



Mini-Circuits

COAXIAL

RF Instrument Amplifier

TVA-11-422A+

50Ω 10 to 4200 MHz N-Type Female

THE BIG DEAL

- Ultra Wide band, 10 to 4200 MHz
- High Gain 39 dB typ.
- Excellent Gain Flatness, ± 1.3 dB
- Output Power, +30 dBm typ.
- Built-in 110/220V AC power supply
- CE marked

APPLICATIONS

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



Generic photo used for illustration purposes only

Model No.	TVA-11-422A+
Case Style	PJ2059-1
Connectors	N-Type Female N-Male - SMA Female Adapters (2 included)

+RoHS Compliant

The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

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.

KEY FEATURES

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 ± 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).





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50Ω 10 to 4200 MHz N-Type Female

ELECTRICAL SPECIFICATIONS AT 25°C, UNLESS OTHERWISE NOTED

Parameter	Condition (GHz)	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	10 - 4200	+28	+30	—	dBm
Noise Figure	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 Voltage	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.

ABSOLUTE 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.



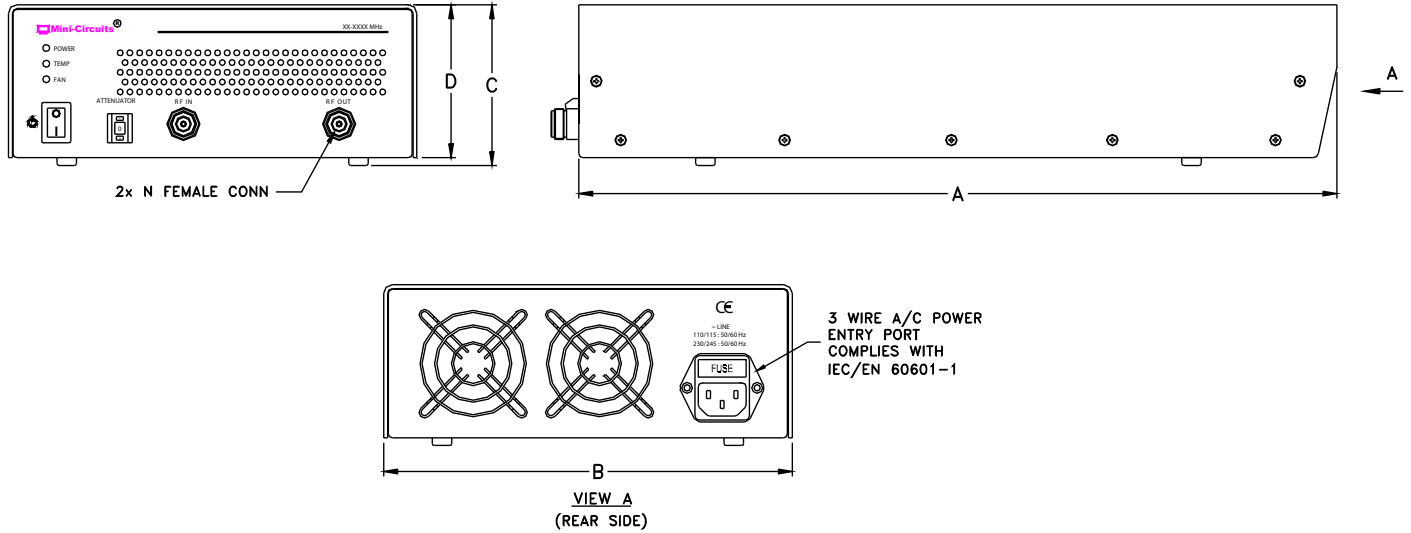


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RF Instrument Amplifier **TVA-11-422A+**

50Ω 10 to 4200 MHz N-Type Female

OUTLINE DRAWING



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





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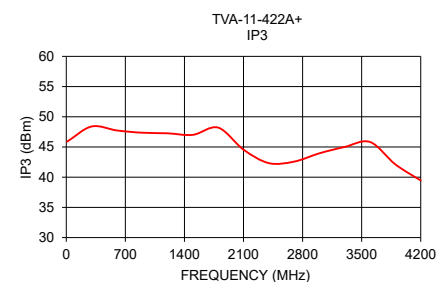
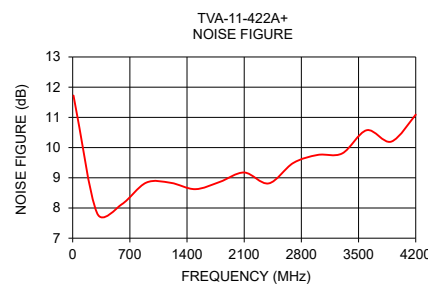
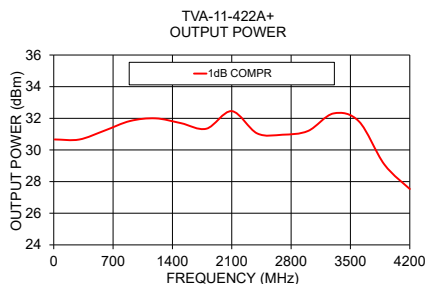
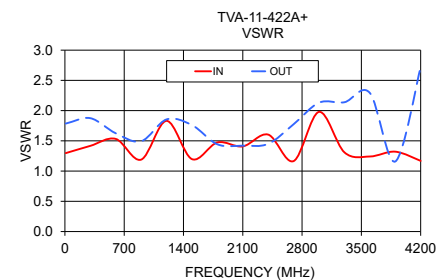
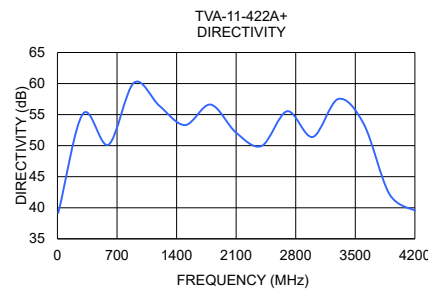
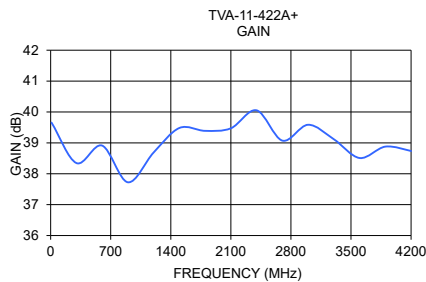
RF Instrument Amplifier **TVA-11-422A+**

Mini-Circuits

50Ω 10 to 4200 MHz N-Type Female

TYPICAL PERFORMANCE DATA AND CHARTS

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



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/terms/viewterm.html



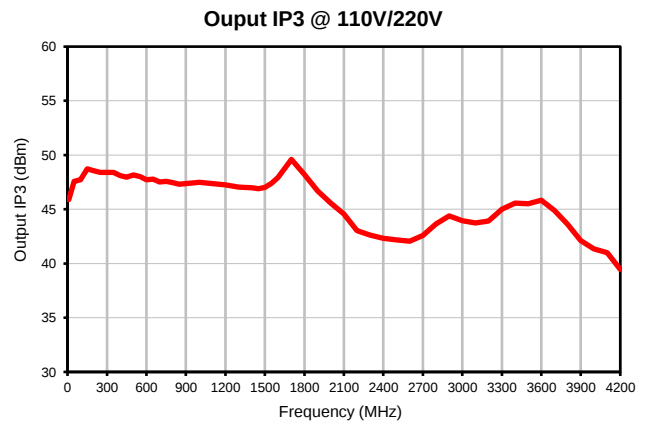
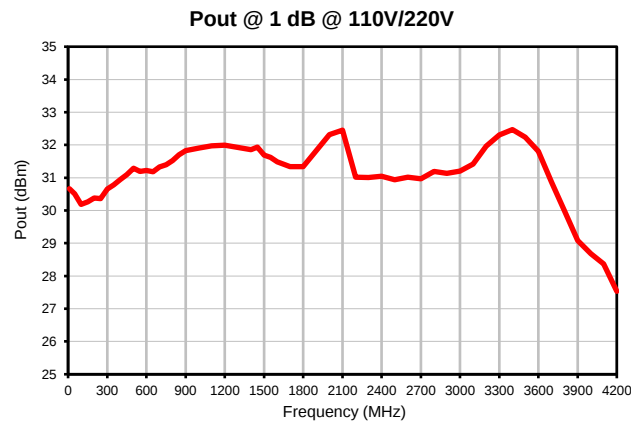
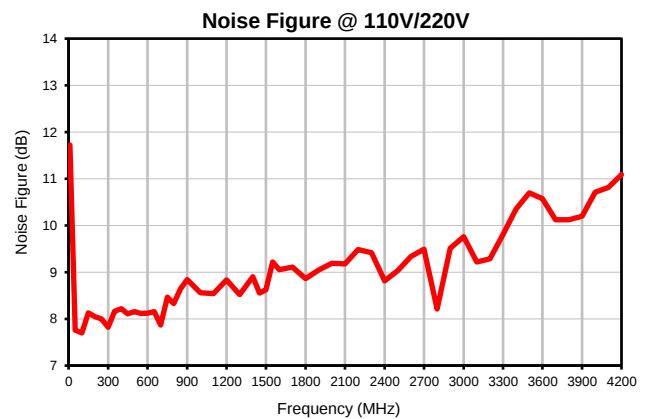
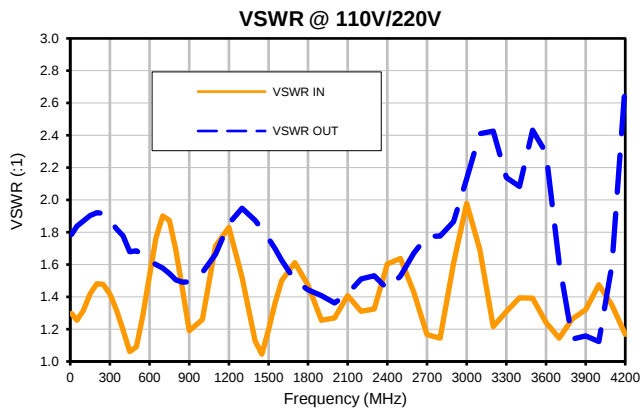
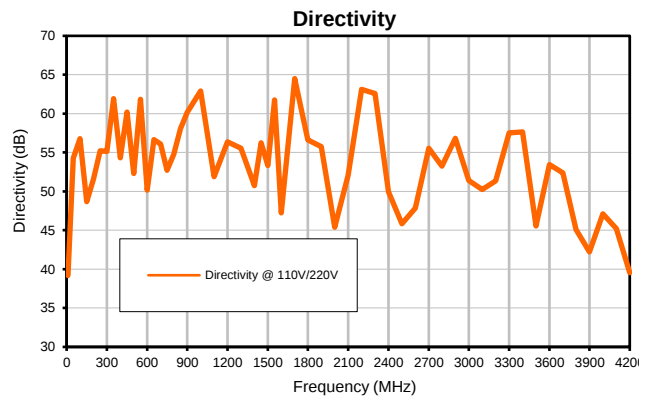
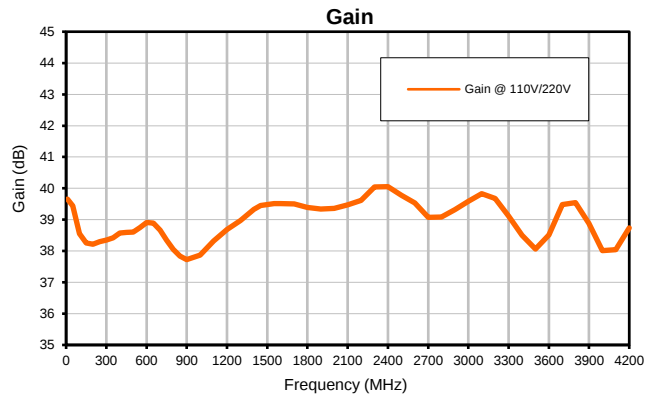
Typical Performance Data

FREQUENCY (MHz)	GAIN	DIRECTIVITY	VSWR (:1)		NOISE FIGURE	POUT @ 1 dB COMPRESSION	OUTPUT IP3
	(dB) 110V/220V	(dB) 110V/220V	IN 110V/220V	OUT 110V/220V	(dB) 110V/220V	(dBm) 110V/220V	(dBm) 110V/220V
10	39.66	39.19	1.30	1.79	11.72	30.66	45.88
50	39.44	54.29	1.26	1.84	7.76	30.51	47.59
100	38.56	56.78	1.32	1.87	7.70	30.18	47.72
150	38.25	48.68	1.42	1.90	8.13	30.26	48.72
200	38.22	51.55	1.48	1.92	8.05	30.39	48.54
250	38.30	55.24	1.48	1.92	8.00	30.36	48.39
300	38.35	55.14	1.42	1.87	7.82	30.66	48.39
350	38.42	61.92	1.32	1.82	8.17	30.79	48.41
400	38.58	54.31	1.20	1.78	8.22	30.95	48.11
450	38.59	60.19	1.06	1.68	8.11	31.09	47.95
500	38.61	52.28	1.09	1.69	8.16	31.29	48.16
550	38.74	61.84	1.29	1.66	8.12	31.19	48.02
600	38.91	50.16	1.53	1.63	8.12	31.22	47.73
650	38.89	56.66	1.77	1.60	8.15	31.18	47.78
700	38.66	56.10	1.90	1.58	7.87	31.33	47.53
750	38.35	52.73	1.87	1.54	8.46	31.39	47.59
800	38.06	54.78	1.69	1.50	8.33	31.52	47.46
850	37.84	58.04	1.45	1.49	8.64	31.70	47.32
900	37.72	60.14	1.19	1.49	8.84	31.83	47.36
1000	37.87	62.91	1.26	1.55	8.56	31.90	47.49
1100	38.32	51.90	1.71	1.66	8.54	31.98	47.38
1200	38.69	56.39	1.83	1.85	8.83	32.00	47.26
1300	38.97	55.56	1.52	1.95	8.52	31.92	47.05
1400	39.32	50.74	1.13	1.87	8.90	31.85	46.98
1450	39.45	56.26	1.05	1.82	8.56	31.94	46.90
1500	39.48	53.31	1.20	1.76	8.62	31.69	47.01
1550	39.52	61.76	1.36	1.70	9.22	31.62	47.40
1600	39.51	47.23	1.50	1.63	9.06	31.49	47.92
1700	39.51	64.51	1.61	1.50	9.11	31.33	49.60
1800	39.39	56.62	1.47	1.44	8.86	31.34	48.20
1900	39.34	55.74	1.26	1.41	9.04	31.83	46.70
2000	39.36	45.37	1.27	1.36	9.19	32.32	45.58
2100	39.47	52.08	1.41	1.42	9.17	32.45	44.56
2200	39.62	63.13	1.31	1.51	9.48	31.01	43.02
2300	40.04	62.60	1.32	1.53	9.42	31.01	42.61
2400	40.05	49.96	1.60	1.45	8.81	31.04	42.33
2500	39.78	45.83	1.64	1.53	9.03	30.93	42.18
2600	39.53	47.86	1.43	1.67	9.33	31.02	42.06
2700	39.07	55.54	1.17	1.77	9.49	30.96	42.57
2800	39.09	53.25	1.14	1.78	8.21	31.19	43.66
2900	39.32	56.84	1.61	1.87	9.51	31.14	44.38
3000	39.59	51.40	1.98	2.13	9.76	31.20	43.95
3100	39.83	50.26	1.69	2.41	9.22	31.41	43.75
3200	39.68	51.37	1.22	2.43	9.29	31.96	43.92
3300	39.12	57.52	1.31	2.14	9.81	32.31	45.01
3400	38.50	57.66	1.39	2.08	10.35	32.47	45.58
3500	38.06	45.54	1.39	2.43	10.70	32.24	45.50
3600	38.51	53.47	1.24	2.29	10.58	31.81	45.82
3700	39.48	52.36	1.14	1.61	10.12	30.87	44.89
3800	39.54	45.09	1.26	1.14	10.12	29.98	43.63
3900	38.88	42.22	1.32	1.16	10.20	29.08	42.11
4000	38.01	47.11	1.47	1.12	10.71	28.68	41.35
4100	38.05	45.22	1.35	1.60	10.81	28.37	40.99
4200	38.74	39.54	1.17	2.72	11.09	27.53	39.46

RF Instrument Amplifier

Typical Performance Curves

TVA-11-422A+



P.O. Box 350166, Brooklyn, New York 11235-0003 • (718) 934-4500 • Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site
The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com



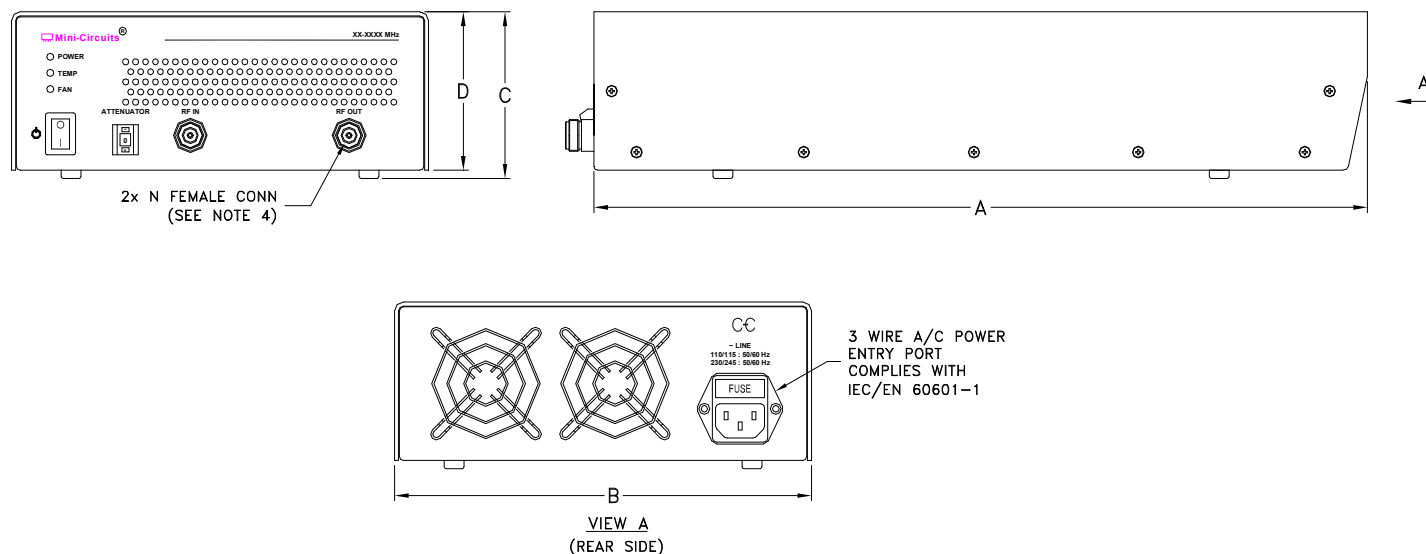
IF/RF MICROWAVE COMPONENTS



REV. OR
TVA-11-422A+
9/1/2015
Page 1 of 1

Outline Dimensions

PJ2059-1



CASE#	A	B	C	D	E	WT, GRAM
PJ2059-1	15.35 (390.0)	8.27 (210.0)	3.25 (82.6)	3.09 (78.5)	-- --	3550

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .03$; 3 Pl. $\pm .015$

Notes:

1. Case material: Aluminum alloy.
2. Finish: White paint.
3. Keep area adjacent to airvents clear to allow free air flow. Caution: Do not insert anything, especially conductors or fingers into case opening. Physical injury, shock or death may occur.
4. Connector shape may vary.



INTERNET <http://www.minicircuits.com>

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Mini-Circuits ISO 9001 & ISO 14001 Certified



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-0° to 55° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-40° to 70° C Ambient Environment	Individual Model Data Sheet