

50Ω

10 to 4200 MHz

## The Big Deal

- Wideband, 10 to 4200 MHz
- High gain, 39 dB
- Excellent gain flatness,  $\pm 1.3$  dB
- High output power, +30 dBm
- Built-in 110/220V AC power supply
- Built-in digital step attenuator with push-button control, 0-15 dB, 1 dB step



CASE STYLE: PJ2059-1

## Product Overview

Mini-Circuits' TVA-11-422A+ instrument amplifier provides high gain and high output power across a wide frequency range from 10 to 4200 MHz, supporting a wide variety of applications. This model features a built-in digital step attenuator on the input providing gain control from 0 to 15 dB in 1 dB steps with push-button attenuation control on the front panel. The amplifier runs on a built-in 110/220V power supply, making it easy to use in most lab environments. It features thermal self-protection, preventing damage to the amplifier and providing added reliability. It comes housed in a light-weight aluminum alloy case (15.35 x 8.27 x 3.25") with N-type connectors, ideal for bench-top use. 2 N-male to SMA-female adapters come included for the user's convenience.

Feature	Advantages
High output power, +30 dBm at 1 dB compression	Supports high power test applications such as EMI, maximum power handling, and reliability testing.
High gain, 39 dB	38 dB gain with $\pm 1.3$ dB flatness allows the TVA-11-422A+ to be driven to full output power across a wide frequency range with most commercially available signal generators.
Built-in digital step attenuator, 0 – 15 dB, 1 dB step	Allows up to 15 dB variable gain control via push-button control on the front panel.
High OIP3, +40 dBm	TVA-11-422A+ provides highly linear performance with excellent sensitivity and two-tone spur free dynamic range.
Built-in 110V/220V power supply	Operating from a standard AC line power supply, the TVA-11-422A+ can be powered from 110 to 220V, making the amplifier versatile for use in most lab environments.
Thermally-self-protected	A built-in sensing feature signals the unit to power off when the amplifier reaches its maximum rated operating temperature, preventing damage to the equipment and providing added reliability.
CE marked	Meets conformity standards for sale within the European Economic Area (EEA).

### 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Coaxial RF Instrument Amplifier

## TVA-11-422A+

50Ω 10 to 4200 MHz

### Features

- Ultra Wide band, 10 to 4200 MHz
- High Gain 39 dB typ.
- Output Power, 30 dBm typ.
- Built-in power supply and attenuator 0-15 dB
- CE marked

### Applications

- Laboratory test instrument
- Signal generator output amplification
- EMI and antenna testing



CASE STYLE: PJ2059-1

Connectors	Model
<b>N-Type</b>	TVA-11-422A+
<b>N-Male - SMA Fem Adapter</b>	NM-SF50+ ( 2 included)

**+RoHS Compliant**  
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

### Electrical Specifications at 25°C, unless otherwise noted

Parameter	Condition (MHz)	Min	Typ.	Max.	Units
Frequency Range		10	—	4200	MHz
Gain	10 - 4200	35	39	—	dB
Gain Flatness	10 - 4200	—	±1.3	—	dB
Output Power at 1dB compression <sup>1</sup>	10 - 4200	+28	+30	—	dBm
Noise Figure <sup>2</sup>	10 - 4200	—	10.5	—	dB
Output third order intercept point	10 - 4200	—	+40	—	dBm
Input VSWR	10 - 4200	—	1.7	—	:1
Output VSWR	10 - 4200	—	1.8	—	:1
AC Supply	47 - 63 Hz	85	110/220	265	V

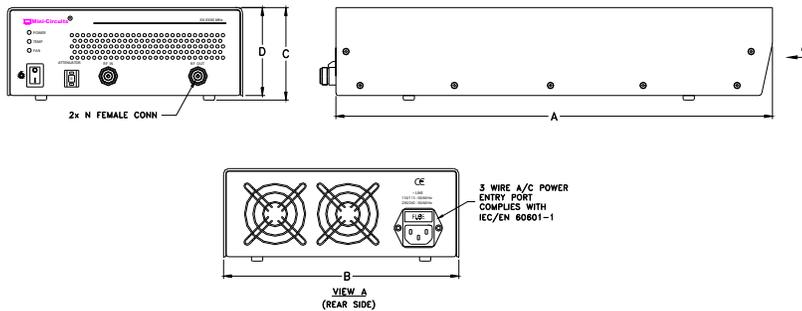
1. 26 dBm at 3600-4200 MHz.

2. Below 100 MHz, NF increases to 15 dB at 10 MHz

Open load is not recommended, potentially can cause damage. With open load derate max input power by 20 dB

Note: Keep area adjacent to the airvents 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)	-9 dBm

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

### Outline Dimensions (inch mm)

A	B	C	D	WT.
15.35	8.27	3.25	3.09	GRAM
389.89	210.06	82.55	78.49	3550

### Notes

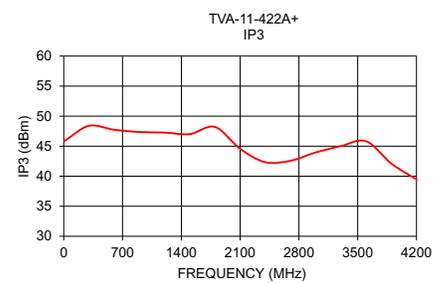
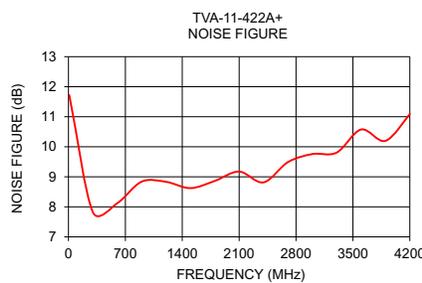
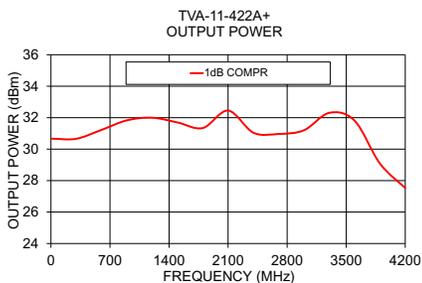
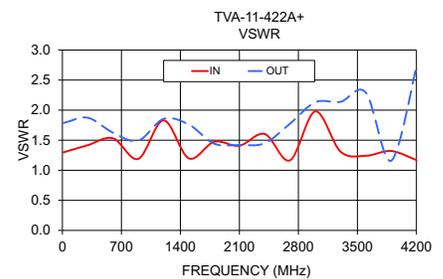
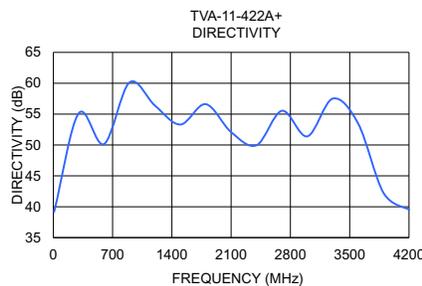
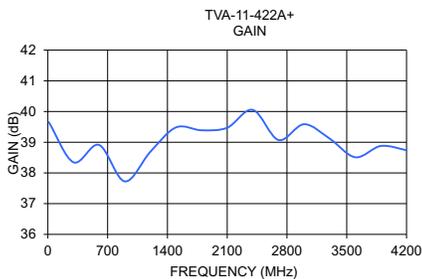
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FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)	IP3 (dBm)
			IN	OUT			
10	39.66	39.19	1.30	1.79	11.72	30.66	45.88
300	38.35	55.14	1.42	1.87	7.82	30.66	48.39
600	38.91	50.16	1.53	1.63	8.12	31.22	47.73
900	37.72	60.14	1.19	1.49	8.84	31.83	47.36
1200	38.69	56.39	1.83	1.85	8.83	32.00	47.26
1500	39.48	53.31	1.20	1.76	8.62	31.69	47.01
1800	39.39	56.62	1.47	1.44	8.86	31.34	48.20
2100	39.47	52.08	1.41	1.42	9.17	32.45	44.56
2400	40.05	49.96	1.60	1.45	8.81	31.04	42.33
2700	39.07	55.54	1.17	1.77	9.49	30.96	42.57
3000	39.59	51.40	1.98	2.13	9.76	31.20	43.95
3300	39.12	57.52	1.31	2.14	9.81	32.31	45.01
3600	38.51	53.47	1.24	2.29	10.58	31.81	45.82
3900	38.88	42.22	1.32	1.16	10.20	29.08	42.11
4200	38.74	39.54	1.17	2.72	11.09	27.53	39.46



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