



A64 / SMA64

10 to 1200 MHz TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ LOW NOISE: 3.0 dB (TYP.)
- ◆ HIGH GAIN - TWO STAGES: 26 dB (TYP.)
- ◆ ULTRA LOW PHASE DEVIATION
FROM LINEARITY: $< \pm 2^\circ$, 100-1000 MHz
- ◆ LOW VSWR: 1.2:1 (TYP.)

Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	2-1250 MHz	10-1200 MHz	10-1200 MHz
Small Signal Gain (Min.)	26.0 dB	24.0 dB	23.0 dB
Gain Flatness (Max.)	$< \pm 0.5$ dB	± 0.8 dB	± 1.0 dB
Noise Figure (Max.)			
10-1000 MHz	3.0 dB	3.8 dB	4.3 dB
10-1200 MHz	3.4 dB	4.3 dB	4.8 dB
Power Output			
at 1 dB Compression (Min.)	+8.0 dBm	+7.0 dBm	+6.5 dBm
VSWR (Max.) Input/Output			
10-1000	1.2:1	1.7:1	1.8:1
10-1200	1.5:1	1.9:1	2.0:1
DC Current (Max.) at 15 Volts	35 mA	38 mA	40 mA

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

Notes:

1. WJ-CA64 is a standard WJ-A64 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

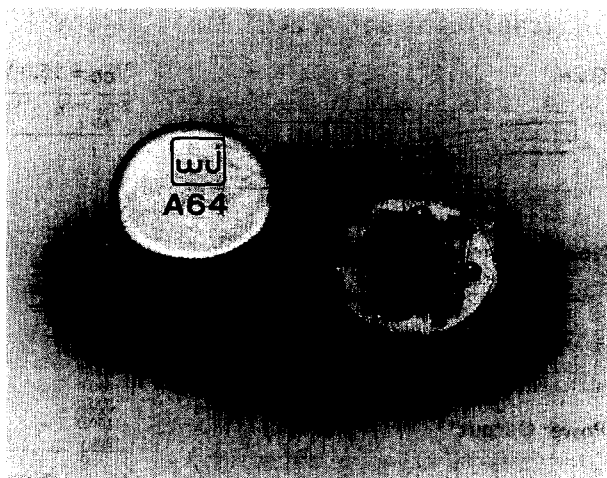
Typical Intermodulation Performance at 25°C

Second Order Harmonic Intercept Point	+47 dBm (Typ.)
Second Order Two Tone Intercept Point	+41 dBm (Typ.)
Third Order Two Tone Intercept Point	+20 dBm (Typ.)

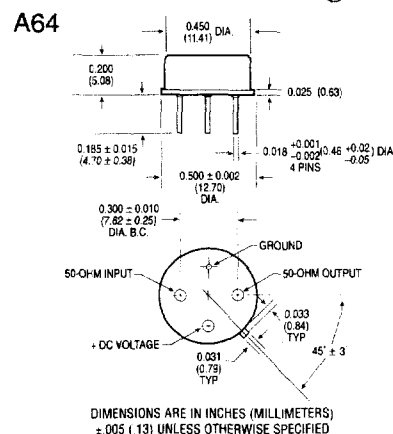
Absolute Maximum Ratings

Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage	+20 Volts
Maximum Continuous RF Input Power	+6 dBm
Maximum Short Term RF Input Power (1 Minute Max.)	50 Milliwatts
Maximum Peak Power	0.5 Watt (3 μ sec Max.)
"S" Series Burn-In Temperature (Case)	125°C

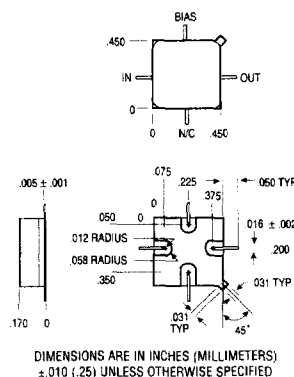
Weight approximately 2.0 grams (0.07 oz.)



Outline Drawings

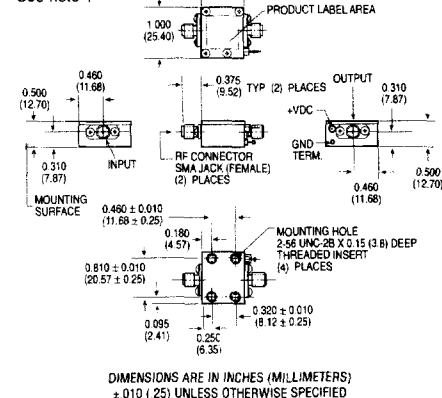


SMA64



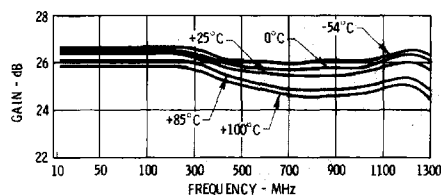
CA64

See note 1

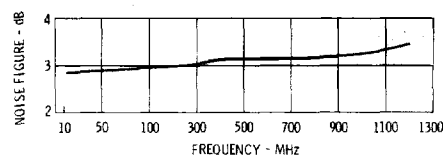


Typical Performance at 25°C

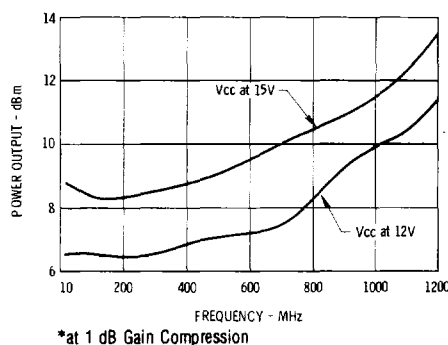
Gain



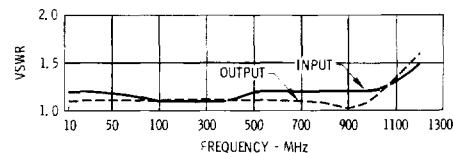
Noise Figure



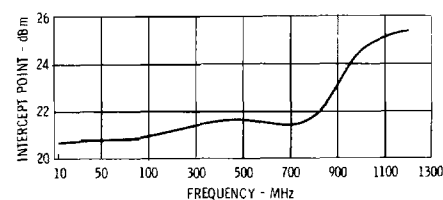
Power Output*



VSWR



3rd Order Two Tone Intercept Point



Typical Automatic Test Data

Vcc = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.7	1.4	25.5
2.0	1.4	1.2	25.5
5.0	1.3	1.1	25.6
10.0	1.3	1.1	25.6
50.0	1.3	1.1	25.7
100.0	1.3	1.1	25.7
200.0	1.3	1.0	25.7
300.0	1.3	1.0	25.7
400.0	1.3	1.1	25.7
500.0	1.3	1.1	25.6
600.0	1.3	1.1	25.7
700.0	1.4	1.1	25.7
800.0	1.3	1.1	25.8
900.0	1.2	1.1	25.9
1000.0	1.2	1.2	25.9
1100.0	1.3	1.4	25.8
1200.0	1.6	1.6	25.5
1300.0	2.2	2.0	24.9

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.256	-98	18.769	25	.018	19	.157	-55
2.0	.176	-129	18.873	12	.016	5	.093	-58
5.0	.137	-162	19.020	4	.015	4	.047	-40
10.0	.123	-175	19.112	0	.015	3	.040	-24
50.0	.122	164	19.195	-12	.016	0	.036	-25
100.0	.122	150	19.201	-25	.016	-3	.033	-43
200.0	.117	121	19.272	-52	.016	-7	.024	-88
300.0	.124	91	19.198	-78	.017	-11	.022	-152
400.0	.135	57	19.283	-104	.017	-16	.030	154
500.0	.136	27	19.125	-130	.017	-21	.040	120
600.0	.140	-5	19.176	-157	.017	-25	.045	89
700.0	.150	-40	19.242	176	.018	-33	.048	71
800.0	.132	-76	19.538	148	.018	-37	.052	60
900.0	.106	-112	19.705	120	.019	-44	.068	55
1000.0	.081	-176	19.760	89	.019	-52	.102	49
1100.0	.113	98	19.407	57	.021	-63	.156	32
1200.0	.225	42	18.931	23	.021	-73	.233	7
1300.0	.383	0	17.643	-13	.022	-87	.324	-20

Vcc = 12.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.6	1.4	24.9
2.0	1.4	1.2	25.0
5.0	1.3	1.1	25.1
10.0	1.2	1.1	25.1
50.0	1.2	1.1	25.1
100.0	1.2	1.1	25.1
200.0	1.2	1.0	25.2
300.0	1.2	1.0	25.1
400.0	1.2	1.1	25.2
500.0	1.3	1.1	25.2
600.0	1.3	1.1	25.2
700.0	1.3	1.1	25.3
800.0	1.3	1.1	25.5
900.0	1.2	1.2	25.6
1000.0	1.2	1.3	25.6
1100.0	1.4	1.5	25.4
1200.0	1.8	1.8	25.0
1300.0	2.5	2.1	24.2

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.237	-97	17.551	25	.019	19	.151	-58
2.0	.156	-125	17.742	12	.017	7	.088	-60
5.0	.113	-159	17.899	4	.016	3	.044	-42
10.0	.088	-174	17.965	0	.016	2	.037	-26
50.0	.095	166	18.062	-12	.016	0	.033	-26
100.0	.096	148	18.023	-25	.017	-3	.030	-42
200.0	.095	121	18.100	-52	.017	-7	.022	-82
300.0	.104	87	18.078	-78	.017	-11	.019	-147
400.0	.111	52	18.195	-104	.017	-18	.026	161
500.0	.117	20	18.146	-130	.018	-21	.033	129
600.0	.123	-16	18.236	-157	.018	-25	.037	103
700.0	.130	-49	18.429	176	.018	-32	.042	91
800.0	.120	-86	18.755	148	.019	-37	.053	84
900.0	.102	-136	18.962	118	.020	-43	.080	72
1000.0	.102	156	18.989	87	.021	-54	.128	60
1100.0	.159	86	18.563	54	.022	-65	.192	37
1200.0	.276	37	17.805	20	.023	-76	.276	9
1300.0	.435	-5	16.236	-17	.023	-89	.364	-22

Thermal Data: Vcc = 15 Vdc

Thermal Resistance θ_{JC} 141°C/W
 Transistor Power Dissipation P_d 0.187 W
 Junction Temperature Rise Above Case T_{JC} 26°C