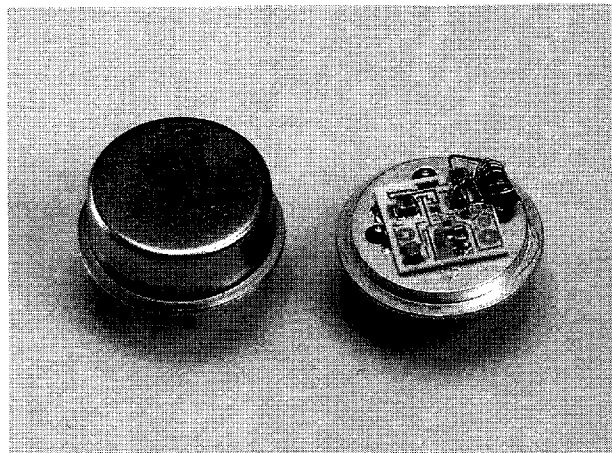


WJ-A81-3 / SMA81-3

20 to 500 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH REVERSE ISOLATION: >35 dBm (TYP.)
- ◆ EXCEPTIONAL OUTPUT VSWR: 1.1:1 (TYP.)
- ◆ LOW NOISE: 3.6 dB (TYP.)
- ◆ MEDIUM OUTPUT LEVEL: +8.0 dBm (TYP.)



Specifications *

Characteristics	Typical	0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	10-500 MHz	20-500 MHz	20-500 MHz
Small Signal Gain (Min.)	17.0 dB	16.0 dB	15.5 dB
Gain Flatness (Max.)	±0.2 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)			
20-300 MHz	3.6 dB	4.0 dB	4.5 dB
300-500 MHz	4.0 dB	4.5 dB	5.0 dB
Power Output			
at 1 dB Compression (Min.)	+8.0 dBm	+7.5 dBm	+7.0 dBm
VSWR (Max.)			
Input	1.5:1	1.8:1	2.0:1
Output	1.1:1	1.3:1	1.3:1
DC Current (Max.) at 15 Volts	29 mA	31 mA	33 mA

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

Notes:

1. WJ-CA81-3 is a standard WJ-A81-3 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Typical Intermodulation Performance at 25°C

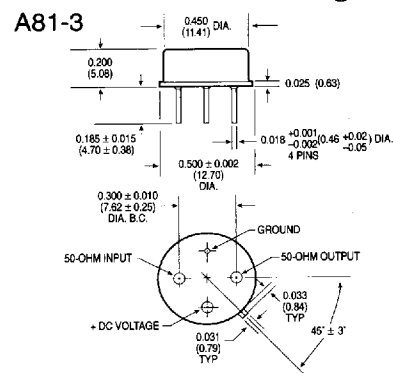
Second Order Harmonic Intercept Point.....+32 dBm (Typ.)
Second Order Two Tone Intercept Point.....+28 dBm (Typ.)
Third Order Two Tone Intercept Point.....+20 dBm (Typ.)

Absolute Maximum Ratings

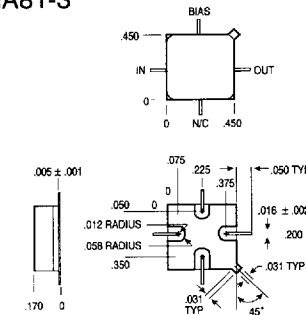
Storage Temperature-62°C to +125°C
Maximum Case Temperature125°C
Maximum DC Voltage.....+17 Volts
Maximum Continuous RF Power.....+10 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....50 Milliwatts
Maximum Peak Power0.5 Watt (3 usec Max.)
“S” Series Burn-in Temperature (Case).....125°C

Weight approximately 2.0 grams (0.07oz.)

Outline Drawings

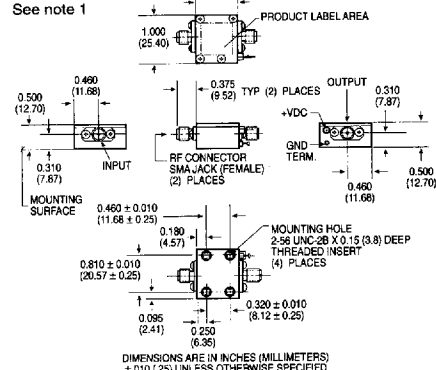


SMA81-3



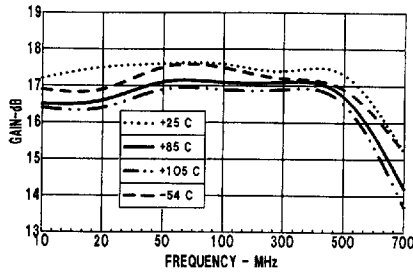
CA81-3

See note 1

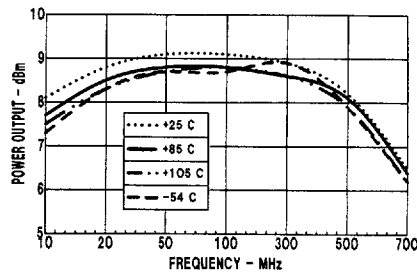


Typical Performance at 25°C

Gain

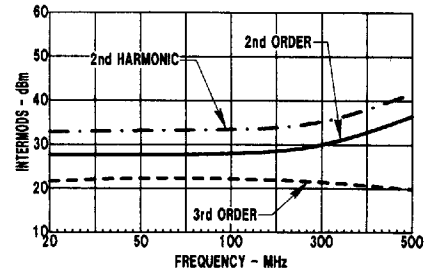


Power Output*

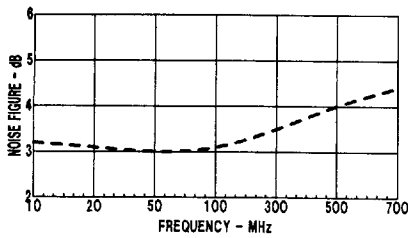


*at 1 dB Gain Compression

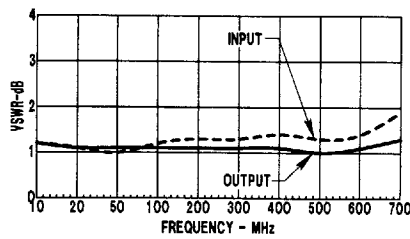
Intercept Point



Noise Figure



VSWR



Typical Automatic Test Data

$V_{CC} = 15.0 \text{ V}$

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	1.7	1.2	15.7
10.0	1.3	1.1	16.4
20.0	1.2	1.1	16.9
50.0	1.0	1.1	17.2
100.0	1.1	1.1	17.3
200.0	1.2	1.1	17.5
300.0	1.2	1.1	17.8
400.0	1.2	1.1	18.1
500.0	1.3	1.1	17.5
600.0	1.5	1.2	16.0
700.0	1.9	1.3	13.9

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	.256	-58	6.124	-148	.012	32	.093	127
10.0	.146	-66	6.635	-164	.014	17	.056	105
20.0	.078	-71	6.995	-173	.014	8	.041	80
50.0	.011	-59	7.285	173	.015	-1	.033	47
100.0	.050	49	7.333	159	.015	-10	.035	32
200.0	.095	22	7.514	134	.015	-21	.042	18
300.0	.107	-16	7.804	109	.013	-33	.041	-8
400.0	.099	-74	7.995	78	.011	-44	.028	-71
500.0	.118	-164	7.469	46	.009	-44	.044	-175
600.0	.216	132	6.277	14	.009	-43	.088	131
700.0	.317	94	4.933	-14	.009	-44	.134	98

Thermal Data: $V_{CC} = 15 \text{ Vdc}$

Thermal Resistance θ_{JC} 45°C/W
 Transistor Power Dissipation P_d 0.157 W
 Junction Temperature Rise Above Case T_{JC} 7°C

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