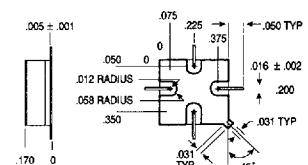
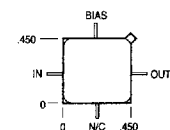
Outline Drawings

A7



DIMENSIONS ARE IN INCHES (MILLIMETERS)
 $\pm .005$ (.13) UNLESS OTHERWISE SPECIFIED

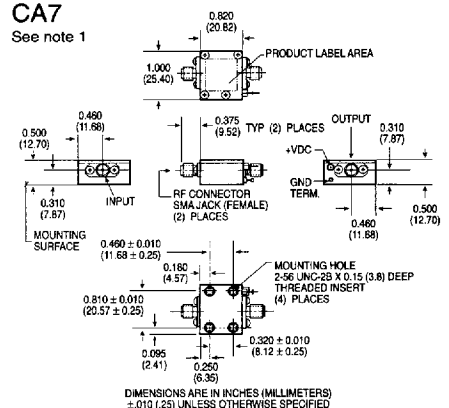
SMA7



DIMENSIONS ARE IN INCHES (MILLIMETERS)
 $\pm .010$ (.25) UNLESS OTHERWISE SPECIFIED

CA7

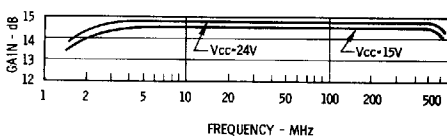
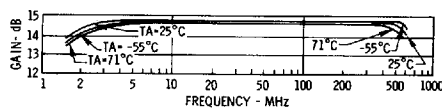
See note 1



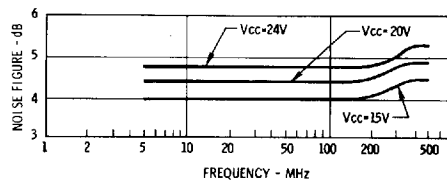
DIMENSIONS ARE IN INCHES (MILLIMETERS)
 $\pm .010$ (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

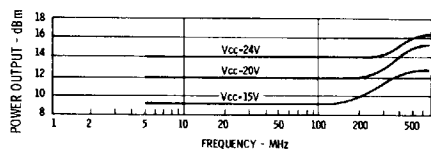
Gain



Noise Figure

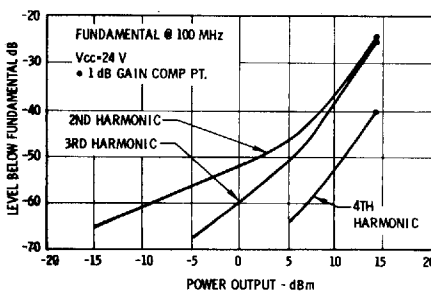


Power Output *

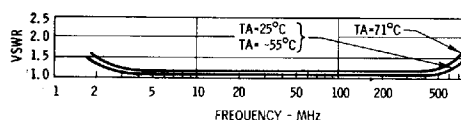


*at 1 dB Gain Compression

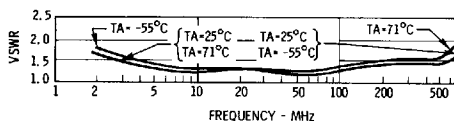
Harmonic Suppression vs. Power Out



Input VSWR



Output VSWR



Typical Automatic Test Data

Vcc = 24.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
2.0	1.8	1.1	15.5
5.0	1.3	1.1	15.4
10.0	1.3	1.1	15.3
50.0	1.2	1.1	15.5
100.0	1.2	1.2	15.2
200.0	1.2	1.2	15.2
300.0	1.1	1.3	15.3
400.0	1.1	1.4	15.7
500.0	1.0	1.6	15.9
600.0	1.2	1.8	16.0
700.0	1.3	2.2	15.3

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.0	0.278	-99	5.95	-158.3	0.11	0.0	0.048	146
5.0	0.148	-138	5.89	-172.5	0.11	-1.2	0.054	172
10.0	0.131	-152	5.79	-178.1	0.11	-0.9	0.039	-171
50.0	0.086	168	5.93	169.3	0.11	-3.1	0.061	72
100.0	0.101	158	5.76	157.8	0.11	-5.2	0.075	78
200.0	0.091	152	5.77	136.9	0.11	-10.4	0.096	37
300.0	0.067	129	5.85	115.8	0.12	-16.3	0.139	-4
400.0	0.041	89	6.07	92.9	0.11	-20.9	0.178	-45
500.0	0.024	19	6.24	66.7	0.11	-27.6	0.229	-92
600.0	0.078	-40	6.30	37.4	0.11	-32.9	0.293	-144
700.0	0.130	-64	5.80	4.4	0.11	-34.7	0.373	162

Thermal Data: Vcc = 24 Vdc

Thermal Resistance θ_{JC} 45°C/W
 Transistor Power Dissipation P_d 0.510 W
 Junction Temperature Rise Above Case T_{JC} ... 23°C