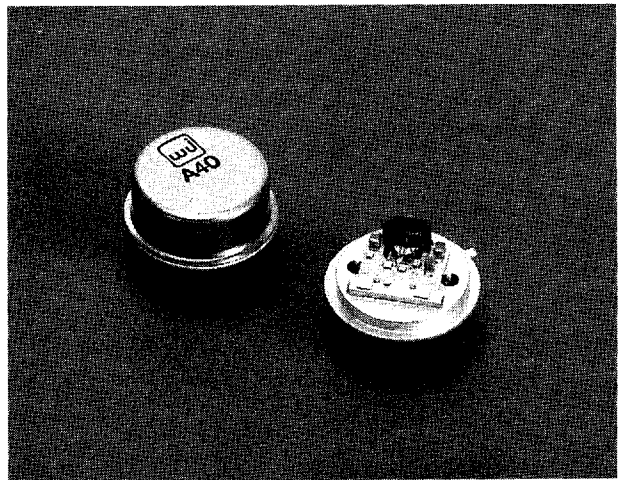


WJ-A40 / SMA40

500 TO 4000 MHz TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ ULTRA-WIDE BANDWIDTH: 500-4000 MHz
- ◆ HIGH GAIN -TWO STAGES: 14.5 dB (TYP.)
- ◆ HIGH OUTPUT LEVEL: +15.0 dBm (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	300-4200 MHz	500-4000 MHz	500-4000 MHz
Small Signal Gain (Min.)	14.5 dB	13.0 dB	12.0 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	4.5 dB	6.0 dB	6.5 dB
Power Output			
at 1 dB Compression (Min.)	+15.0 dBm	+13.5 dBm	+13.0 dBm
VSWR (Max.) Input/Output	<1.7:1	2.0:1	2.1:1
DC Current (Max.) at +12 Volts	69 mA	77 mA	82 mA

* Measured in a 50-ohm system at +12 Vdc Nominal.

Notes:

1. WJ-CA40 is a standard WJ-A40 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.....	+40.0 dBm (Typ.)
Second Order Two Tone Intercept Point.....	+35.0 dBm (Typ.)
Third Order Two Tone Intercept Point.....	+25.0 dBm (Typ.)

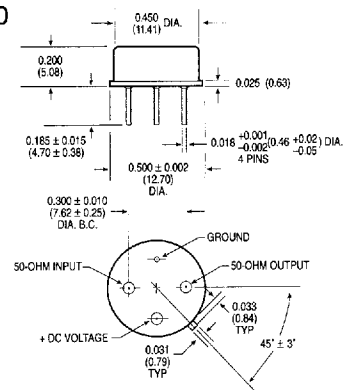
Absolute Maximum Ratings

Storage Temperature	-62°C to +125°C
Maximum Case Temperature	125°C
Maximum DC Voltage.....	+14 Volts
Maximum Continuous RF Input Power	+13 dBm
Maximum Short Term RF Input Power (1 Minute Max.).....	100 Milliwatts
Maximum Peak Power	0.25 Watt (3 μsec Max.)
"S" Series Burn-In Temperature (Case)	125°C

Weight approximately 2.0 grams (0.07 oz.)

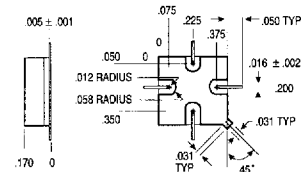
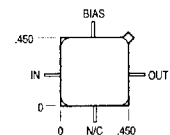
Outline Drawings

A40



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

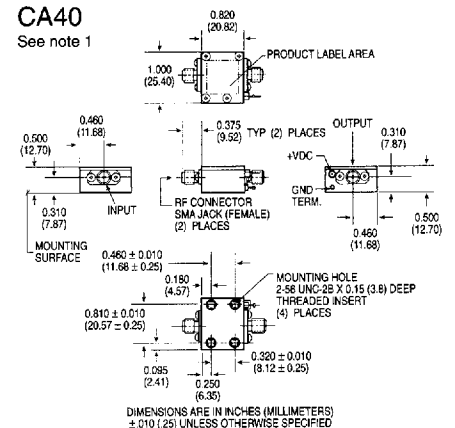
SMA40



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

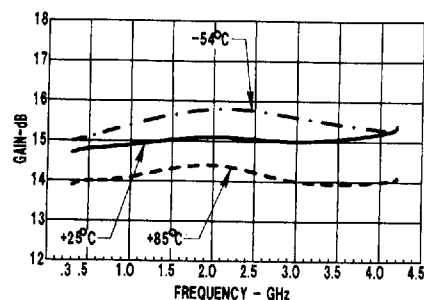
CA40

See note 1

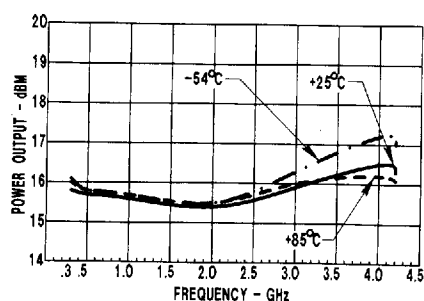


Typical Performance at 25°C

Gain

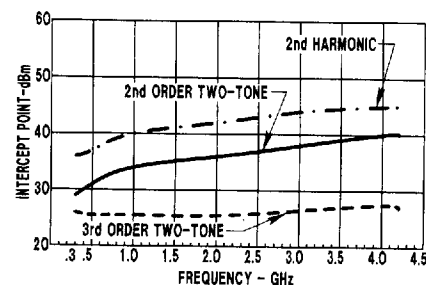


Power Output*

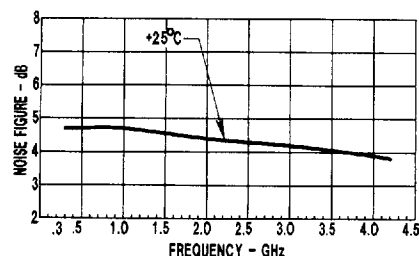


*at 1 dB Gain Compression

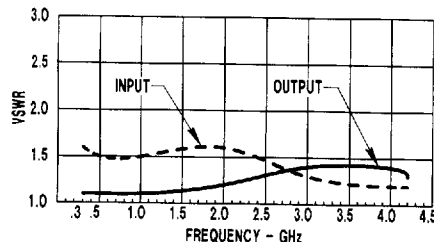
Intercept Point



Noise Figure



VSWR



Typical Automatic Test Data

V_{CC} = 12.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
300.0	1.8	1.1	15.1
400.0	1.5	1.1	15.1
500.0	1.4	1.1	15.1
600.0	1.3	1.1	15.1
700.0	1.2	1.1	15.1
800.0	1.2	1.1	15.1
900.0	1.2	1.1	15.1
1000.0	1.2	1.1	15.1
1100.0	1.3	1.1	15.2
1200.0	1.3	1.1	15.2
1300.0	1.3	1.1	15.2
1400.0	1.4	1.1	15.3
1500.0	1.4	1.1	15.3
1600.0	1.4	1.1	15.3
1700.0	1.4	1.1	15.3
1800.0	1.4	1.1	15.3
1900.0	1.5	1.1	15.4
2000.0	1.4	1.2	15.4
2100.0	1.4	1.2	15.4
2200.0	1.4	1.2	15.5
2300.0	1.4	1.3	15.5
2400.0	1.4	1.3	15.5
2500.0	1.4	1.4	15.6
2600.0	1.4	1.4	15.5
2700.0	1.4	1.4	15.5
2800.0	1.3	1.5	15.4
2900.0	1.4	1.5	15.4
3000.0	1.3	1.5	15.3
3100.0	1.3	1.4	15.3
3200.0	1.3	1.4	15.3
3300.0	1.4	1.4	15.3
3400.0	1.4	1.3	15.4
3500.0	1.4	1.3	15.6
3600.0	1.4	1.2	15.7
3700.0	1.5	1.2	15.8
3800.0	1.5	1.2	15.9
3900.0	1.5	1.3	15.9
4000.0	1.5	1.3	16.0
4100.0	1.4	1.4	15.9
4200.0	1.4	1.4	16.0

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
300.0	.281	-114	5.666	-75	.014	-48	.063	34
400.0	.198	-130	5.697	-105	.016	-71	.054	6
500.0	.151	-143	5.681	-133	.017	-92	.048	-14
600.0	.118	-146	5.675	-162	.016	-119	.040	-30
700.0	.100	-151	5.675	170	.015	-141	.034	-40
800.0	.094	-155	5.682	142	.017	-162	.032	-44
900.0	.103	-159	5.691	114	.016	173	.029	-50
1000.0	.107	-168	5.694	86	.017	150	.032	-54
1100.0	.124	179	5.727	58	.016	125	.033	-63
1200.0	.136	163	5.759	30	.015	108	.038	-76
1300.0	.143	146	5.786	2	.015	90	.038	-96
1400.0	.159	131	5.796	-26	.017	61	.039	-124
1500.0	.171	109	5.815	-54	.018	42	.036	-155
1600.0	.172	89	5.814	-82	.017	14	.033	-171
1700.0	.182	70	5.819	-109	.017	-5	.037	132
1800.0	.183	49	5.826	-137	.017	-25	.043	94
1900.0	.186	28	5.864	-165	.017	-51	.056	63
2000.0	.172	6	5.873	167	.017	-74	.073	40
2100.0	.174	-17	5.886	139	.017	-92	.088	17
2200.0	.166	-40	5.943	110	.017	-119	.105	-5
2300.0	.179	-61	5.957	82	.018	-142	.122	-27
2400.0	.175	-83	5.973	54	.018	-166	.143	-47
2500.0	.172	-109	5.995	26	.016	169	.161	-68
2600.0	.165	-129	5.967	-3	.018	148	.173	-88
2700.0	.162	-151	5.941	-31	.019	133	.181	-107
2800.0	.149	-174	5.899	-59	.019	106	.185	-127
2900.0	.150	157	5.868	-88	.018	86	.189	-147
3000.0	.142	134	5.838	-116	.018	56	.186	-165
3100.0	.141	108	5.820	-143	.020	33	.181	174
3200.0	.138	79	5.835	-172	.020	6	.175	150
3300.0	.152	53	5.851	161	.019	-24	.161	126
3400.0	.158	22	5.914	132	.018	-41	.143	98
3500.0	.163	-3	6.018	104	.018	-70	.123	67
3600.0	.174	-33	6.062	75	.020	-93	.108	28
3700.0	.186	-60	6.132	46	.018	-118	.098	-15
3800.0	.193	-86	6.213	18	.016	-145	.107	-59
3900.0	.187	-113	6.212	-12	.015	-168	.121	-100
4000.0	.187	-138	6.319	-41	.015	163	.142	-134
4100.0	.176	-163	6.271	-71	.016	150	.159	-165
4200.0	.173	175	6.285	-101	.014	129	.166	166

Thermal Data: V_{CC} = 12 Vdc

Thermal Resistance θ_{JC} 97°C/W
 Transistor Power Dissipation P_d 0.240 W
 Junction Temperature Rise Above Case T_{JC} ... 23.3°C