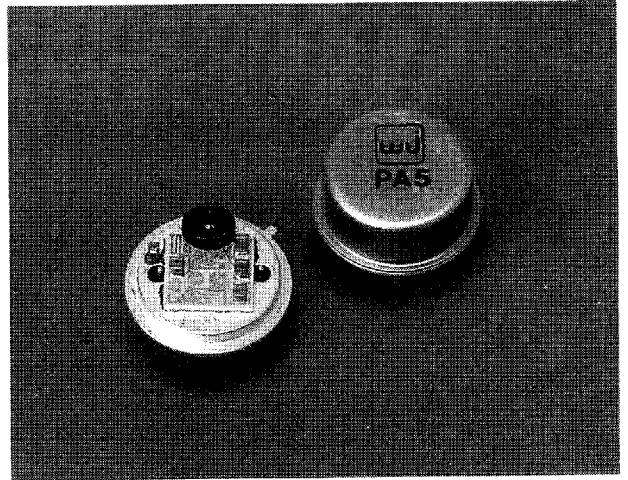


WJ-PA5 / SMPA5

10 to 500 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH THIRD ORDER I.P.: +35 dBm (TYP.)
- ◆ HIGH OUTPUT POWER: +25 dBm (TYP.)
- ◆ LOW VSWR: < 1.5:1 (TYP.)
- ◆ OPERATION FROM +12 Vdc TO +15 Vdc



Specifications *

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54°C to +85°C
Frequency (Min.)	10-500 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)	9.4 dB	8.5 dB	8.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)			
10-70 MHz	8.5 dB	9.5 dB	10.0 dB
70-500 MHz	7.8 dB	8.8 dB	9.3 dB
Power Output at 1 dB Compression (Min.)	+25.0 dBm	+23.5 dBm	+23.5 dBm
VSWR (Max.)			
Input/Output	1.5:1	1.7:1	2.0:1
DC Current at +15 Volts (Max.)	130 mA	133 mA	136 mA

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

Notes:

1. WJ-CPA5 is a standard WJ-PA5 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

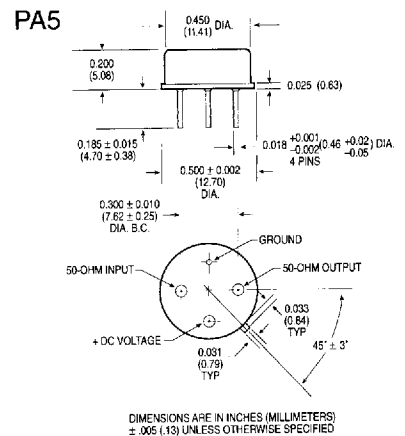
Second Order Harmonic Intercept Point.....+60 dBm (Typ.)
 Second Order Two Tone Intercept Point.....+54 dBm (Typ.)
 Third Order Two Tone Intercept Point.....+35 dBm (Typ.)

Absolute Maximum Ratings

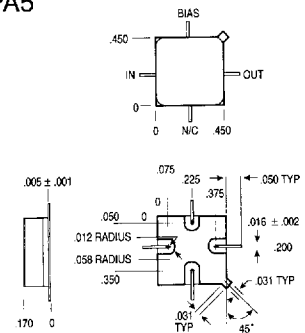
Storage Temperature-62°C to +125°C
 Maximum Case Temperature85°C
 Maximum DC Voltage.....+22 Volts
 Maximum Continuous RF Input Power.....+20 dBm
 Maximum Short Term RF Input Power (1 Minute Max.).....200 Milliwatts
 Maximum Peak Power0.5 Watt (3 μ sec Max.)
 "S" Series Burn-In Temperature (Case)85°C
 Proper heatsinking required to insure reliable performance.

Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings

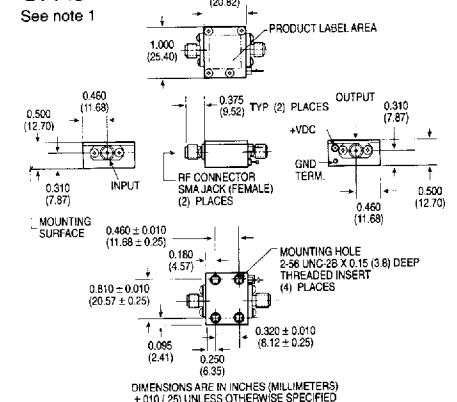


SMPA5



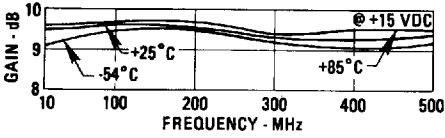
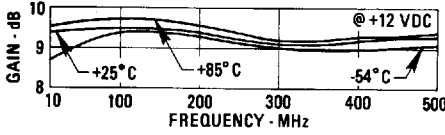
CPA5

See note 1

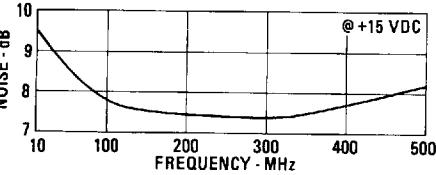
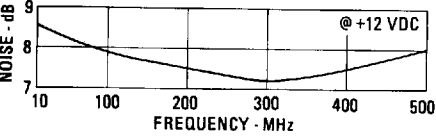


Typical Performance at 25°C

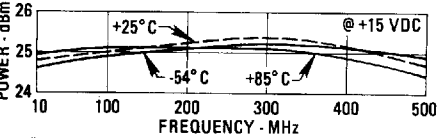
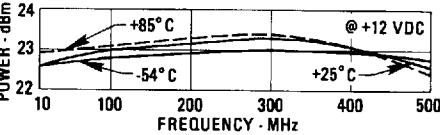
Gain



Noise Figure

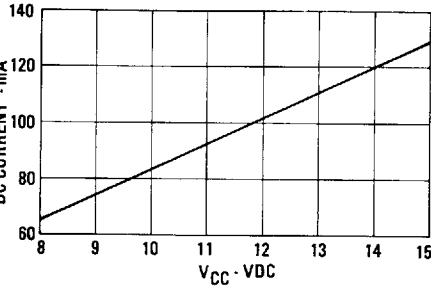


Power Output*

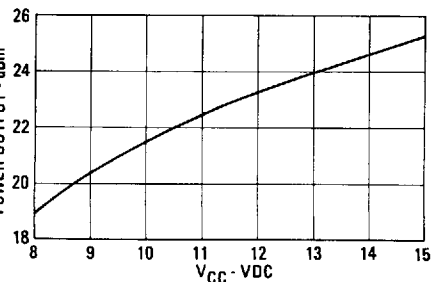


*at 1 dB Gain Compression

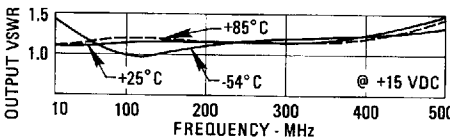
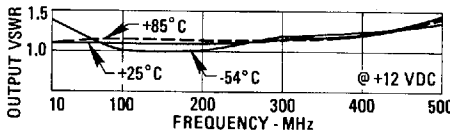
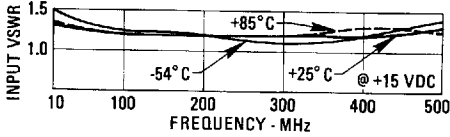
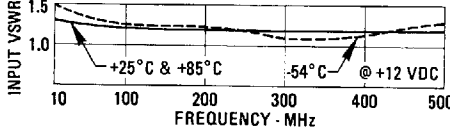
Current vs. Voltage



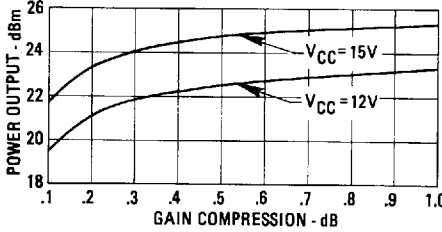
Power Output vs. Voltage



VSWR



Power Output vs. Gain Compression



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
2.0	1.9	1.3	8.3
5.0	1.4	1.1	9.9
10.0	1.2	1.1	10.4
50.0	1.2	1.0	10.6
100.0	1.1	1.0	10.5
200.0	1.1	1.1	10.4
300.0	1.0	1.1	10.2
400.0	1.1	1.1	10.2
500.0	1.2	1.1	10.2
600.0	1.4	1.2	10.7
700.0	1.4	1.4	11.3

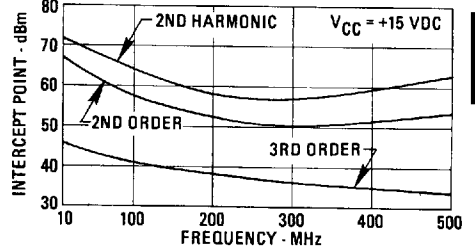
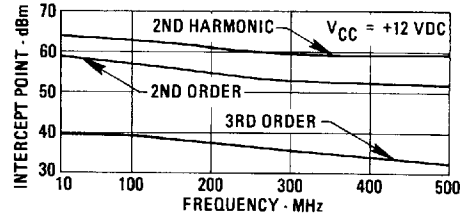
Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.0	.302	-62	2.612	-145	.184	18	.144	63
5.0	.166	-90	3.141	-163	.168	3	.045	-35
10.0	.107	-118	3.314	-172	.160	0	.025	-98
50.0	.070	180	3.393	172	.157	-4	.019	156
100.0	.062	153	3.361	160	.157	-9	.021	114
200.0	.042	127	3.300	140	.157	-18	.030	60
300.0	.021	58	3.226	121	.157	-28	.037	21
400.0	.052	-45	3.229	102	.155	-40	.043	-20
500.0	.106	-93	3.252	83	.147	-52	.063	-57
600.0	.161	-134	3.412	63	.132	-64	.101	-90
700.0	.175	170	3.664	38	.106	-70	.169	-125

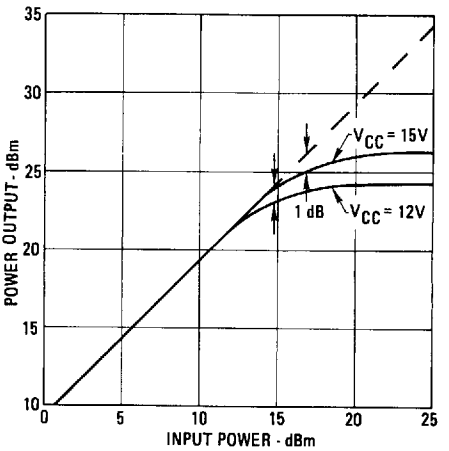
Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.940 W
 Junction Temperature Rise Above Case T_{jc} ... 42°C

Intercept Point



Power Output vs. Power Input



1