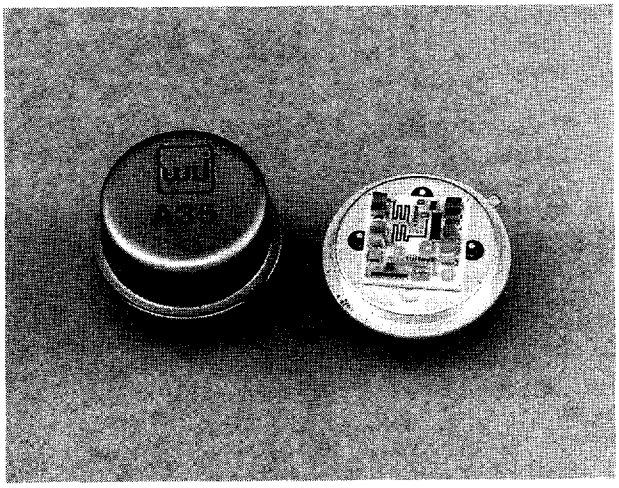
WJ-A35 / SMA35

10 to 2000 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ MEDIUM OUTPUT LEVEL: +9 dBm (TYP.)
- ◆ WIDE POWER SUPPLY RANGE: +8 TO + 20 VOLTS



Specifications*

Characteristics	Typical	Guaranteed 0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	1-2050 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	10.0 dB	9.0 dB	8.5 dB
Gain Flatness (Max.)			
500-2000 MHz	< ±0.3 dB	±0.6 dB	±0.8 dB
10-2000 MHz	< ±0.5 dB	±0.8 dB	±1.0 dB
Noise Figure (Max.)	5.0 dB	6.5 dB	7.0 dB
Power Output			
at 1 dB Compression (Min.)	+9 dBm	+7 dBm	+6.5 dBm
VSWR (Max.)			
Input	< 1.5:1	2.0:1	2.2:1
output	< 1.5:1	2.2:1	2.2:1
DC Current (Max.) at 15 Volts	24 mA	27 mA	29 mA

Measured in a 50-ohm system at +15 Vdc Nominal.
Notes:
1. WJ-CA35 is a standard WJ-A35 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.....+38 dBm (Typ.)
Second Order Two Tone Intercept Point.....+33 dBm (Typ.)
Third Order Two Tone Intercept Point.....+21 dBm (Typ.)

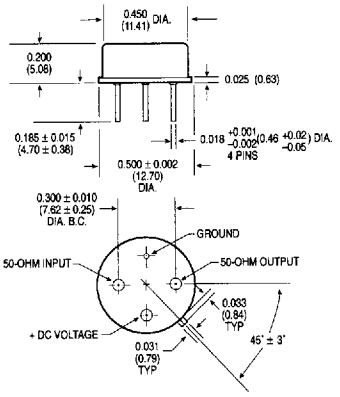
Absolute Maximum Ratings

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 .....50 Milliwatt (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 0z.)

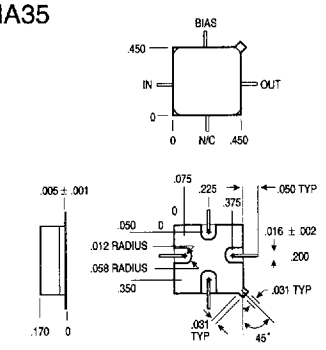
Outline Drawings

A35



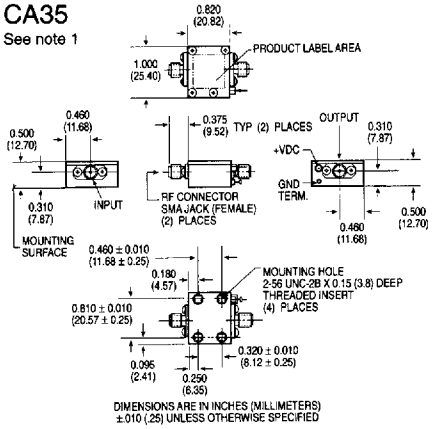
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

SMA35



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

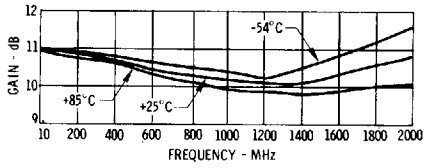
CA35
See note 1



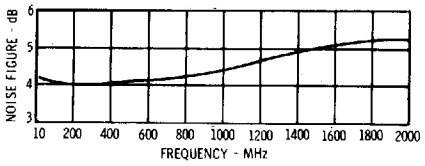
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

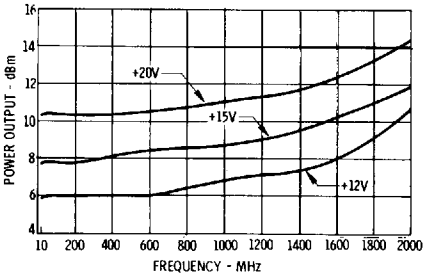
Gain



Noise Figure

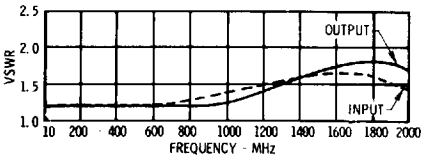


Power Output*



*at 1 dB Gain Compression

VSWR



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.4	1.7	9.9
2.0	1.2	1.5	10.2
5.0	1.2	1.4	10.2
10.0	1.2	1.4	10.2
50.0	1.2	1.4	10.1
100.0	1.2	1.4	10.0
200.0	1.2	1.4	9.9
300.0	1.1	1.3	9.9
400.0	1.1	1.2	10.0
500.0	1.2	1.2	10.0
600.0	1.2	1.1	10.0
700.0	1.2	1.1	10.0
800.0	1.3	1.1	10.0
900.0	1.4	1.1	9.9
1000.0	1.4	1.1	9.9
1100.0	1.5	1.2	9.9
1200.0	1.5	1.3	9.9
1300.0	1.5	1.3	9.9
1400.0	1.5	1.3	9.9
1500.0	1.5	1.4	10.0
1600.0	1.5	1.4	10.1
1700.0	1.4	1.4	10.2
1800.0	1.3	1.4	10.2
1900.0	1.3	1.3	10.3
2000.0	1.4	1.2	10.3
2100.0	1.7	1.1	10.1
2200.0	2.3	1.1	9.5

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.177	−123	3.135	−158	.148	22	.253	−138
2.0	.103	−150	3.223	−169	.149	11	.199	−157
5.0	.089	−165	3.236	−177	.148	4	.182	−171
10.0	.091	−171	3.219	−179	.149	2	.181	−177
50.0	.089	174	3.192	174	.150	−1	.178	170
100.0	.087	166	3.170	167	.150	−4	.171	159
200.0	.071	168	3.139	155	.152	−8	.154	140
300.0	.067	175	3.113	144	.153	−12	.134	124
400.0	.063	−178	3.152	132	.155	−18	.110	111
500.0	.073	−173	3.172	120	.155	−23	.091	96
600.0	.089	−175	3.169	107	.154	−28	.066	73
700.0	.105	−173	3.161	95	.155	−33	.042	38
800.0	.135	−178	3.148	83	.155	−38	.028	−23
900.0	.153	170	3.131	71	.157	−43	.040	−85
1000.0	.178	158	3.130	58	.156	−48	.063	−122
1100.0	.189	147	3.114	47	.157	−54	.091	−145
1200.0	.206	132	3.111	35	.156	−58	.112	−163
1300.0	.211	117	3.112	23	.155	−63	.127	177
1400.0	.216	102	3.122	9	.155	−68	.142	158
1500.0	.211	82	3.154	−3	.155	−74	.149	138
1600.0	.201	66	3.192	−16	.159	−79	.153	116
1700.0	.179	42	3.231	−30	.162	−85	.160	96
1800.0	.140	10	3.245	−44	.170	−91	.154	75
1900.0	.128	−37	3.292	−60	.179	−99	.131	55
2000.0	.154	−102	3.257	−76	.185	−110	.088	29
2100.0	.264	−144	3.210	−94	.186	−121	.026	−18
2200.0	.400	−179	2.987	−114	.177	−133	.066	−158

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.188 W
Junction Temperature Rise Above Case T_{jc} ... 9°C