Coaxial

Wideband Amplifier

ZJL-153+

50Ω 5000 to 15000 MHz

The Big Deal

- Wide bandwidth, 5000 to 15000 MHz
- Medium output power, +18 dBm typ
- Single +5V supply voltage

CASE STYLE: BW459

Product Overview

The ZJL-153+ is a Class A, wide frequency range, ideal for a variety of lab applications as well as applications including communications, radar and more. The ruggedly-designed amplifier provides unconditional stability. Housed in a rugged aluminum alloy case measuring 1.0 x 1.07 x 0.61”, the unit features SMA connectors and filtered DC pin for the single +5V supply voltage.

Key Features

Feature	Advantages
Wideband, 5000 to 15000 MHz	Suitable for a broad range of wideband applications, including test setups, communications and defense applications.
Medium P1dB, +18 dBm typ.	Usable for medium power applications, good as buffer amplifier.
Single +5V supply voltage	Simplifier the power supply configuration
Unconditional stability	Provides reliable performance independent of input and load conditions.

Coaxial

Wideband Amplifier

ZJL-153+

50Ω 5000 to 15000 MHz

Features

- ultra wideband, 5000 to 15000 MHz
- compact rugged case,1.0”x1.07”x0.61” (including mounting bracket)

Generic photo used for illustration purposes only

CASE STYLE: BW459

Connectors	Model
SMA	ZJL-153+

+RoHS Compliant

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

Applications

- communications systems
- radar
- instrumentation
- laboratory use

Electrical Specifications at 25°C

Parameter	ZJL-153+			Units
	Min.	Typ.	Max.	
Frequency Range	5000	—	15000	MHz
Gain	10	13	—	dB
Gain Flatness	—	±1.5	—	dB
Output Power at 1dB compression	+16	+18	—	dBm
Noise Figure	—	6.0	—	dB
Output third order intercept point	—	+23	—	dBm
Input VSWR	—	1.7	—	:1
Output VSWR	—	1.7	—	:1
DC Supply Voltage	—	5	—	V
Supply Current			180	mA

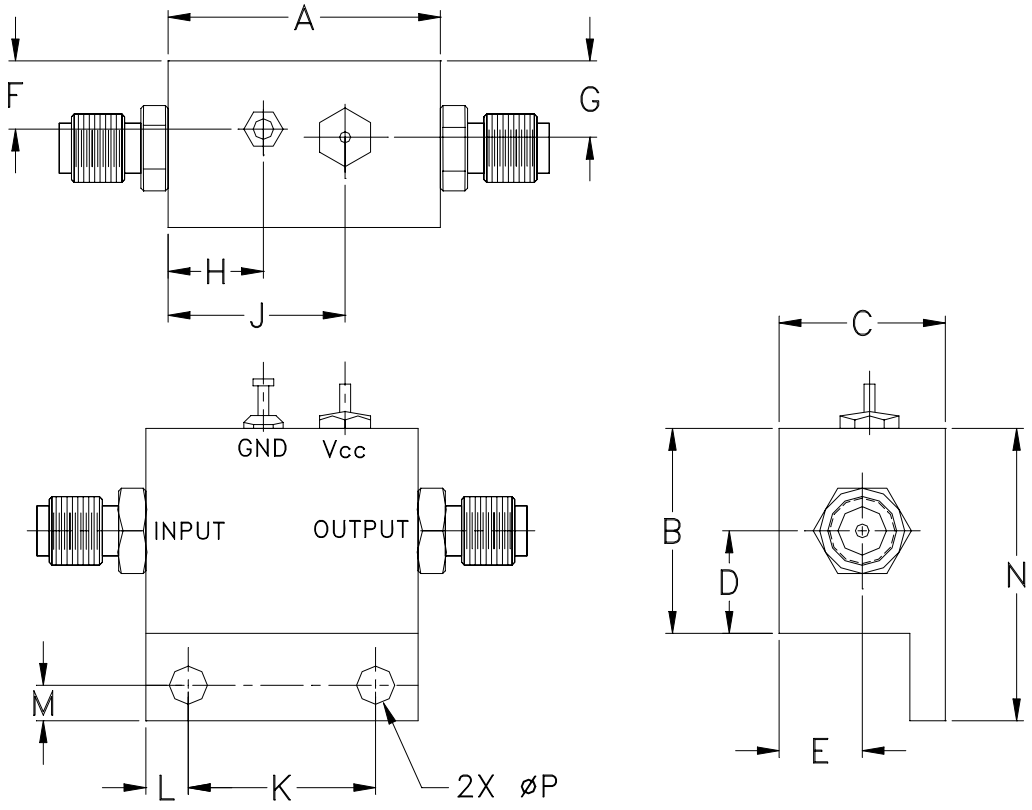
Open/Short load is not recommended, potentially can cause damage.
With no load derate max input power by 20 dB.

Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 50°C
Storage Temperature	-55°C to 100°C
DC Voltage	+5.5V max.
Input RF Power (no damage)	+13 dBm

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

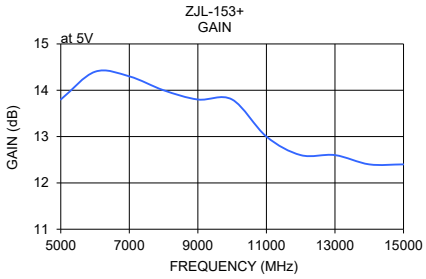
Outline Drawing

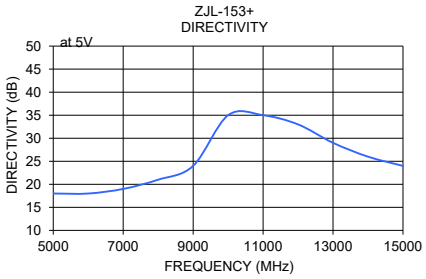


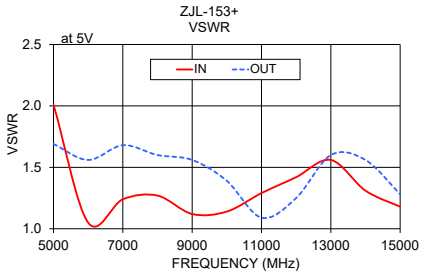
Outline Dimensions (inch / mm)

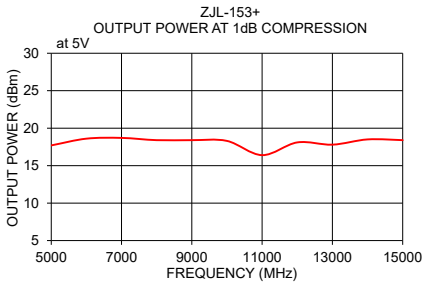
A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt
1.00	.75	.61	.38	.29	.25	.26	.35	.65	.688	.156	.13	1.07	.140	grams
25.40	19.05	15.49	9.65	7.37	6.35	6.60	8.89	16.51	17.48	3.96	3.30	27.18	3.56	25

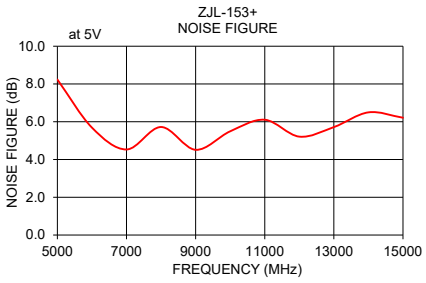
FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	NOISE FIGURE (dB)	OIP3 (dBm)
	5V	5V	IN	OUT	5V	5V	5V
5000	13.80	18.00	2.01	1.69	17.70	8.24	22.30
6000	14.40	18.00	1.05	1.56	18.60	5.69	23.20
7000	14.30	19.00	1.24	1.68	18.70	4.53	23.00
8000	14.00	21.00	1.27	1.60	18.40	5.72	23.10
9000	13.80	24.00	1.12	1.56	18.40	4.51	23.20
10000	13.80	35.00	1.14	1.39	18.30	5.49	22.60
11000	13.00	35.00	1.29	1.09	16.40	6.11	22.60
12000	12.60	33.00	1.42	1.25	18.10	5.21	22.20
13000	12.60	29.00	1.56	1.60	17.80	5.72	22.10
14000	12.40	26.00	1.31	1.56	18.50	6.50	22.10
15000	12.40	24.00	1.18	1.28	18.40	6.21	21.10

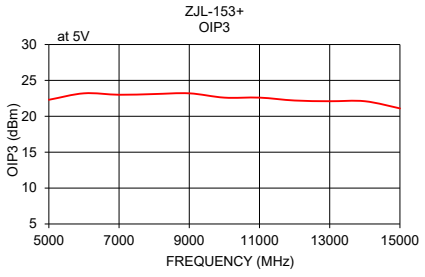












Additional Notes

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.

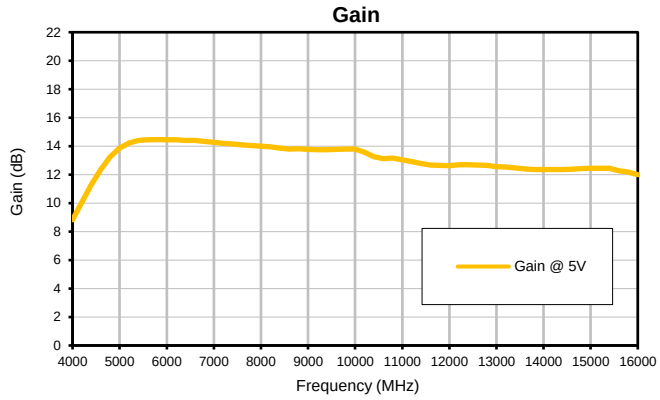
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

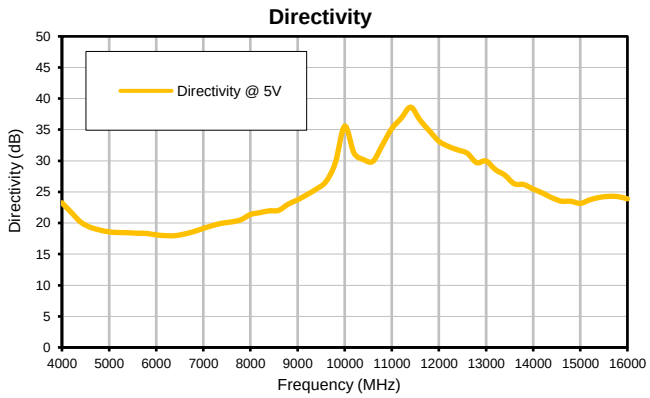
Wideband Amplifier ZJL-153+

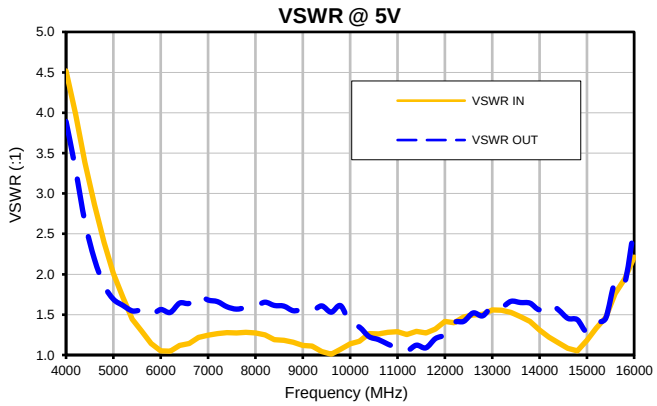
Typical Performance Data

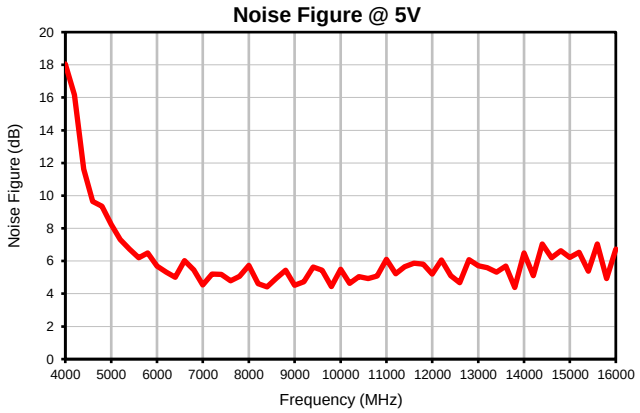
FREQUENCY (MHz)	GAIN (dB) 5V	DIRECTIVITY (dB) 5V	VSWR (:1) IN 5V	VSWR (:1) OUT 5V	NOISE FIGURE (dB) 5V	POUT @ 1 dB COMPRESSION (dBm) 5V	POUT @ 3 dB COMPRESSION (dBm) 5V	OUTPUT IP3 (dBm) 5V
4000	8.83	23.25	4.52	3.89	18.05	14.29	14.74	18.20
4200	10.08	21.69	3.98	3.30	16.15	15.55	16.09	19.56
4400	11.30	20.14	3.38	2.64	11.61	16.41	17.00	20.80
4600	12.39	19.33	2.86	2.19	9.64	17.03	17.64	21.56
4800	13.25	18.88	2.39	1.87	9.36	17.39	18.04	22.05
5000	13.85	18.58	2.01	1.69	8.24	17.68	18.36	22.31
5200	14.21	18.47	1.71	1.61	7.32	18.09	18.75	22.75
5400	14.40	18.44	1.45	1.55	6.72	18.17	18.93	22.73
5600	14.45	18.36	1.29	1.55	6.20	18.43	19.24	22.92
5800	14.46	18.33	1.14	1.50	6.50	18.46	19.35	22.99
6000	14.44	18.09	1.05	1.56	5.69	18.58	19.43	23.19
6200	14.44	17.97	1.05	1.53	5.31	18.37	19.34	23.21
6400	14.41	17.97	1.12	1.64	5.01	18.63	19.55	23.06
6600	14.39	18.24	1.14	1.64	6.02	18.71	19.65	23.12
6800	14.34	18.62	1.22	1.74	5.46	18.82	19.75	23.09
7000	14.27	19.13	1.24	1.68	4.53	18.70	19.67	23.03
7200	14.21	19.60	1.26	1.66	5.20	18.97	19.87	22.98
7400	14.15	19.98	1.28	1.60	5.18	18.77	19.70	23.00
7600	14.09	20.18	1.27	1.57	4.80	18.66	19.61	23.02
7800	14.05	20.53	1.28	1.59	5.07	18.41	19.52	23.19
8000	13.99	21.37	1.27	1.60	5.72	18.35	19.53	23.11
8200	13.95	21.67	1.25	1.65	4.62	18.14	19.43	23.18
8400	13.85	21.95	1.19	1.61	4.42	18.15	19.46	23.24
8600	13.79	22.04	1.18	1.61	4.94	18.11	19.39	23.26
8800	13.81	23.02	1.16	1.55	5.43	18.56	19.73	23.09
9000	13.78	23.73	1.12	1.56	4.51	18.41	19.58	23.22
9200	13.76	24.56	1.11	1.55	4.74	18.80	19.89	22.91
9400	13.75	25.46	1.04	1.61	5.64	19.18	20.10	22.81
9600	13.77	26.64	1.01	1.53	5.43	19.24	20.09	22.74
9800	13.80	29.64	1.07	1.61	4.43	18.65	19.55	22.74
10000	13.78	35.58	1.14	1.39	5.49	18.29	19.19	22.55
10200	13.57	31.22	1.17	1.34	4.64	17.74	18.71	22.66
10400	13.25	30.19	1.27	1.23	5.05	17.29	18.31	22.59
10600	13.13	29.93	1.26	1.19	4.92	16.87	17.92	22.76
10800	13.16	32.54	1.28	1.13	5.08	16.56	17.63	22.71
11000	13.03	35.18	1.29	1.09	6.11	16.41	17.52	22.58
11200	12.93	36.85	1.25	1.05	5.22	16.37	17.52	22.57
11400	12.77	38.62	1.29	1.12	5.65	16.82	18.02	22.59
11600	12.68	36.53	1.27	1.09	5.88	17.28	18.52	22.49
11800	12.65	34.80	1.32	1.20	5.81	17.90	19.14	22.20
12000	12.62	33.15	1.42	1.25	5.21	18.11	19.36	22.20
12200	12.70	32.32	1.40	1.40	6.07	18.60	19.71	22.23
12400	12.69	31.76	1.47	1.42	5.11	18.61	19.84	22.19
12600	12.68	31.22	1.50	1.52	4.68	18.39	19.64	22.24
12800	12.65	29.71	1.50	1.49	6.08	17.98	19.35	22.26
13000	12.56	29.98	1.56	1.60	5.72	17.75	19.13	22.10
13200	12.53	28.57	1.56	1.59	5.60	17.42	18.79	21.86
13400	12.46	27.69	1.53	1.66	5.33	16.97	18.28	21.95
13600	12.41	26.30	1.47	1.65	5.68	17.04	18.34	21.92
13800	12.36	26.19	1.41	1.64	4.38	17.86	19.07	21.81
14000	12.36	25.46	1.31	1.56	6.50	18.50	19.47	22.09
14200	12.35	24.81	1.22	1.63	5.10	18.40	19.45	20.71
14400	12.36	24.06	1.15	1.56	7.04	18.63	19.62	21.16
14600	12.38	23.51	1.08	1.45	6.19	18.86	19.79	21.17
14800	12.41	23.50	1.05	1.44	6.64	18.79	19.85	21.49
15000	12.45	23.16	1.18	1.28	6.21	18.40	19.61	21.14
15200	12.45	23.72	1.33	1.40	6.53	17.65	19.03	21.34
15400	12.43	24.11	1.47	1.46	5.37	16.98	18.38	21.21
15600	12.27	24.29	1.76	1.91	7.05	15.90	17.30	20.65
15800	12.17	24.24	1.94	1.89	4.93	15.55	16.94	20.31
16000	11.99	23.89	2.21	2.58	6.73	15.17	16.55	19.59

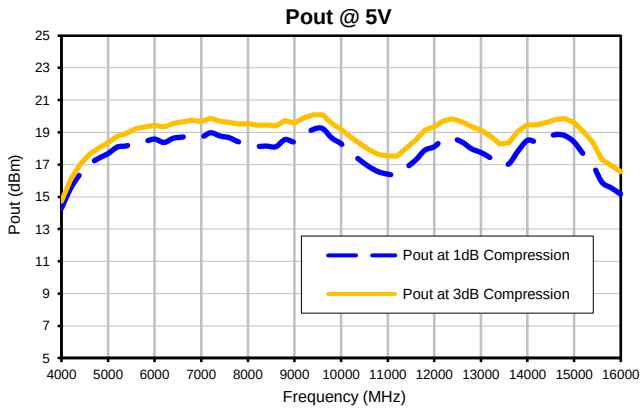
Typical Performance Curves

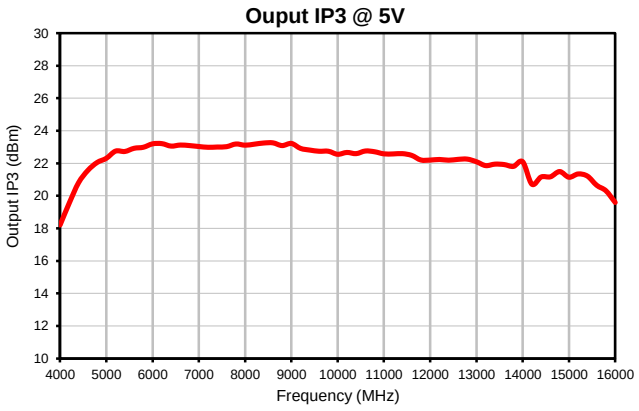








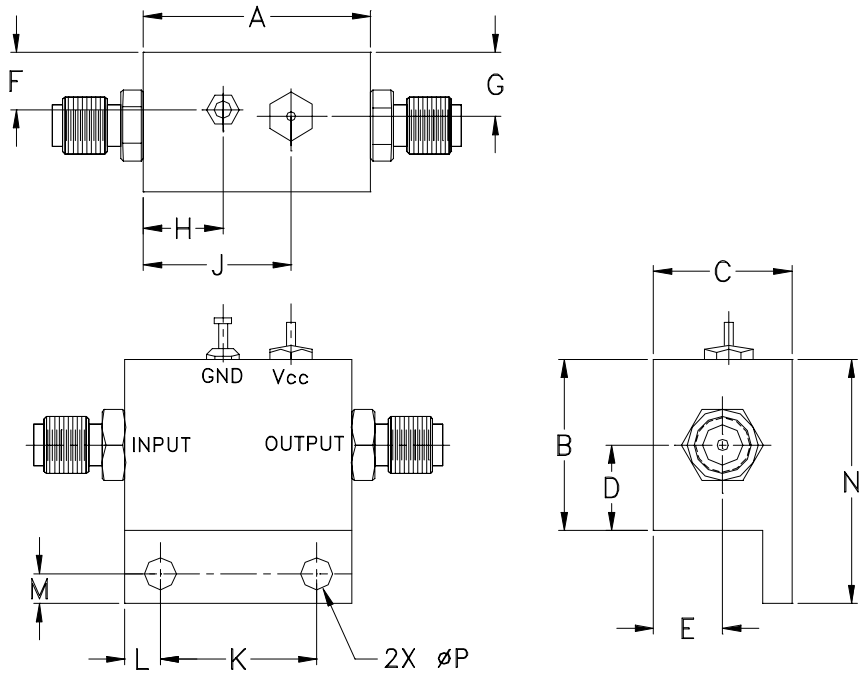




Case Style BW

BW459

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
BW459	1.00 (25.40)	.75 (19.05)	.61 (15.49)	.38 (9.65)	.29 (7.37)	.25 (6.35)	.26 (6.60)	.35 (8.89)	.65 (16.51)	.688 (17.48)	.156 (3.96)	.13 (3.30)	1.07 (27.18)

CASE#	P	WT. GRAMS
BW459	.140 (3.56)	25

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:

   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

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Mini-Circuits

Environmental Specifications ENV23T6

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	-40° to 75°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Stabilization Bake	(non-operating) 125°C, 24 hours	- - -
Burn-in at Elevated Temp.	(DC on) 160 hours at 85° C	MIL-STD-202, Method 108
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A, except 100°C

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