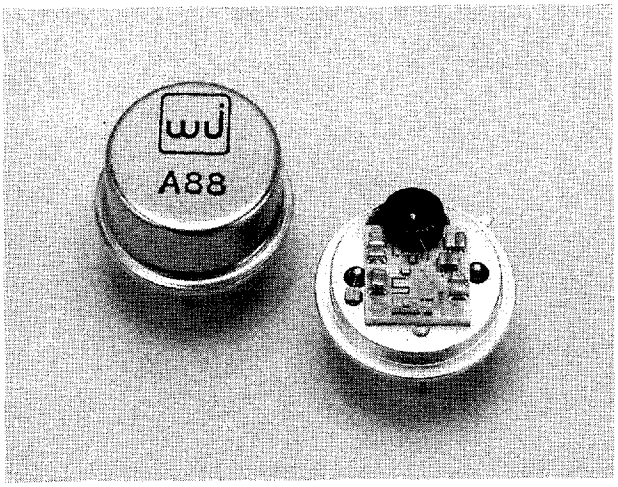
WJ-A88 / SMA88

5 to 500 MHz
TO-8 CASCADABLE AMPLIFIER

- ◆ AVAILABLE IN SURFACE MOUNT
- ◆ HIGH GAIN: 18.7 dB (TYP.)
- ◆ HIGH OUTPUT POWER: +20.5 dBm (TYP.)
- ◆ HIGH THIRD ORDER I.P.: +30 dBm (TYP.)



Specifications*

Characteristics	Typical	0° to 50°C	Guaranteed -54° to +85°C
Frequency (Min.)	2-500 MHz	5-500 MHz	5-500 MHz
Small Signal Gain (Min.)	18.7 dB	18.0 dB	17.5 dB
Gain Flatness (Max.)	±0.3 dB	±0.5 dB	±0.7 dB
Noise Figure (Max.)			
Vcc= +15 V	6.5 dB	7.5 dB	8.0 dB
Vcc= +12 V	4.5 dB	5.5 dB	6.0 dB
Power Output			
at 1 dB Compression (Min.)	+20.5 dBm	+19.5 dBm	+19.0 dBm
VSWR (Max.) Input/Output	1.5:1	1.8:1	2.0:1
DC Current (Max.) at 15 Volts	79 mA	83 mA	87 mA

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

Notes:
1. WJ-CA88 is a standard WJ-A88 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.....+41 dBm (Typ.)
Second Order Two Tone Intercept Point..... +38 dBm (Typ.)
Third Order Two Tone Intercept Point.....+30 dBm (Typ.)

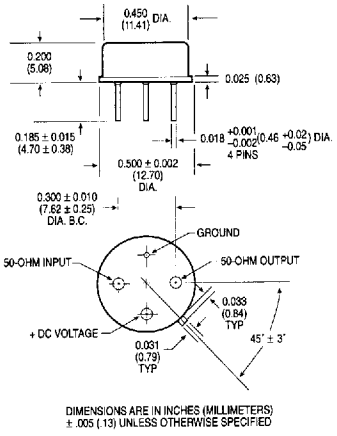
Absolute Maximum Ratings

Storage Temperature ..... -62°C to +125°C
Maximum Case Temperature .....125°C
Maximum DC Voltage..... +17 Volts
Maximum Continuous RF Power..... +13 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 approximately 2.0 grams (0.07oz.)

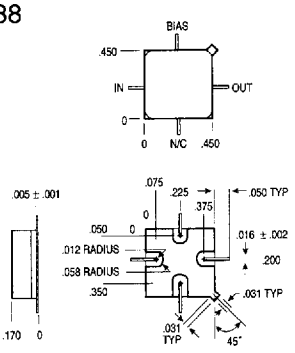
Outline Drawings

A88



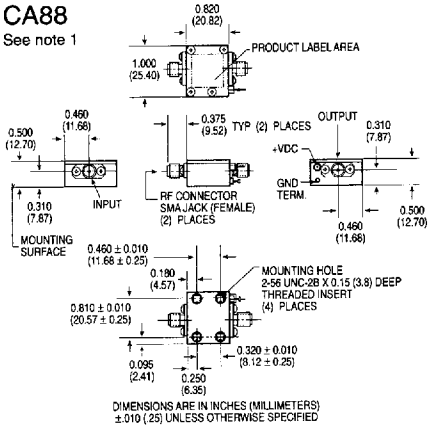
DIMENSIONS ARE IN INCHES (MILLIMETERS)
± .005 (.13) UNLESS OTHERWISE SPECIFIED

SMA88



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

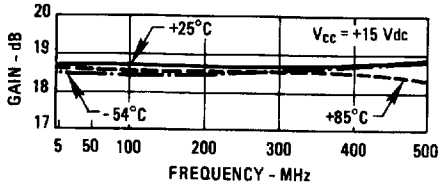
CA88
See note 1

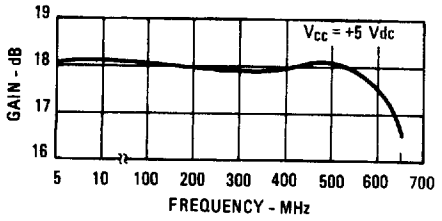


DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.010 (.25) UNLESS OTHERWISE SPECIFIED

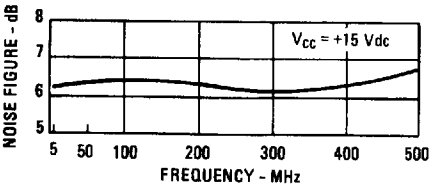
Typical Performance at 25°C

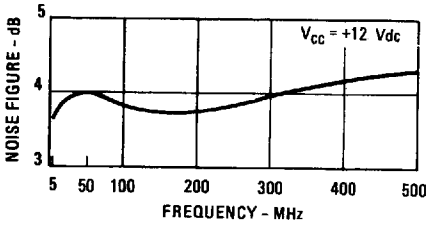
Gain

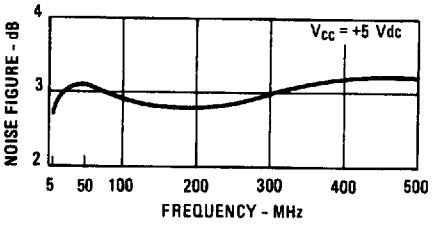




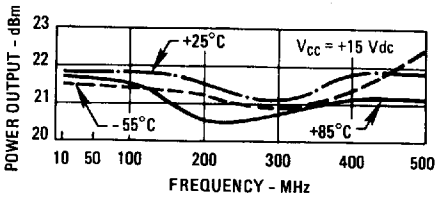
Noise Figure

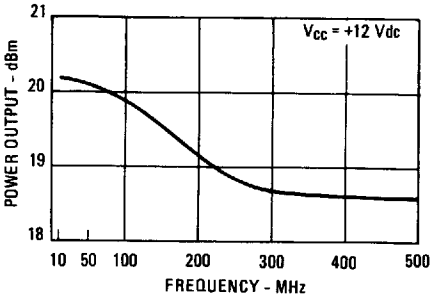


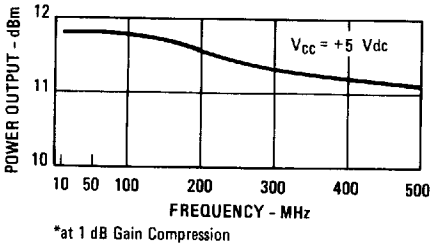




Power Output*

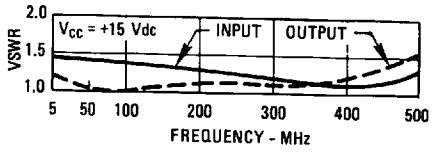


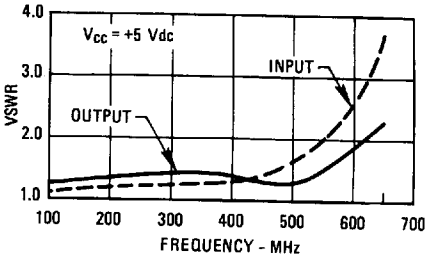




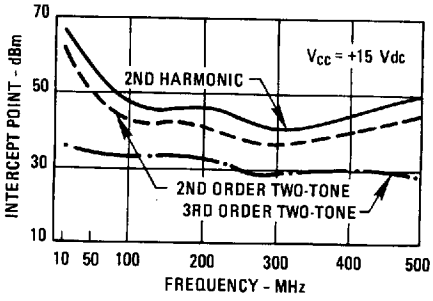
*at 1 dB Gain Compression

VSWR





Intercept Point



Typical Automatic Test Data

Vcc = 15.0 V

Frequency MHz	VSWR IN	VSWR OUT	GAIN DB
1.0	2.0	2.0	17.7
2.0	1.5	1.4	18.6
5.0	1.3	1.1	18.7
10.0	1.3	1.1	18.7
50.0	1.3	1.0	18.7
100.0	1.2	1.0	18.6
200.0	1.2	1.0	18.6
300.0	1.1	1.1	18.7
400.0	1.1	1.2	18.8
500.0	1.2	1.4	19.0
600.0	1.3	1.9	18.8

Linear S-Parameters

Frequency	S11		S21		S12		S22	
MHz	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
1.0	.327	–86	7.630	–139	.062	45	.341	166
2.0	.199	–121	8.491	–161	.072	22	.155	127
5.0	.130	–153	8.562	–174	.073	8	.059	115
10.0	.121	–168	8.572	–179	.073	4	.033	117
50.0	.119	161	8.592	167	.073	–2	.010	126
100.0	.107	135	8.528	154	.074	–6	.008	146
200.0	.083	93	8.521	127	.077	–14	.016	159
300.0	.052	35	8.574	100	.080	–22	.038	140
400.0	.042	–61	8.751	72	.085	–31	.084	117
500.0	.071	–154	8.877	41	.093	–42	.168	83
600.0	.117	117	8.742	6	.102	–58	.322	46

Thermal Data: V_{CC} =15 Vdc

Thermal Resistance θ_{jc} .....45°C/W
Transistor Power Dissipation P_d .....0.706 W
Junction Temperature Rise Above Case T_{jc} ...32°C