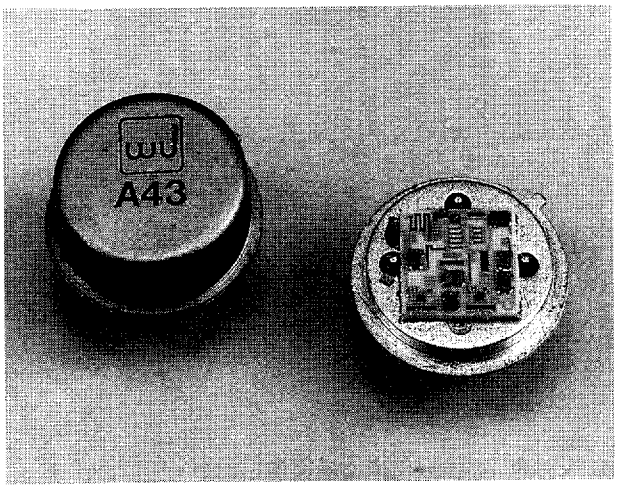
WJ-A43 / SMA43



100 to 3200 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ ULTRA-WIDE BANDWIDTH: 100-3200 MHz
- ◆ EXCELLENT GAIN BLOCK: 11.5 dB (TYP.)
- ◆ MEDIUM OUTPUT LEVEL: +8.5 dBm (TYP.)

Specifications*

Characteristics	Typical	Guaranteed 0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	80-3200 MHz	100-3200 MHz	100-3200 MHz
Small Signal Gain (Min.)	11.5 dB	10.5 dB	9.8 dB
Gain Flatness (Max.)	±0.3 dB	±0.7 dB	±1.0 dB
Noise Figure (Max.)	6.7 dB	7.2 dB	7.7 dB
Power Output at 1 dB Compression (Min.)	+8.5 dBm	+7.0 dBm	+6.5 dBm
VSWR (Max.)			
Input	1.6:1	2.0:1	2.2:1
output	1.8:1	2.3:1	2.4:1
DC Current (Max) at 15 Volts	45 mA	48 mA	50 mA

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

Notes:

1. WJ-CA43 is a standard WJ-A43 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.....+45 dBm (Typ.)
Second Order Two Tone Intercept Point.....+40 dBm (Typ.)
Third Order Two Tone Intercept Point.....+21 dBm (Typ.)

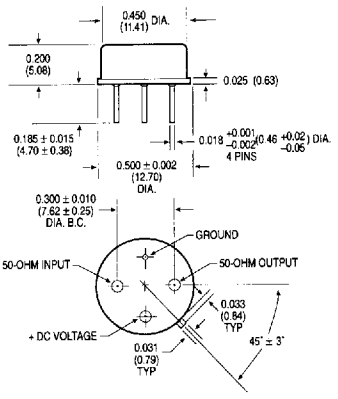
Absolute Maximum Ratings

Storage Temperature .....-62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage.....+17 Volts
Maximum Continuous RF Input Power .....+10 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

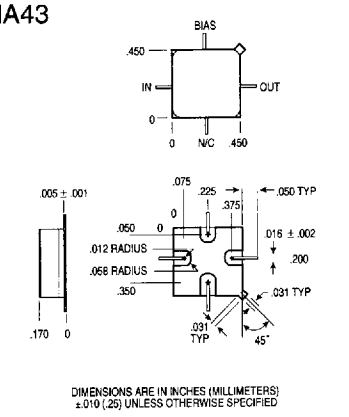
Weight approximately 2.0 grams (0.07 oz.)

Outline Drawings

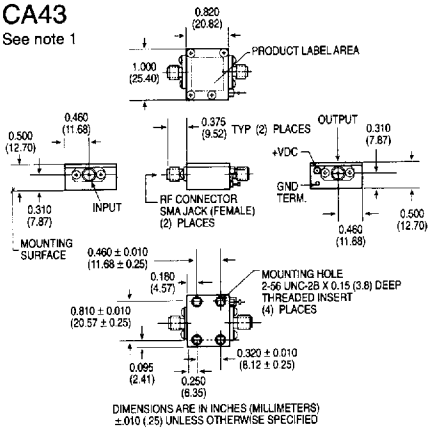
A43



SMA43

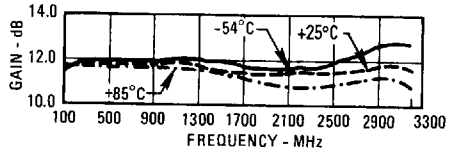


CA43
See note 1

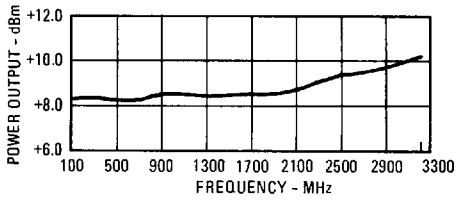


Typical Performance at 25°C

Gain

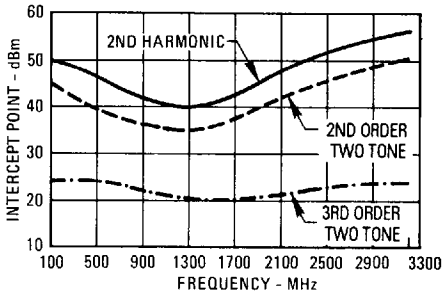


Power Output*

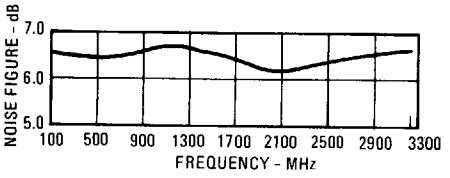


* at 1 dB Gain Compression

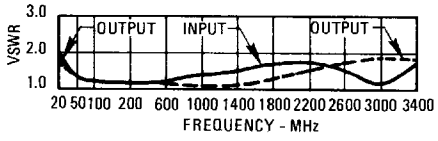
Intercept Point



Noise Figure



VSWR



Typical Automatic Test Data

V_{CC} = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
100.0	1.1	1.2	12.3
200.0	1.1	1.1	12.3
300.0	1.1	1.2	12.3
400.0	1.1	1.2	12.3
500.0	1.1	1.2	12.3
600.0	1.1	1.3	12.3
700.0	1.2	1.3	12.3
800.0	1.2	1.3	12.3
900.0	1.2	1.4	12.3
1000.0	1.2	1.4	12.2
1100.0	1.3	1.4	12.2
1200.0	1.3	1.4	12.3
1300.0	1.3	1.4	12.3
1400.0	1.3	1.4	12.2
1500.0	1.3	1.4	12.2
1600.0	1.4	1.5	12.2
1700.0	1.3	1.5	12.1
1800.0	1.4	1.5	12.1
1900.0	1.4	1.5	12.1
2000.0	1.4	1.4	12.1
2100.0	1.4	1.4	12.2
2200.0	1.4	1.3	12.2
2300.0	1.4	1.2	12.2
2400.0	1.4	1.2	12.2
2500.0	1.4	1.1	12.2
2600.0	1.3	1.2	12.1
2700.0	1.3	1.3	12.1
2800.0	1.3	1.4	12.0
2900.0	1.3	1.6	11.9
3000.0	1.4	1.8	11.8
3100.0	1.4	1.9	11.6
3200.0	1.5	2.0	11.4
3300.0	1.6	2.1	11.1
3400.0	1.8	2.2	10.9

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100.0	.069	–90	4.108	–21	.040	–8	.071	–163
200.0	.050	–103	4.132	–58	.041	–38	.062	128
300.0	.050	–130	4.110	–91	.041	–62	.075	84
400.0	.051	–131	4.123	–124	.042	–87	.092	50
500.0	.063	–157	4.116	–155	.041	–110	.108	22
600.0	.068	–173	4.113	173	.041	–135	.123	–6
700.0	.076	163	4.112	141	.041	–157	.135	–32
800.0	.083	146	4.104	110	.041	–179	.148	–58
900.0	.097	123	4.115	77	.038	157	.156	–87
1000.0	.104	106	4.085	46	.038	135	.162	–115
1100.0	.112	85	4.092	14	.039	112	.163	–144
1200.0	.123	65	4.097	–18	.038	88	.167	–173
1300.0	.133	40	4.100	–49	.038	64	.170	155
1400.0	.134	21	4.077	–80	.038	42	.175	125
1500.0	.137	0	4.070	–112	.038	20	.182	94
1600.0	.155	–24	4.053	–143	.037	–4	.184	64
1700.0	.147	–44	4.048	–174	.037	–26	.187	36
1800.0	.161	–67	4.039	155	.037	–49	.191	8
1900.0	.156	–90	4.037	124	.037	–71	.187	–17
2000.0	.169	–115	4.049	93	.037	–94	.172	–41
2100.0	.166	–136	4.052	61	.036	–117	.154	–64
2200.0	.164	–159	4.069	30	.036	–141	.132	–85
2300.0	.156	179	4.064	–1	.035	–162	.101	–100
2400.0	.150	155	4.065	–33	.037	175	.071	–104
2500.0	.150	131	4.071	–65	.036	152	.060	–85
2600.0	.133	102	4.049	–97	.035	127	.087	–72
2700.0	.132	73	4.026	–129	.035	104	.132	–80
2800.0	.140	42	3.977	–161	.035	82	.178	–97
2900.0	.142	16	3.938	167	.036	61	.226	–118
3000.0	.162	–18	3.891	134	.037	38	.275	–140
3100.0	.182	–46	3.797	102	.036	12	.308	–163
3200.0	.212	–76	3.704	69	.036	–8	.334	171
3300.0	.245	–107	3.608	37	.036	–31	.358	146
3400.0	.273	–134	3.496	3	.038	–52	.372	120

Thermal Data: V_{CC} = 15 Vdc

Thermal Resistance θ_{jc} ..... 45°C/W
Transistor Power Dissipation P_d ..... 0.187 W
Junction Temperature Rise Above Case T_{jc} ... 8°C