

# Coaxial Amplifier

## ZJL-4G+

50Ω Medium Power 20 to 4000 MHz

### Features

- wideband, 20 to 4000 MHz
- high IP3, +30.5 dBm typ.
- rugged, compact case, 1.07"x0.61" (including mounting bracket)
- protected by US Patent, 6,943,629

### Applications

- radar
- instrumentation
- lab use



Generic photo used for illustration purposes only

CASE STYLE: BW459  
 Connectors Model  
 SMA ZJL-4G+

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

### Amplifier Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		GAIN (dB)			MAXIMUM POWER (dBm)			DYNAMIC <sup>1</sup> RANGE		VSWR (:1) Typ.		DC POWER	
	f <sub>L</sub>	f <sub>U</sub>	Typ.	Min.	Flatness <sup>1</sup> Typ.	Min. Output (1 dB Compr.) L	U	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	Volt (V) Nom.	Current (mA) Max.
ZJL-4G+	20	4000	12.4	10.0	±0.7	+13.5	+10	+20	5.5	+30.5	1.4	1.6	12	75

1. Flatness specified to 0.75 fU, dynamic range at 2 GHz.

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

L= low range (f<sub>L</sub> to f<sub>U</sub>/2)

U= upper range (f<sub>U</sub>/2 to f<sub>U</sub>)

### Maximum Ratings

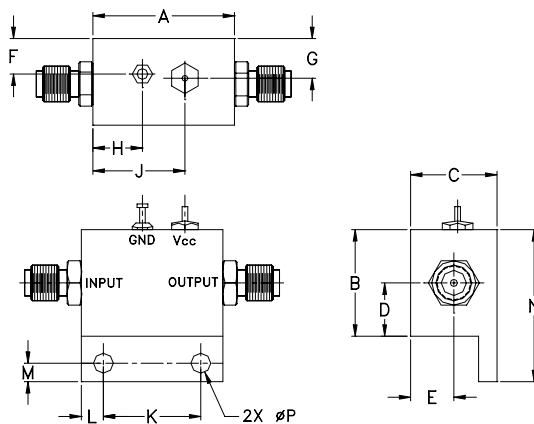
Operating Temperature -40°C to 75°C

Storage Temperature -55°C to 100°C

DC Voltage +13V Max.

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

### Outline Drawing



### Outline Dimensions (inch/mm)

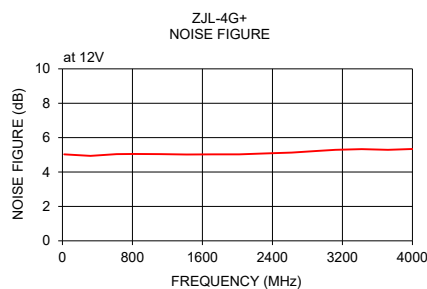
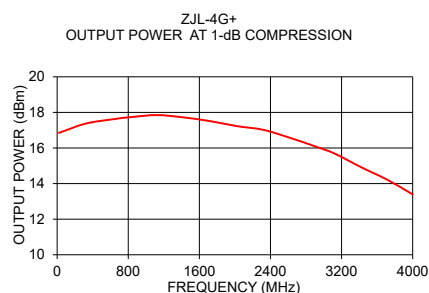
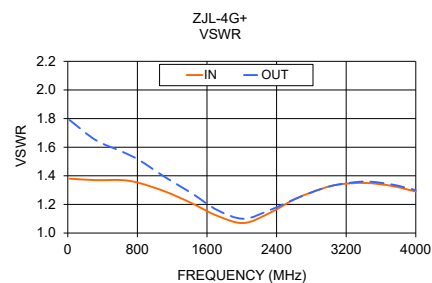
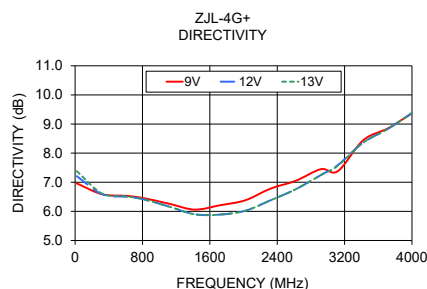
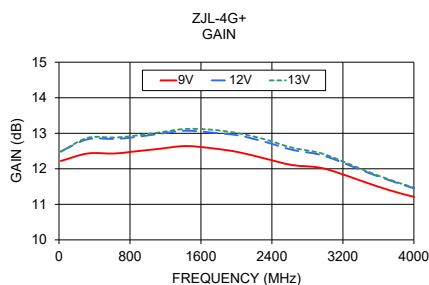
A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt
1.00	.75	.61	.38	.29	.25	.26	.35	.65	.688	.156	.13	1.07	.140	grams
25.40	19.05	15.49	9.65	7.37	6.35	6.60	8.89	16.51	17.48	3.96	3.30	27.18	3.56	25

### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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)



FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	9V	12V	13V	9V	12V	13V	IN	OUT		
20.00	12.94	13.02	13.04	7.24	7.51	7.56	1.23	1.44	4.39	16.34
300.00	12.95	13.11	13.16	7.11	7.23	7.25	1.18	1.35	4.50	16.58
600.00	12.85	13.02	13.05	7.19	7.31	7.32	1.16	1.34	4.53	16.62
900.00	12.71	12.87	12.90	7.38	7.51	7.54	1.15	1.31	4.43	16.53
1200.00	12.63	12.77	12.80	7.46	7.61	7.63	1.14	1.31	4.41	16.46
1500.00	12.47	12.60	12.64	7.70	7.85	7.88	1.14	1.30	4.39	16.26
1800.00	12.31	12.46	12.49	7.94	8.07	8.08	1.13	1.29	4.38	15.98
2100.00	12.15	12.31	12.34	8.20	8.31	8.32	1.14	1.28	4.54	15.53
2400.00	11.98	12.16	12.19	8.50	8.53	8.55	1.14	1.27	4.45	14.87
2700.00	11.81	12.01	12.04	8.80	8.80	8.82	1.14	1.26	4.47	14.41
3000.00	11.63	11.85	11.89	9.17	9.11	9.11	1.15	1.26	4.60	13.89
3200.00	11.51	11.74	11.77	9.44	9.35	9.38	1.16	1.26	4.59	13.29
3400.00	11.40	11.65	11.68	9.69	9.56	9.57	1.18	1.27	4.57	12.79
3700.00	11.24	11.51	11.54	10.08	9.92	9.93	1.21	1.28	4.57	12.33
4000.00	11.08	11.36	11.39	10.51	10.29	10.32	1.24	1.30	4.68	11.91



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# Amplifier

# ZJL-4G+

## Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 12V	DIRECTIVITY (dB) 12V	VSWR IN (:1) 12V	VSWR OUT (:1) 12V	NOISE FIGURE (dB) 12V	Pout at 1dB Comp. (dBm) 12V
20.0	12.49	7.21	1.38	1.79	5.03	16.85
320.0	12.83	6.59	1.37	1.65	4.94	17.37
620.0	12.84	6.50	1.37	1.57	5.04	17.61
820.0	12.88	6.41	1.35	1.51	5.05	17.73
1120.0	12.98	6.16	1.29	1.39	5.04	17.85
1420.0	13.07	5.90	1.21	1.28	5.02	17.72
1720.0	13.02	5.89	1.12	1.16	5.03	17.51
2020.0	12.94	6.02	1.07	1.10	5.03	17.23
2320.0	12.76	6.38	1.14	1.16	5.08	17.02
2620.0	12.54	6.76	1.24	1.24	5.13	16.57
2920.0	12.41	7.25	1.31	1.31	5.23	16.06
3120.0	12.25	7.59	1.34	1.34	5.29	15.69
3420.0	11.95	8.36	1.35	1.36	5.33	14.92
3720.0	11.68	8.84	1.33	1.34	5.29	14.20
4000.0	11.45	9.38	1.29	1.30	5.34	13.39

REV. X1  
ZJL-4G+  
060914  
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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED RoHS compliant

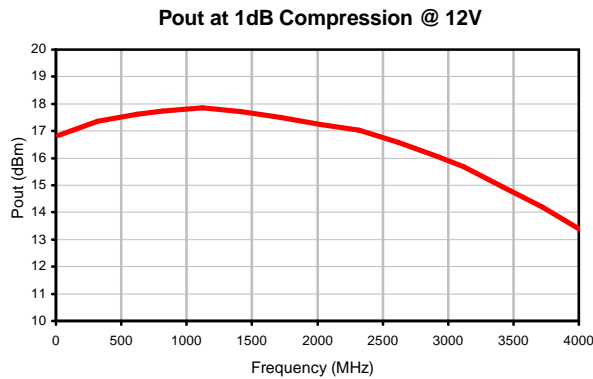
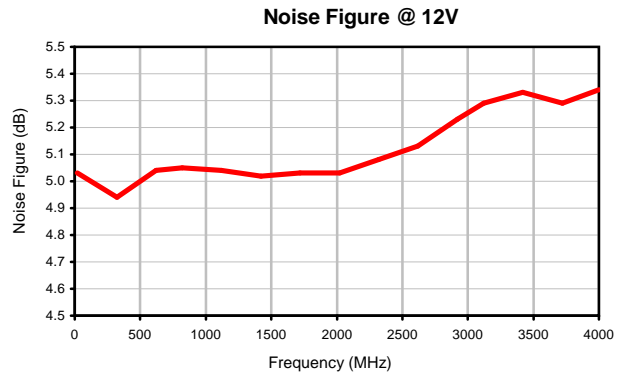
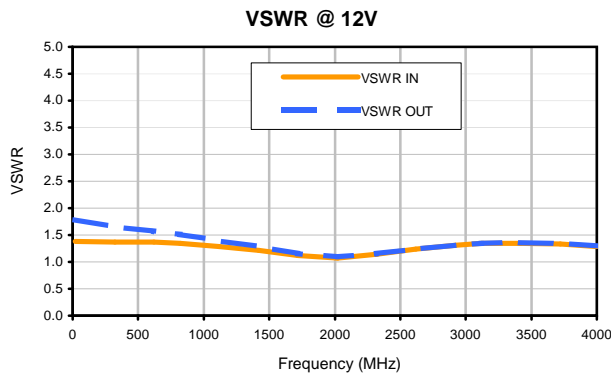
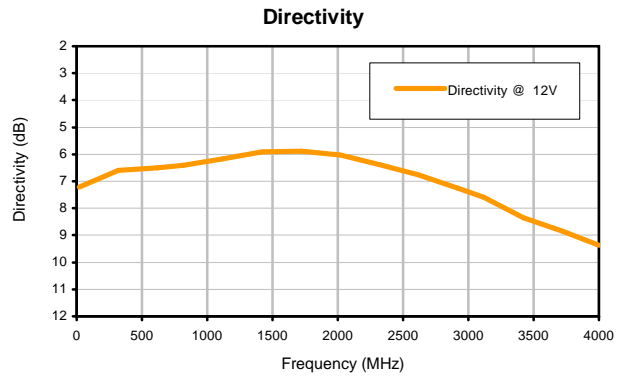
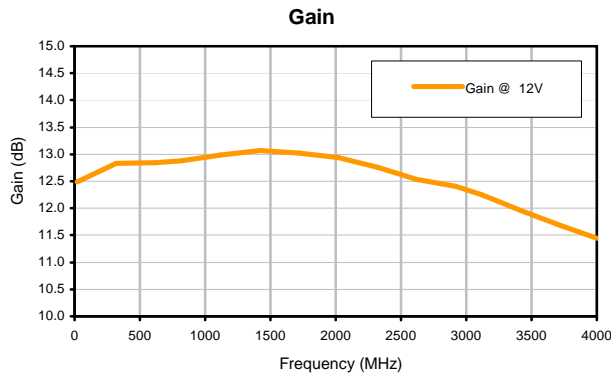
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661



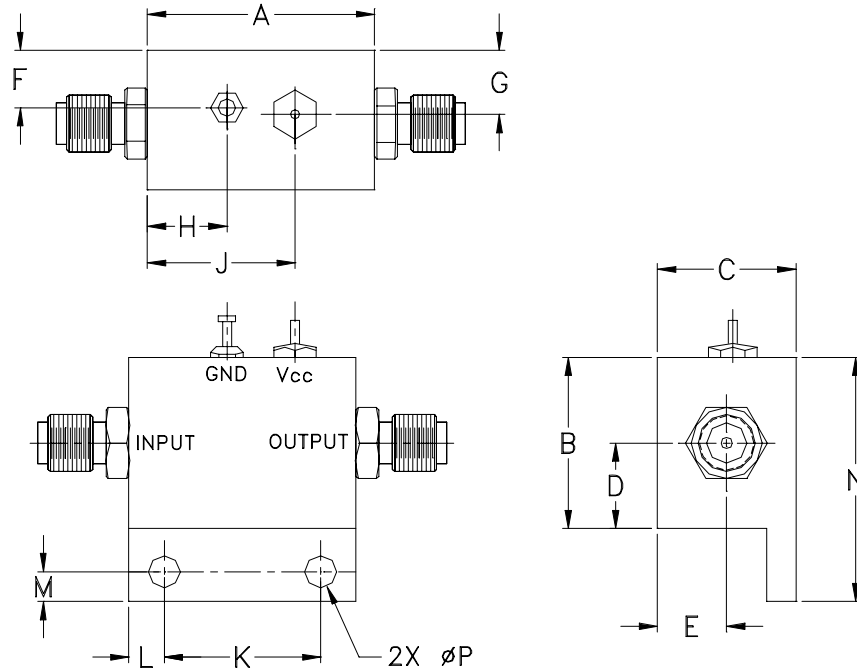
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



## Typical Performance Curves



### 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.  $\pm .03$ ; 3 Pl.  $\pm .015$

#### Notes:

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

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



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