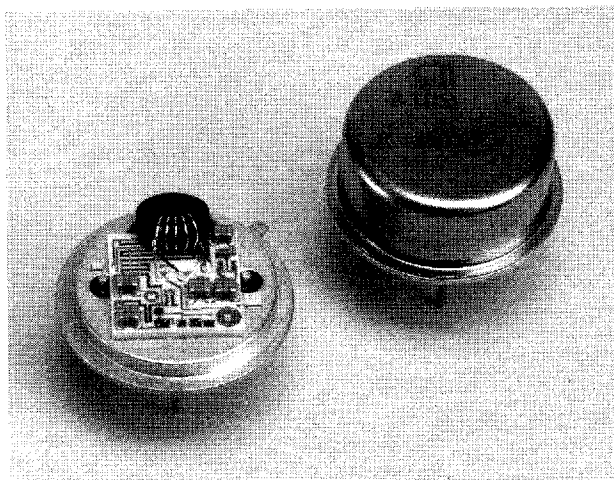


WJ-A180/SMA180

10 to 500 MHz

TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH REVERSE ISOLATION: 22 dB (TYP.)
- ◆ HIGH OUTPUT POWER: +18 dBm (TYP.)



Specifications*

Characteristics	Typical	Guaranteed	
		0° to 50°C	-54° to +85°C
Frequency (Min.)	5-600 MHz	10-500 MHz	10-500 MHz
Small Signal Gain (Min.)	16.5 dB	16 dB	15.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	3.4 dB	4.0 dB	4.5 dB
Power Output at 1 dB Compression (Min.)	+18 dBm	+16 dBm	+15 dBm
VSWR (Max.)			
Input	1.4:1	1.9:1	2.1:1
Output	1.5:1	2.1:1	2.2:1
DC Current (Max.) at 15 Volts	63 mA	69 mA	75 mA

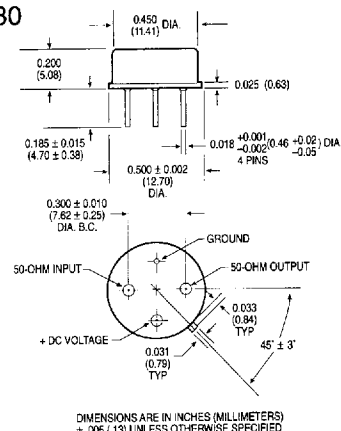
*Measured in a 50-ohm system at +15 Vdc Nominal.

Notes:

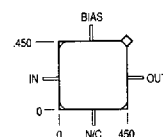
WJ-CA180 is a standard WJ-A180 installed in a miniature SMA connector housing and guaranteed over 0°C to 50°C temperature range.

Outline Drawings

A180



SMA180



Typical Intermodulation Performance at 25°C

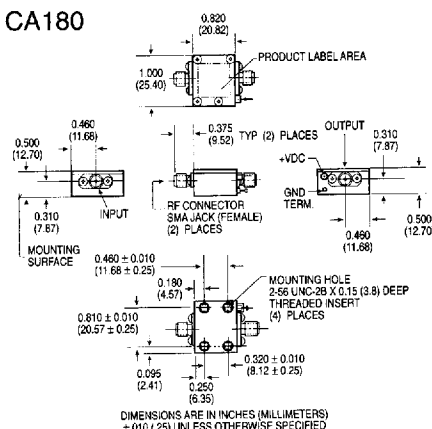
Second Order Harmonic Intercept Point	+51 dBm (Typ.)
Second Order Two-Tone Intercept Point	+45 dBm (Typ.)
Third Order Two-Tone Intercept Point	+33 dBm (Typ.)

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	+15 dBm
Maximum Short-Term RF Input Power (1 Minute Max.)	100 Milliwatts
Maximum Peak Power	0.5 Watt (3 μsec Max.)
"S" Series Burn-In Temperature (Case)	125°C

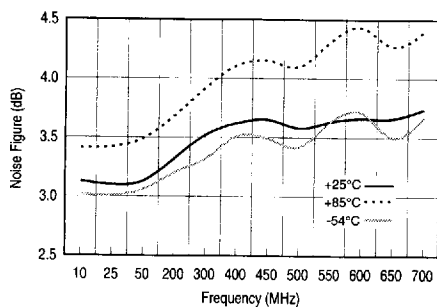
Weight: 2.0 Grams (0.07 oz.)

CA180

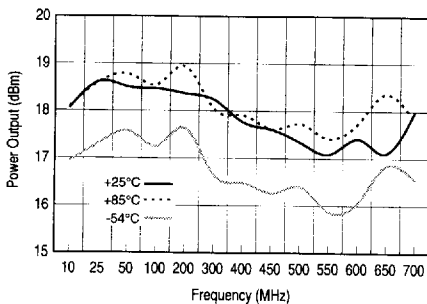


Typical Performance at 25°C

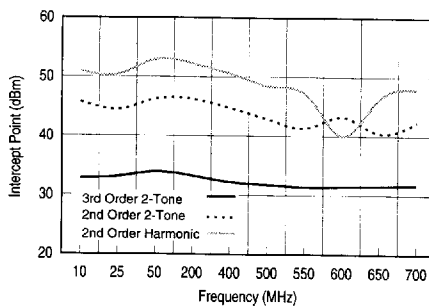
Noise Figure



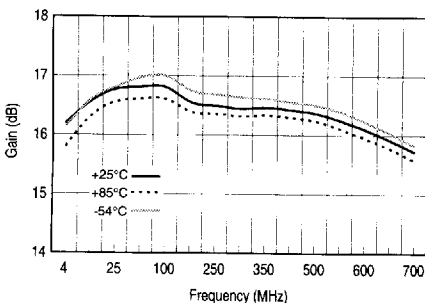
Power Output (1dB Gain Compression)



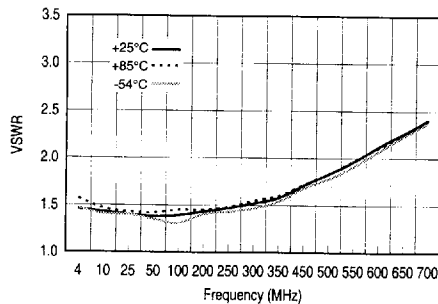
Intercept Point



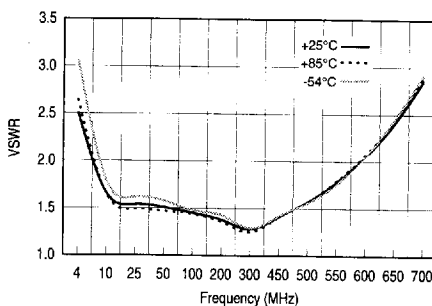
Gain



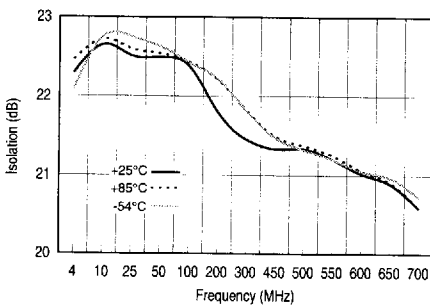
Output VSWR



Input VSWR



Reverse Isolation



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
5.0	2.4	1.7	16.1
10.0	1.7	1.4	16.3
50.0	1.6	1.4	16.5
100.0	1.5	1.4	16.5
150.0	1.5	1.4	16.4
200.0	1.4	1.4	16.3
250.0	1.4	1.4	16.3
300.0	1.4	1.5	16.2
350.0	1.3	1.5	16.3
400.0	1.3	1.6	16.3
450.0	1.4	1.7	16.3
500.0	1.5	1.8	16.2
550.0	1.7	2.0	16.1
600.0	2.0	2.2	16.0
650.0	2.3	2.3	15.8
700.0	2.7	2.5	15.6

Linear S-Parameters

Frequency MHz	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
5.0	.427	-101	6.42	-148	.065	9	.264	176
10.0	.282	-132	6.57	-166	.072	4	.199	175
50.0	.235	-179	6.73	171	.075	-1	.172	177
100.0	.228	162	6.68	158	.076	-3	.173	178
150.0	.214	147	6.63	146	.077	-6	.178	178
200.0	.198	133	6.56	135	.078	-8	.183	177
250.0	.182	117	6.54	123	.079	-11	.192	177
300.0	.167	98	6.52	112	.080	-13	.204	177
350.0	.158	76	6.53	101	.082	-16	.221	176
400.0	1.61	50	6.56	89	.083	-20	.244	174
450.0	.186	25	6.55	77	.084	-23	.271	171
500.0	.224	1	6.50	65	.086	-26	.301	166
550.0	.272	-17	6.42	53	.086	-29	.335	161
600.0	.333	-34	6.32	40	.088	-32	.374	153
650.0	.402	-49	6.19	28	.089	-35	.408	145
700.0	.463	-61	6.04	16	.092	-38	.438	137

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} 45°C/W
 Transistor Power Dissipation P_d 0.509 W
 Junction Temperature Rise Above Case T_{jc} ... 22.9°C