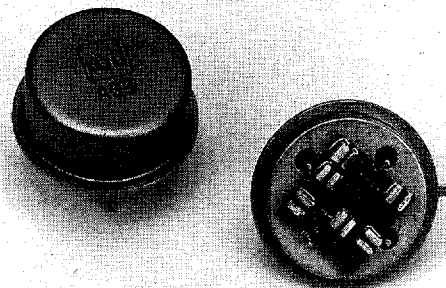


WJ-A33 / SMA33

10 to 2000 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ LOW NOISE FIGURE: 4.5 dB (TYP.)
- ◆ +3 dBm OUTPUT LEVEL (TYP.)
- ◆ WIDE POWER SUPPLY RANGE:
+8 TO +15 VOLTS



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	1-2050 MHz	10-2000 MHz	10-2000 MHz
Small Signal Gain (Min.)	9.5 dB	8.5 dB	8.0 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.)	4.5 dB	5.5 dB	6.0 dB
Power Output			
at 1 dB Compression (Min.)	+3.0 dBm	+2.0 dBm	+2.0 dBm
VSWR (Max.) Input/Output	< 1.7:1	2.0:1	2.2:1
DC Current (Max.) at 15 Volts	14 mA	16 mA	17 mA

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

Notes:

1. WJ-CA33 is a standard WJ-A33 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.....+28 dBm (Typ.)
Second Order Two Tone Intercept Point.....+22 dBm (Typ.)
Third Order Two Tone Intercept Point.....+15 dBm (Typ.)

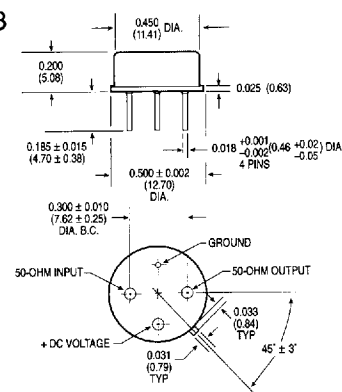
Absolute Maximum Ratings

Storage Temperature-62°C to +125°C
Maximum Case Temperature125°C
Maximum DC Voltage.....+20 Volts
Maximum Continuous RF Input Power+13 dBm
Maximum Short Term RF Input Power50 Milliwatt (1 Minute Max.)
Maximum Peak Power0.5 Watt (3 µsec Max.)
"S" Series Burn-in Temperature (Case)125°C

Weight approximately 2.0 grams (0.07 oz.)

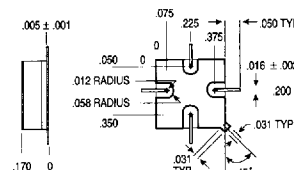
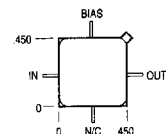
Outline Drawings

A33



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

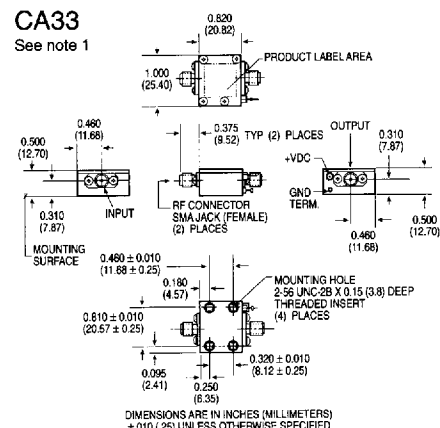
SMA33



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

CA33

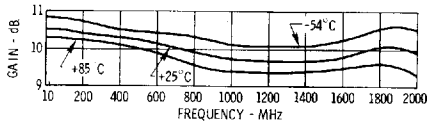
See note 1



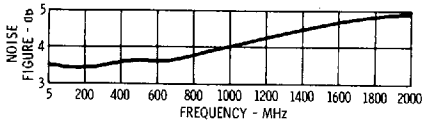
DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C

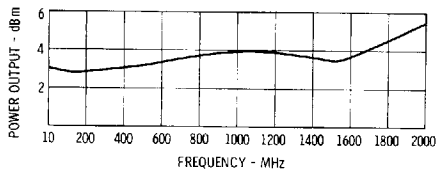
Gain



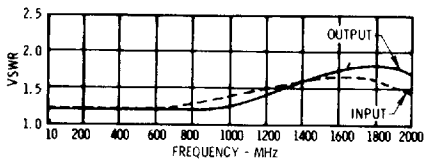
Noise Figure



Power Output*



VSWR



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	1.5	1.6	9.9
2.0	1.3	1.4	10.0
5.0	1.2	1.4	10.1
10.0	1.2	1.4	10.0
50.0	1.2	1.4	10.0
100.0	1.2	1.4	9.9
200.0	1.2	1.3	9.8
300.0	1.2	1.3	9.7
400.0	1.1	1.3	9.8
500.0	1.2	1.2	9.9
600.0	1.2	1.2	9.9
700.0	1.2	1.2	9.9
800.0	1.3	1.2	9.9
900.0	1.3	1.2	9.9
1000.0	1.3	1.2	9.9
1100.0	1.4	1.2	9.9
1200.0	1.4	1.3	9.9
1300.0	1.4	1.2	10.0
1400.0	1.4	1.2	10.0
1500.0	1.3	1.2	10.0
1600.0	1.2	1.2	10.0
1700.0	1.1	1.2	10.1
1800.0	1.1	1.2	10.0
1900.0	1.2	1.2	9.9
2000.0	1.5	1.1	9.7
2100.0	1.9	1.1	9.2
2200.0	2.6	1.2	8.4

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.185	-128	3.119	-161	.154	23	.226	-134
2.0	.113	-146	3.173	-171	.158	11	.179	-154
5.0	.103	-165	3.181	-177	.158	5	.163	-171
10.0	.099	-173	3.170	-180	.159	2	.160	-177
50.0	.096	174	3.145	174	.160	-1	.156	168
100.0	.089	170	3.120	168	.160	-4	.152	154
200.0	.079	170	3.098	155	.161	-9	.142	131
300.0	.075	175	3.069	144	.163	-13	.129	110
400.0	.069	176	3.107	133	.164	-18	.114	90
500.0	.067	-180	3.128	121	.164	-24	.106	69
600.0	.096	178	3.143	109	.164	-29	.100	41
700.0	.101	176	3.134	96	.163	-34	.096	12
800.0	.124	174	3.141	84	.164	-39	.094	-18
900.0	.135	161	3.129	73	.165	-44	.097	-46
1000.0	.149	153	3.139	60	.165	-49	.099	-74
1100.0	.161	143	3.144	48	.165	-54	.107	-102
1200.0	.161	130	3.142	36	.165	-59	.112	-124
1300.0	.161	116	3.150	23	.165	-65	.109	-147
1400.0	.151	107	3.161	10	.164	-69	.107	-172
1500.0	.125	87	3.175	-3	.166	-75	.099	162
1600.0	.106	74	3.173	-17	.169	-81	.091	131
1700.0	.069	47	3.191	-31	.174	-86	.093	100
1800.0	.030	-42	3.151	-46	.179	-93	.087	69
1900.0	.086	-122	3.125	-62	.185	-101	.073	39
2000.0	.192	-157	3.048	-78	.187	-110	.052	-9
2100.0	.307	-175	2.891	-95	.186	-120	.045	-87
2200.0	.449	164	2.627	-113	.180	-129	.088	-143

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{JC} 45°C/W
 Transistor Power Dissipation P_D 0.165 W
 Junction Temperature Rise Above Case T_{JC} ... 7°C