

Coaxial

RF Instrument Amplifier

TVA-R5-13

50Ω

0.50 to 1000 MHz



CASE STYLE: AP1600

The Big Deal

- Wide band, 0.50-1000 MHz
- Output Power, +35 dBm
- High Gain, 38 dB Typical
- Excellent isolation, 80 dB typical
- Self Contained Power Supply with selectable 110 or 220 volts AC supply
- BNC to N-Type Adapters included
- Connector Caddy
- Thermally self protected
- Protected by US Patent 5,101,171

This model will be replaced in the future with a RoHS version. The new model will be [TVA-R5-13A+](#). It will have similar performance and will be in a new form factor.

Product Overview

The TVA-R5-13 is an instrument amplifier offering typically 35 dBm over the highly used, wideband of 0.5 to 1000 MHz while affording convenience, portability and ease of use.

Key Features

Feature	Advantages
Wide Frequency Range	Covers the AM, FM, TV and communications bands including cellular.
Power	Provides typically 35 dBm of power.
High Gain	Provides typically 38 dB of gain, allowing the unit to be driven to full output power with only zero dBm of input power.
Self Powered	An internal power supply means that only one unit need be transported and makes test set-ups quick and simple.
Cooling System	A self contained cooling system provides cooling to the amplifier.
Warning System	Over temperature warning and automatic shut down are safety features to aid in providing a long operating life.
Carrying Handle	A single strap carrying handle provides a means for conveniently transporting the unit.

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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Features

- Instrument model with built-in power supply, 110V/220V operation
- High power output at 3.5dB compression, 37dBm typ.
- High Gain, 38 dB typ.
- High reverse isolation, 80 dB typ.
- 100% burn-in at +25°C, 48 hrs
- Thermally self-protected, LED indicator
- Protected by US Patent 5,101,171
- CE marked

Applications

- Lab use
- Wideband test instrumentation



CASE STYLE: AP1600

Connectors	Model
BNC	TVA-R5-13
BNC Male - N-Female Adapter	NF-BM50+ (2 Included)

Electrical Specifications at 25°C, unless otherwise noted

Parameter	Condition (MHz)	Min	Typ.	Max.	Units
Frequency Range		0.50	—	1000	MHz
Gain ²	0.50 - 1000	35	41	—	dB
Gain Flatness	0.50 - 1000	—	±1.0	±2.2	dB
Output Power at 1dB compression ²	0.50 - 1000	+32	+35	—	dBm
Noise Figure ¹	0.50 - 1000	—	8	—	dB
Output third order intercept point	0.50 - 1000	—	+40	—	dBm
Input VSWR ³	0.50 - 1000	—	1.5	—	:1
Output VSWR ³	0.50 - 1000	—	2.5	—	:1
AC Supply		—	110/220	—	V

1. Noise Figure above 400MHz. At low frequency, NF increases to 16 dB typ.

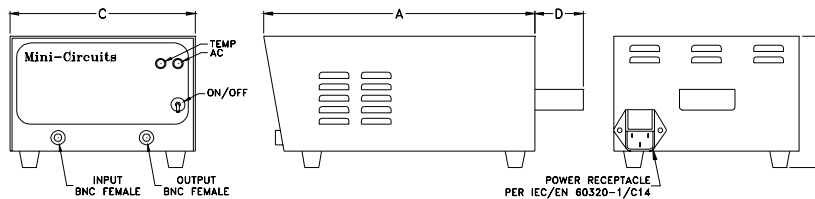
2. Gain and maximum output power specified at 25°C±5°C, over temperature, specifications degrade approximately 1dB, gain flatness ± 2.5 dB maximum.

3. VSWR specified at 340-1000 MHz

Open load is not recommended, potentially can cause damage. With no load derate max input power by 20 dB

Note: Keep area adjacent to the louvers clear to allow free air flow.

Outline Drawing



Maximum Ratings

Parameter	Ratings
Operating Temperature	0°C to 55°C
Storage Temperature	-40°C to 70°C
Input RF Power (no damage)	+7 dBm

Permanent damage may occur if any of these limits are exceeded.

Outline Dimensions (inch/mm)

A	B	C	D	wt
9.8	4.8	6.7	1.75	grams
248.9	121.9	170.2	44.5	3400

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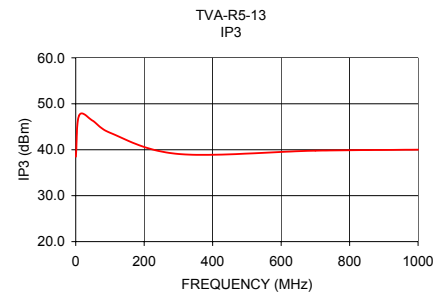
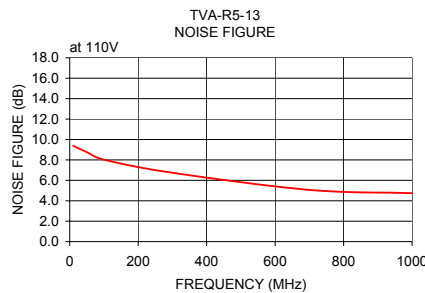
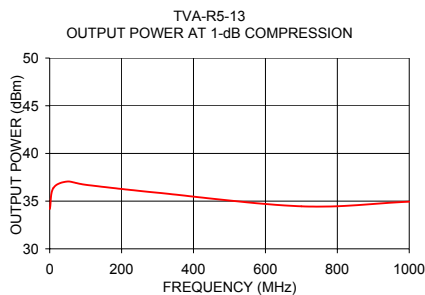
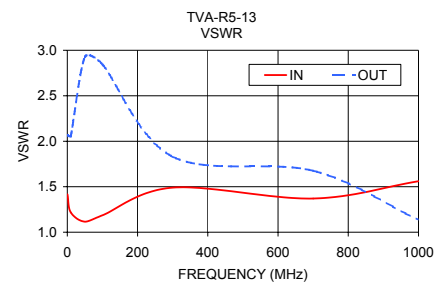
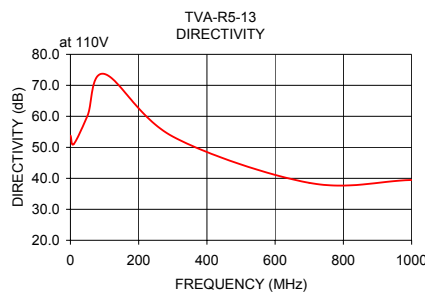
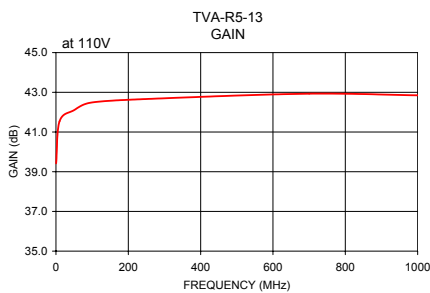


NON-CATALOG

Typical Performance Data/Curves

TVA-R5-13

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)	IP3 (dBm)
			IN	OUT			
0.50	39.42	53.77	1.42	2.07	—	34.18	38.46
10.00	41.54	51.08	1.22	2.06	9.39	36.37	47.45
50.00	42.10	60.15	1.12	2.92	8.76	37.06	46.30
100.00	42.49	73.68	1.19	2.84	8.02	36.71	43.70
300.00	42.70	53.49	1.49	1.83	6.74	35.88	39.07
700.00	42.93	38.53	1.37	1.68	5.07	34.46	39.79
1000.00	42.85	39.47	1.56	1.14	4.74	34.94	40.01



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