



A67-1 / SMA67-1

**10 to 600 MHz
TO-8 CASCADABLE AMPLIFIER**

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH EFFICIENCY: +17.0 dBm (TYP.)
OUTPUT POWER @ 36 mA (TYP.)
- ◆ LOW NOISE FIGURE: 3.6 dB (TYP.)
- ◆ WIDE POWER SUPPLY RANGE: +5 Vdc
to +15 Vdc

Specifications*

Characteristics	Typical.	Guaranteed	
		0° to +50°C	-54 to +85°C
Frequency (Min.)	5-700 MHz	10-600 MHz	10-600 MHz
Small Signal Gain (Min.)	15.0 dB	14.0 dB	13.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.6 dB	±0.8 dB
Noise Figure (Max.)	<3.7 dB	4.3 dB	4.5 dB
Power Output at 1 dB Compression (Min.)	+17.0 dBm	+16.5 dBm	+16.0 dBm
VSWR (Max.)			
Input/Output	1.7:1	2.0:1	2.0:1
DC Current (Max.) at 15 Volts	36 mA	39 mA	41 mA

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

Notes:

1. WJ-CA67-1 is a standard WJ-A67-1 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	+50 dBm (Typ.)
Second Order Two Tone Intercept Point	+43 dBm (Typ.)
Third Order Two Tone Intercept Point	+30 dBm (Typ.)

Absolute Maximum Ratings

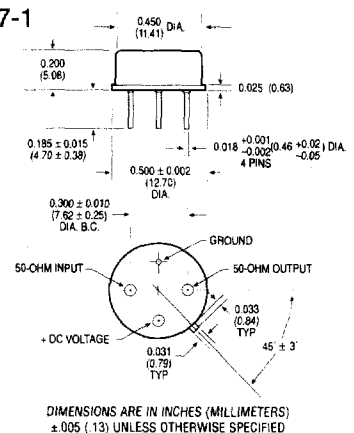
Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Temperature	17 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term RF Input Power	50 Milliwatts (1 Minute Max.)
Maximum Peak Power	0.5 Watt (3 µsec Max.)
"S" Series Burn-in Temperature (Case)	+125°C

Weight approximately 2.0 grams (0.07 oz.)



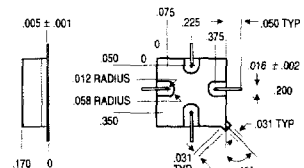
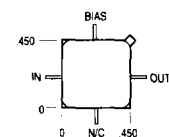
Outline Drawings

A67-1



DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.005 (.13) UNLESS OTHERWISE SPECIFIED

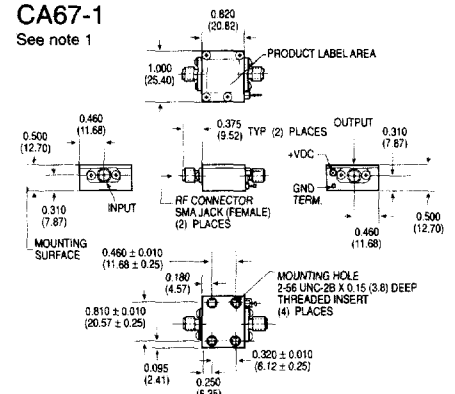
SMA67-1



DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

CA67-1

See note 1

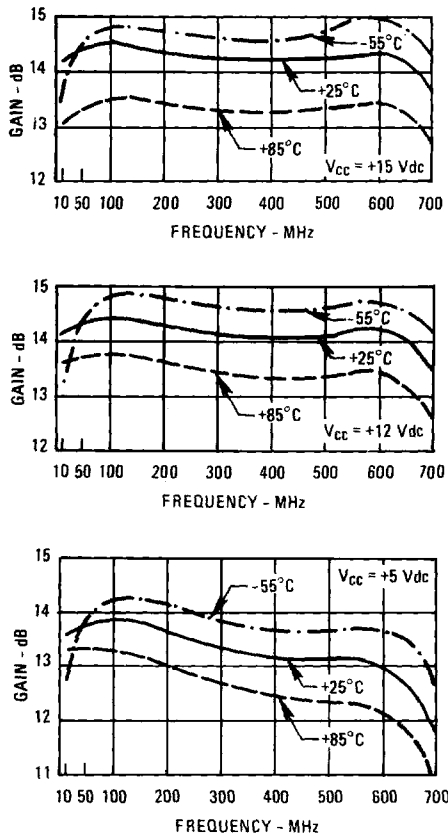


DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

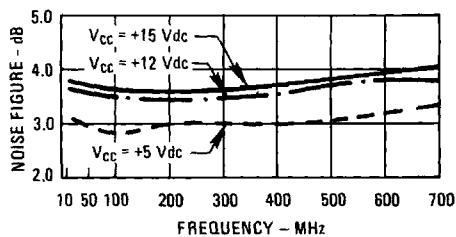
Typical Performance at 25°C

WJ-A67-1/SMA67-1

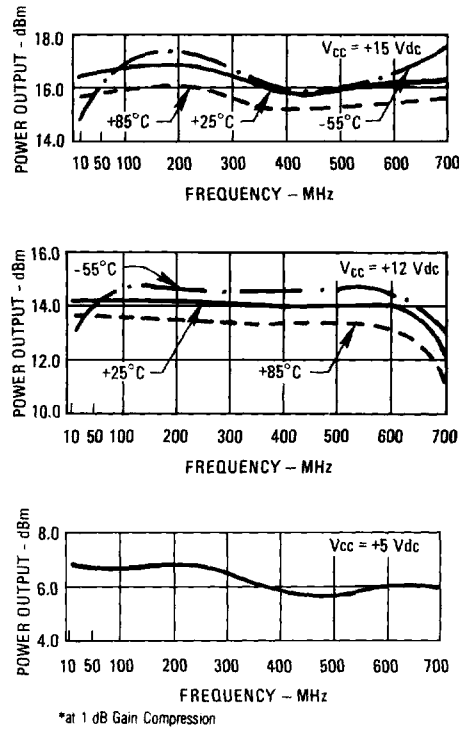
Gain



Noise Figure

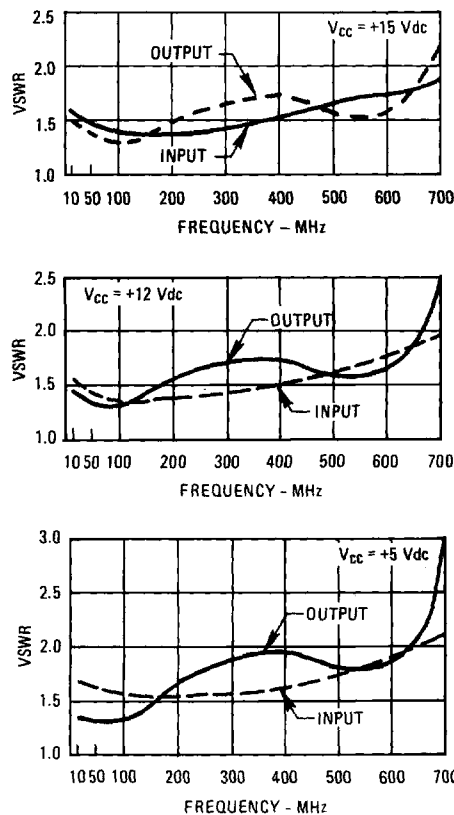


Power Output*

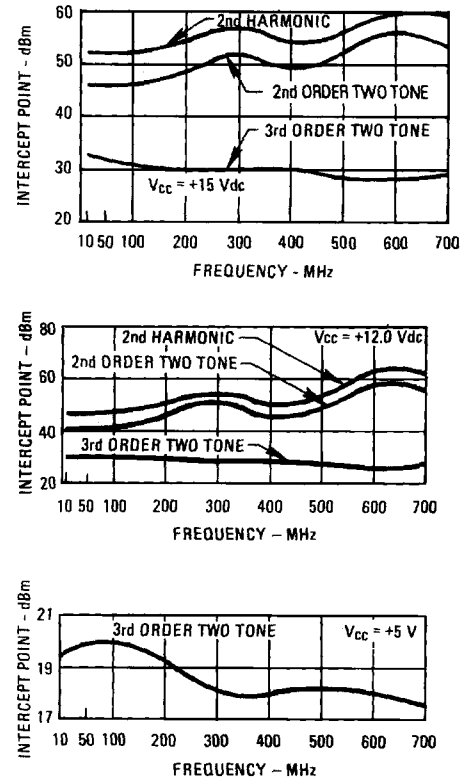


*at 1 dB Gain Compression

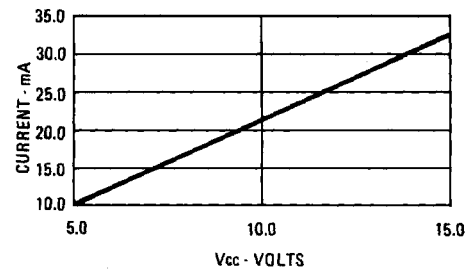
VSWR



Intercept Point



Current Drain



1

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	2.0	1.9	13.1
10.0	1.7	1.5	13.9
50.0	1.4	1.2	14.4
100.0	1.4	1.3	14.5
200.0	1.3	1.4	14.3
300.0	1.4	1.7	14.3
400.0	1.4	1.7	14.3
500.0	1.4	1.7	14.2
600.0	1.5	1.5	14.1
700.0	1.8	2.1	13.8

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.951	-6	2.62	-108	0.12	-102	0.738	-163
2.0	0.547	-33	3.77	-139	0.03	-25	0.516	163
5.0	0.333	-35	4.54	-159	0.07	8	0.322	139
10.0	0.248	-36	4.96	-168	0.09	9	0.204	134
50.0	0.165	-25	5.27	175	0.09	-14	0.085	174
100.0	0.151	-16	5.29	161	0.10	-15	0.114	-158
200.0	0.146	-29	5.19	137	0.09	-28	0.181	-160
300.0	0.161	-46	5.18	113	0.10	-35	0.249	-172
400.0	0.162	-58	5.17	89	0.10	-48	0.270	164
500.0	0.169	-88	5.14	60	0.11	-62	0.247	125
600.0	0.214	-134	5.07	34	0.12	-93	0.206	60
700.0	0.277	-180	4.91	0	0.10	-110	0.346	-3

V_{CC} = 12.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	1.9	1.9	13.2
10.0	1.6	1.5	13.9
50.0	1.4	1.2	14.5
100.0	1.4	1.3	14.5
200.0	1.4	1.5	14.4
300.0	1.4	1.7	14.3
400.0	1.4	1.8	14.3
500.0	1.4	1.7	14.3
600.0	1.5	1.7	14.2
700.0	1.8	2.3	13.5

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	0.863	-17	3.03	-114	0.11	-61	0.694	-167
2.0	0.510	-35	3.88	-144	0.04	-8	0.475	161
5.0	0.319	-35	4.59	-161	0.07	5	0.300	141
10.0	0.242	31	4.96	-169	0.08	4	0.187	131
50.0	0.166	-24	5.33	174	0.10	-9	0.079	175
100.0	0.157	-20	5.29	160	0.09	-19	0.112	-183
200.0	0.153	-25	5.25	136	0.10	-26	0.187	-158
300.0	0.151	-46	5.18	112	0.10	-35	0.247	-176
400.0	0.160	-63	5.17	87	0.10	-49	0.276	160
500.0	0.172	-93	5.20	59	0.10	-75	0.266	127
600.0	0.215	-140	5.13	32	0.12	-87	0.259	60
700.0	0.289	176	4.74	-2	0.12	-100	0.399	-5

Thermal Data: V_{CC} = 15 VdcThermal Resistance θ_{jc} 184°C/WTransistor Power Dissipation P_d0.280 WJunction Temperature Rise Above Case T_{jc}51°C