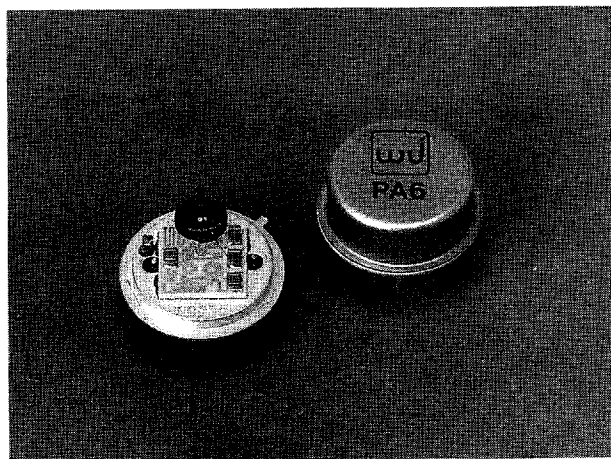


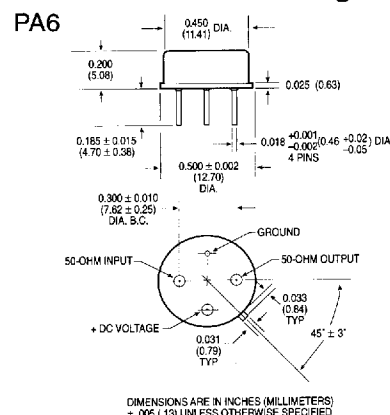
WJ-PA6 / SMPA6

10 to 500 MHz TO-8 CASCADABLE AMPLIFIER

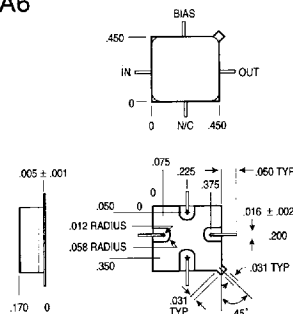
- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH THIRD ORDER I.P.: +35 dBm (TYP.)
- ◆ HIGH OUTPUT POWER: +26.5 dBm (TYP.)
- ◆ LOW VSWR: 1.5:1 (TYP.)
- ◆ OPERATION FROM +12 Vdc TO +20 Vdc



Outline Drawings

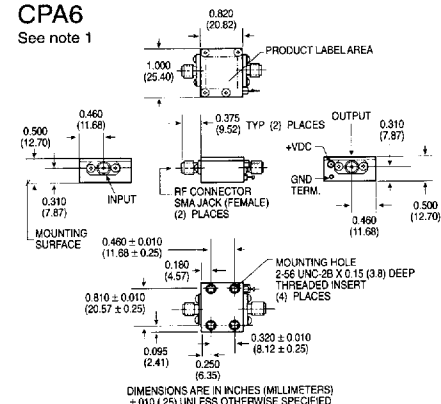


SMPA6



CPA6

See note 1



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.)	9.5 dB	8.5 dB	8.0 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±1.0 dB
Noise Figure (Max.)			
10-100 MHz	8.5 dB	9.5 dB	10.0 dB
100-500 MHz	7.8 dB	8.8 dB	9.3 dB
Power Output			
at 1 dB Compression (Min.)	+26.5 dBm	+25 dBm	+25 dBm
VSWR (Max.)			
Input/Output	1.5:1	1.7:1	2.0:1
DC Current at +20 Volts (Max.)	150 mA	154 mA	158 mA

* Measured in a 50-ohm system at +20 Vdc Nominal.

Notes:

1. WJ-CPA6 is a standard WJ-PA6 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

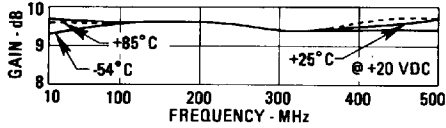
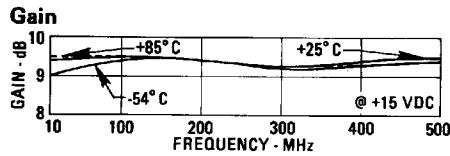
Second Order Harmonic Intercept Point.....+60 dBm (Typ.)
 Second Order Two Tone Intercept Point.....+55 dBm (Typ.)
 Third Order Two Tone Intercept Point.....+35 dBm (Typ.)

Absolute Maximum Ratings

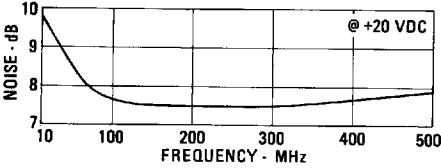
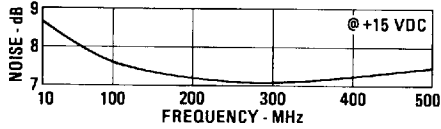
Storage Temperature-62°C to +125°C
 Maximum Case Temperature (At +20 Vdc)85°C
 Maximum DC Voltage.....+22 Volts
 Maximum Continuous RF Input Power.....+20 dBm
 Maximum Short Term RF Input Power (1 Minute Max.).....200 Milliwatts
 Maximum Peak Power0.5 Watt (3 µsec Max.)
 "S" Series Burn-in Temperature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

Weight approximately 2.0 grams (0.07 oz.)

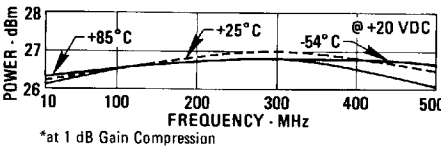
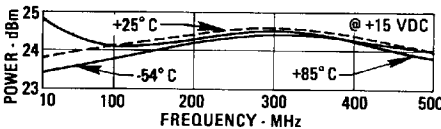
Typical Performance at 25°C



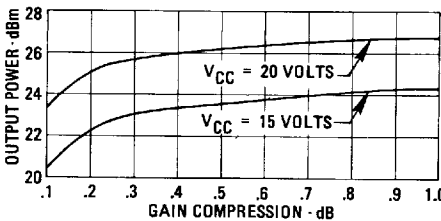
Noise Figure



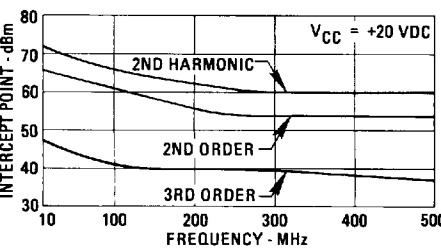
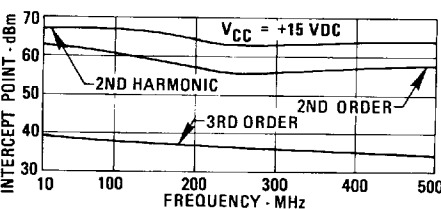
Power Output*



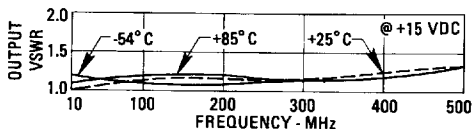
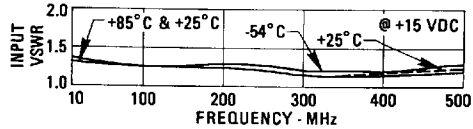
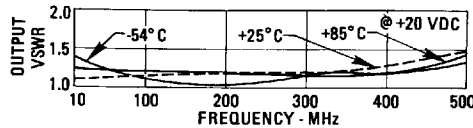
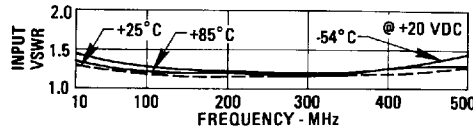
Output Power vs. Gain Compression



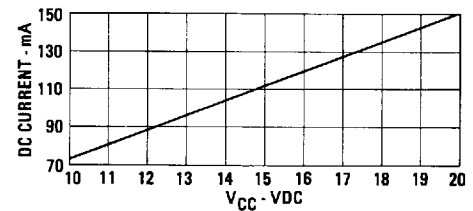
Intercept Point



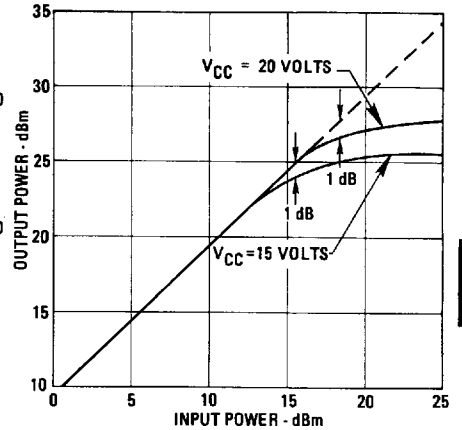
VSWR



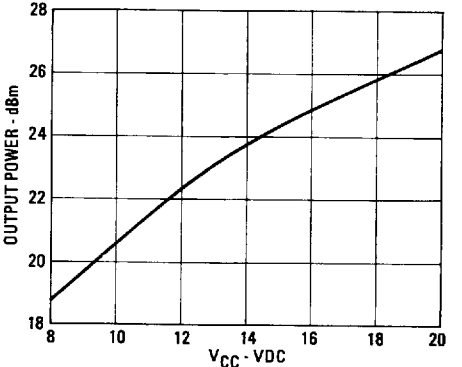
Current vs. Voltage



Output Power vs. Input Power



Output Power vs. Voltage



Typical Automatic Test Data

V_{CC} = 20.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
2.0	1.9	1.3	8.0
5.0	1.4	1.1	9.6
10.0	1.2	1.1	10.0
50.0	1.1	1.1	10.2
100.0	1.1	1.1	10.2
200.0	1.1	1.1	10.1
300.0	1.1	1.1	10.0
400.0	1.2	1.2	10.1
500.0	1.2	1.4	10.1
600.0	1.2	1.5	10.3
700.0	1.1	1.7	10.5

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
2.0	.302	-63	2.513	-143	.185	19	.140	72
5.0	.160	-91	3.010	-163	.168	3	.035	-41
10.0	.101	-118	3.162	-172	.161	0	.027	-117
50.0	.064	174	3.236	172	.158	-3	.028	-166
100.0	.063	138	3.218	161	.159	-6	.029	-162
200.0	.059	94	3.182	141	.162	-13	.042	-151
300.0	.059	46	3.147	122	.166	-20	.069	-158
400.0	.080	-2	3.184	102	.172	-27	.110	-172
500.0	.088	-39	3.190	83	.179	-36	.154	170
600.0	.091	-72	3.274	61	.189	-45	.205	149
700.0	.065	-108	3.361	38	.200	-56	.263	123

Thermal Data: V_{CC} = 20 Vdc

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.425 W
 Junction Temperature Rise Above Case T_{jc} ... 19°C