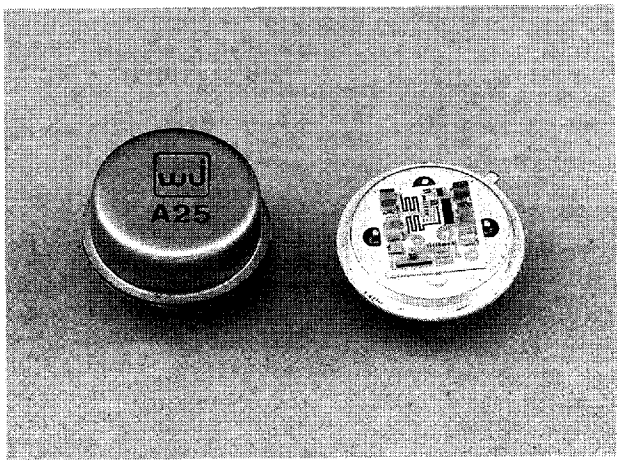
WJ-A25 / SMA25



5 to 1500 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ MEDIUM OUTPUT LEVEL: +9 dBm (TYP.)
- ◆ WIDE POWER SUPPLY RANGE: +8 TO +15 VOLTS

Specifications*

Characteristics	Typical	Guaranteed 0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	1-1600 MHz	5-1500 MHz	5-1500 MHz
Small Signal Gain (Min.)	10 dB	9.0 dB	8.0 dB
Gain Flatness (Max.)	< ±0.3 dB	±0.6 dB	±1.0 dB
Noise Figure (Max.)	6.0 dB	7.5 dB	8.0 dB
Power Output at 1 dB Compression (Min.)	+9 dBm	+7 dBm	+6.5 dBm
VSWR (Max.) Input/Output	< 1.5:1	2.0:1	2.0:1
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-CA25 is a standard WJ-A25 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.)

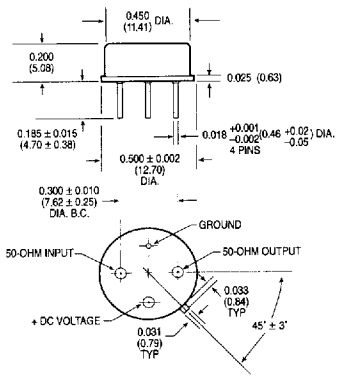
Absolute Maximum Ratings

Storage Temperature .....-62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage.....+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.)

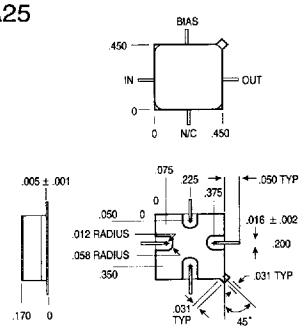
Outline Drawings

A25



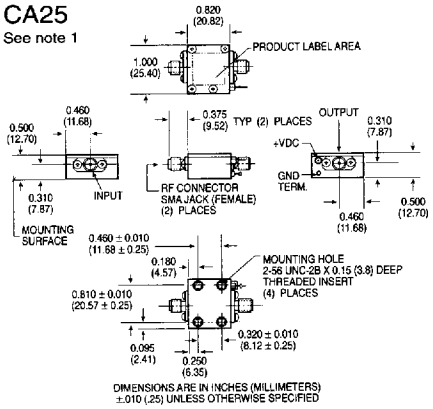
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.005 (.13) UNLESS OTHERWISE SPECIFIED

SMA25



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

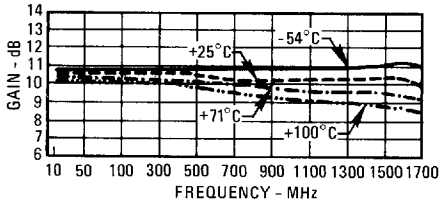
CA25
See note 1



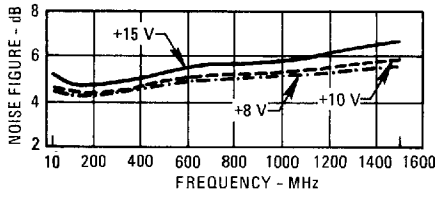
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

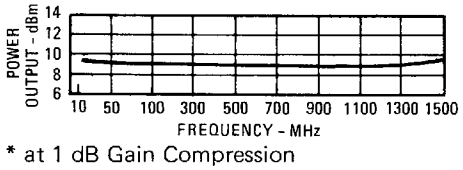
Gain



Noise Figure

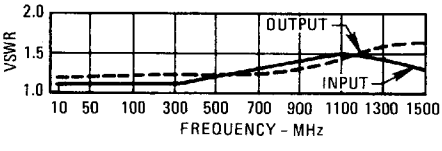


Power Output*



* 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	1.3	1.6	10.8
2.0	1.1	1.4	11.0
5.0	1.1	1.3	11.1
10.0	1.1	1.3	11.0
50.0	1.1	1.3	10.9
100.0	1.1	1.3	10.8
200.0	1.1	1.3	10.7
300.0	1.1	1.2	10.6
400.0	1.2	1.1	10.7
500.0	1.3	1.1	10.7
600.0	1.3	1.0	10.7
700.0	1.4	1.0	10.7
800.0	1.5	1.1	10.7
900.0	1.5	1.1	10.7
1000.0	1.5	1.2	10.8
1100.0	1.5	1.2	10.8
1200.0	1.4	1.3	11.0
1300.0	1.3	1.3	11.2
1400.0	1.2	1.4	11.3
1500.0	1.4	1.4	11.4
1600.0	1.7	1.6	11.1
1700.0	2.4	1.7	10.6

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.117	–128	3.472	–157	.141	21	.218	–143
2.0	.068	–149	3.566	–169	.139	9	.161	–161
5.0	.048	–159	3.576	–177	.137	4	.141	–173
10.0	.047	–166	3.553	–180	.138	2	.140	–178
50.0	.046	–177	3.510	173	.139	–2	.137	168
100.0	.038	178	3.482	165	.140	–5	.130	156
200.0	.045	–149	3.445	151	.140	–10	.114	134
300.0	.068	–143	3.399	137	.141	–15	.092	116
400.0	.095	–147	3.436	123	.143	–21	.066	103
500.0	.132	–158	3.445	109	.143	–27	.046	90
600.0	.148	–172	3.441	94	.143	–33	.023	62
700.0	.160	178	3.426	80	.142	–39	.009	–60
800.0	.186	162	3.426	65	.144	–45	.033	–126
900.0	.203	148	3.425	52	.146	–51	.055	–153
1000.0	.203	130	3.458	37	.147	–58	.079	–179
1100.0	.195	111	3.485	22	.148	–65	.101	159
1200.0	.175	87	3.539	7	.151	–72	.114	133
1300.0	.134	55	3.613	–9	.154	–80	.129	99
1400.0	.093	–1	3.660	–28	.159	–89	.152	64
1500.0	.158	–74	3.707	–47	.166	–101	.184	24
1600.0	.261	–123	3.581	–70	.168	–116	.229	–15
1700.0	.420	–158	3.392	–92	.162	–134	.272	–54

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.183 W
Junction Temperature Rise Above Case T_{jc} ... 8°C