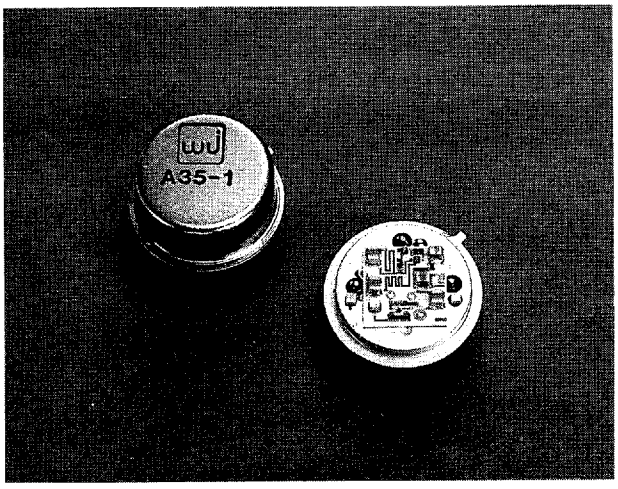
WJ-A35-1 / SMA35-1

2 to 2400 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ ULTRA WIDE BANDWIDTH: 1 - 2600 MHz (TYP.)
- ◆ MEDIUM OUTPUT LEVEL: +9.5 dBm (TYP.)



Specifications *

Characteristics	Typical	Guaranteed 0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	1 - 2600 MHz	2 - 2400 MHz	2 - 2400 MHz
Small Signal Gain (Min.)	9.0 dB	8.5 dB	8.0 dB
Gain Flatness (Max.)	±.4 dB	±.6 dB	±.8 dB
Noise Figure (Max.)			
2-1500	4.2 dB	5.0 dB	5.5 dB
2 - 2400	< 5.0 dB	5.8 dB	6.3 dB
Power Output at 1 dB Compression (Min.)	+9.5 dBm	+8.5 dBm	+8.0 dBm
VSWR (Max.)			
Input/Output	< 1.4:1	1.9:1	2.0:1
DC Current (Max.) at +15 Volts	28 mA	31mA	33 mA

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

Notes:

1. WJ-CA35-1 is a standard WJ-A35-1 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.....+40 dBm (Typ.)
Second Order Two Tone Intercept Point.....+34 dBm (Typ.)
Third Order Two Tone Intercept Point..... +23 dBm (Typ.)

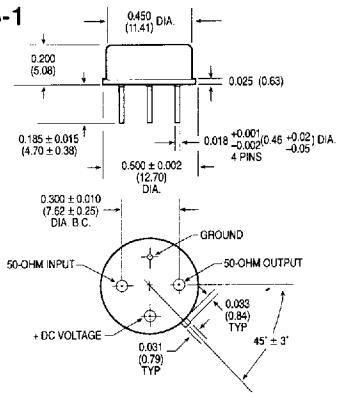
Absolute Maximum Ratings

Storage Temperature .....-62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage.....+21 Volts
Maximum Continuous RF Input Power .....+13 dBm
Maximum Short Term RF Input Power (I Minute Max.).....50 Milliwatts
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.)

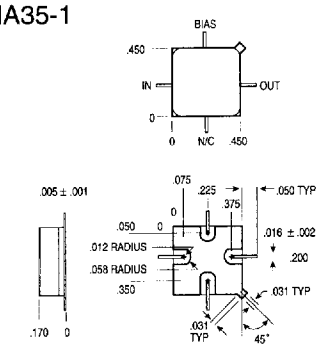
Outline Drawings

A35-1



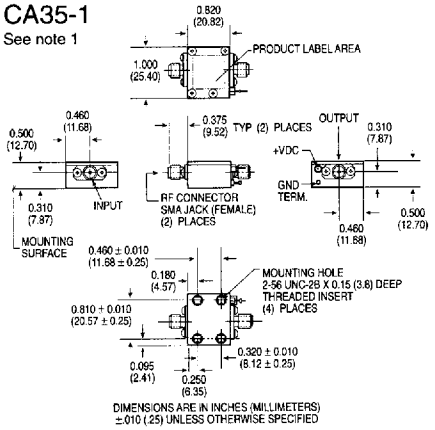
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.005 (.13) UNLESS OTHERWISE SPECIFIED

SMA35-1



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

CA35-1
See note 1



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

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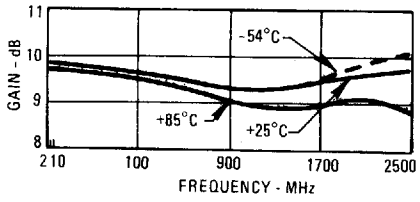
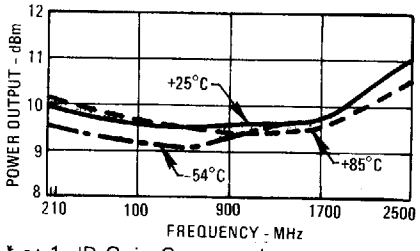
Typical Performance at 25°C

Gain

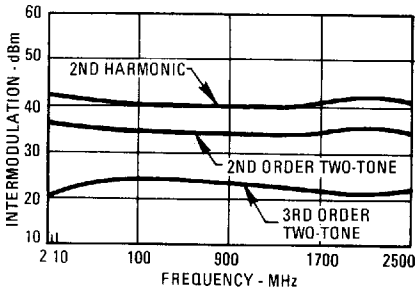


Power Output*

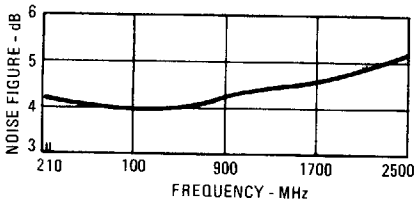


* at 1 dB Gain Compression

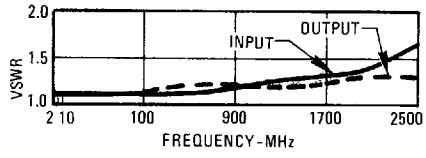
Intermodulation



Noise Figure



VSWR



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Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.4	1.5	8.9
2.0	1.2	1.3	9.2
5.0	1.1	1.2	9.5
10.0	1.1	1.2	9.4
50.0	1.1	1.2	9.3
100.0	1.1	1.2	9.2
200.0	1.1	1.2	9.1
300.0	1.0	1.2	9.0
400.0	1.0	1.1	9.1
500.0	1.0	1.1	9.2
600.0	1.0	1.1	9.2
700.0	1.1	1.1	9.3
800.0	1.1	1.1	9.3
900.0	1.1	1.1	9.3
1000.0	1.2	1.2	9.3
1100.0	1.2	1.2	9.3
1200.0	1.2	1.3	9.2
1300.0	1.3	1.3	9.2
1400.0	1.3	1.3	9.3
1500.0	1.3	1.3	9.3
1600.0	1.3	1.3	9.4
1700.0	1.4	1.4	9.5
1800.0	1.3	1.4	9.3
1900.0	1.4	1.5	9.4
2000.0	1.3	1.5	9.5
2100.0	1.3	1.5	9.5
2200.0	1.2	1.5	9.7
2300.0	1.3	1.5	9.7
2400.0	1.4	1.5	9.7
2500.0	1.7	1.5	9.6
2600.0	1.9	1.5	9.1

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.150	−129	2.771	−158	.174	23	.213	−134
2.0	.088	−156	2.878	−168	.174	9	.143	−160
5.0	.045	−176	2.973	−176	.164	2	.103	−175
10.0	.042	−170	2.956	−179	.164	1	.103	−176
50.0	.050	165	2.920	175	.166	−2	.105	168
100.0	.045	144	2.893	169	.167	−5	.102	155
200.0	.028	135	2.861	159	.168	−10	.089	132
300.0	.023	119	2.827	149	.168	−16	.075	112
400.0	.009	21	2.861	140	.170	−21	.059	99
500.0	.008	−53	2.895	130	.169	−27	.050	78
600.0	.012	−76	2.899	119	.169	−33	.044	40
700.0	.038	−80	2.901	108	.169	−39	.045	−2
800.0	.052	−108	2.919	98	.169	−45	.054	−40
900.0	.057	−122	2.904	88	.170	−50	.069	−67
1000.0	.072	−138	2.910	77	.169	−56	.083	−90
1100.0	.094	−157	2.911	67	.170	−63	.104	−111
1200.0	.098	−171	2.896	56	.168	−69	.120	−126
1300.0	.117	173	2.895	46	.168	−76	.129	−142
1400.0	.130	159	2.908	35	.167	−82	.140	−158
1500.0	.121	143	2.907	25	.165	−89	.145	−174
1600.0	.146	128	2.935	14	.164	−96	.148	170
1700.0	.155	112	2.969	3	.161	−102	.158	152
1800.0	.142	94	2.929	−8	.159	−108	.170	136
1900.0	.155	73	2.939	−19	.159	−115	.184	122
2000.0	.147	54	2.970	−30	.158	−122	.194	108
2100.0	.131	24	2.987	−42	.157	−129	.205	95
2200.0	.109	−5	3.046	−55	.155	−136	.203	82
2300.0	.121	−53	3.048	−69	.152	−144	.200	67
2400.0	.159	−92	3.056	−83	.148	−151	.197	48
2500.0	.246	−129	3.004	−100	.143	−158	.185	24
2600.0	.307	−152	2.866	−116	.136	−164	.196	−4

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.152 W
Junction Temperature Rise Above Case T_{jc} ... 7°C

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