

Coaxial Amplifier

ZJL-3G+

50Ω Low Power 20 to 3000 MHz

Features

- wideband, 20 to 3000 MHz
- compact rugged case, 1.07"x0.61"(including mounting bracket)
- low noise figure, 3.8 dB typ.
- protected by US Patent, 6,943,629

Applications

- communication systems
- radar
- instrumentation
- laboratory use



Generic photo used for illustration purposes only

CASE STYLE: BW459
Connectors Model
SMA ZJL-3G+

+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 RANGE | | VSWR (:1) Typ. | | DC POWER | |
|-----------|-----------------|-------|-----------|------|----------------------------|----------------------|----|-------------------|---------------|----------------|----------------|-----|---------------|-------------------|
| | f_L | f_U | Typ. | Min. | Flatness ¹ Typ. | Output (1 dB Compr.) | | Input (no damage) | NF (dB) Typ. | IP3 (dBm) Typ. | In | Out | Volt (V) Nom. | Current (mA) Max. |
| ZJL-3G+ | 20 | 3000 | 19 | 14 | ±2.2 | +8 | +8 | +13 | 3.8 | +22 | 1.4 | 1.6 | 12 | 45 |

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_L to $f_U/2$)

U= upper range ($f_U/2$ to f_U)

Maximum Ratings

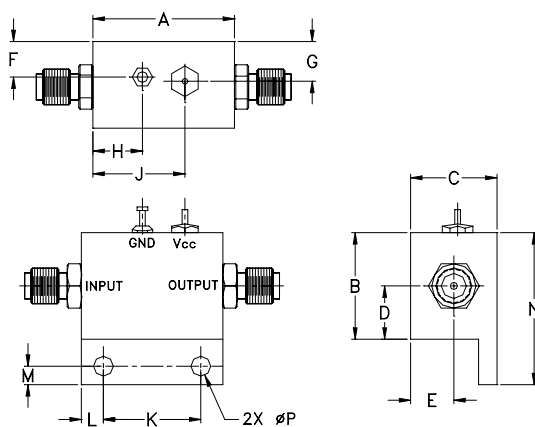
Operating Temperature -40°C to 75°C

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

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



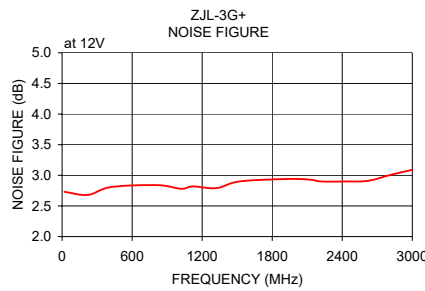
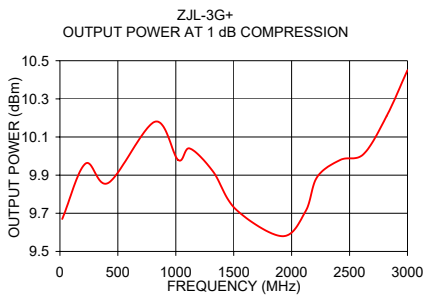
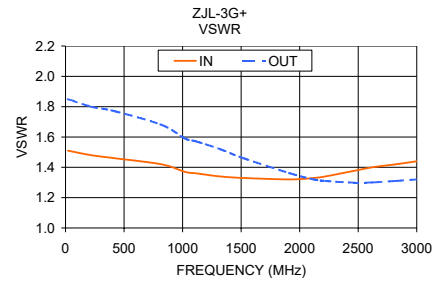
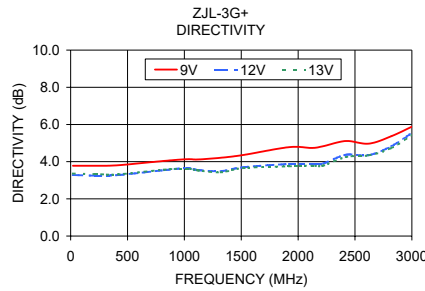
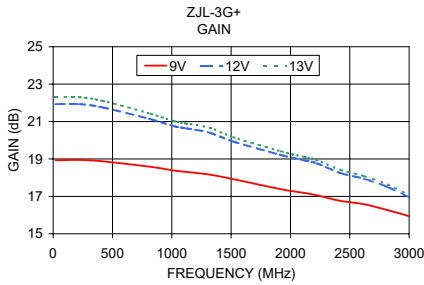
www.minicircuits.com P.O. Box 35166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. C
M175652
ZJL-3G+
190801

Typical Performance Data/Curves

ZJL-3G+

| 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 | 18.93 | 21.93 | 22.31 | 3.78 | 3.28 | 3.36 | 1.51 | 1.85 | 2.73 | 9.67 |
| 220.00 | 18.95 | 21.93 | 22.30 | 3.78 | 3.25 | 3.33 | 1.48 | 1.80 | 2.68 | 9.96 |
| 420.00 | 18.87 | 21.75 | 22.10 | 3.81 | 3.28 | 3.32 | 1.46 | 1.77 | 2.81 | 9.86 |
| 820.00 | 18.58 | 21.13 | 21.42 | 4.04 | 3.54 | 3.57 | 1.42 | 1.68 | 2.84 | 10.18 |
| 1020.00 | 18.38 | 20.75 | 21.02 | 4.13 | 3.65 | 3.63 | 1.37 | 1.59 | 2.78 | 9.98 |
| 1120.00 | 18.31 | 20.64 | 20.90 | 4.12 | 3.55 | 3.53 | 1.36 | 1.57 | 2.82 | 10.04 |
| 1320.00 | 18.16 | 20.40 | 20.67 | 4.21 | 3.49 | 3.43 | 1.34 | 1.52 | 2.79 | 9.92 |
| 1520.00 | 17.92 | 19.93 | 20.16 | 4.36 | 3.70 | 3.66 | 1.33 | 1.46 | 2.90 | 9.72 |
| 1920.00 | 17.38 | 19.21 | 19.41 | 4.78 | 3.87 | 3.75 | 1.32 | 1.36 | 2.94 | 9.58 |
| 2120.00 | 17.18 | 18.92 | 19.11 | 4.74 | 3.86 | 3.79 | 1.33 | 1.32 | 2.93 | 9.71 |
| 2220.00 | 17.06 | 18.77 | 18.95 | 4.83 | 3.90 | 3.79 | 1.34 | 1.31 | 2.90 | 9.89 |
| 2420.00 | 16.76 | 18.25 | 18.42 | 5.11 | 4.37 | 4.25 | 1.37 | 1.30 | 2.90 | 9.98 |
| 2620.00 | 16.58 | 17.94 | 18.08 | 4.97 | 4.35 | 4.34 | 1.40 | 1.30 | 2.91 | 10.01 |
| 2820.00 | 16.26 | 17.50 | 17.63 | 5.37 | 4.83 | 4.73 | 1.42 | 1.31 | 3.01 | 10.21 |
| 3000.00 | 15.94 | 16.95 | 17.06 | 5.88 | 5.54 | 5.45 | 1.44 | 1.32 | 3.09 | 10.45 |



Notes

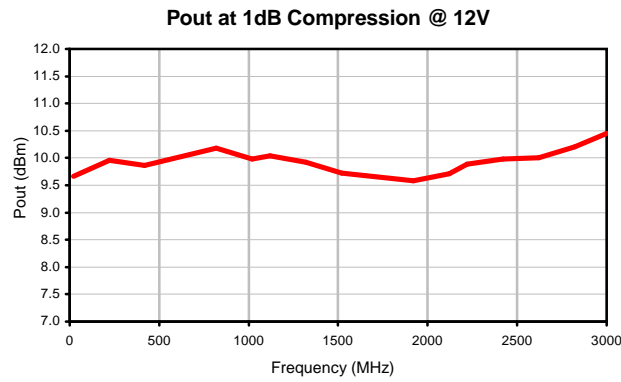
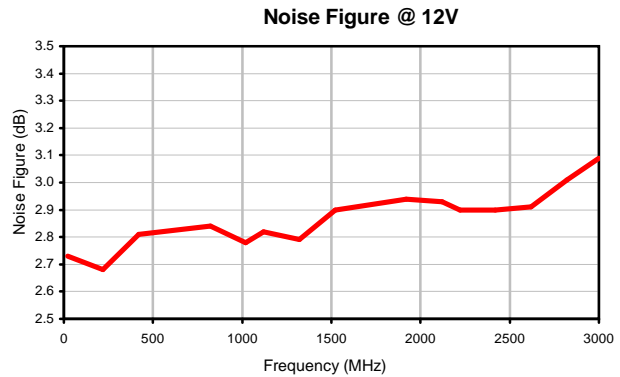
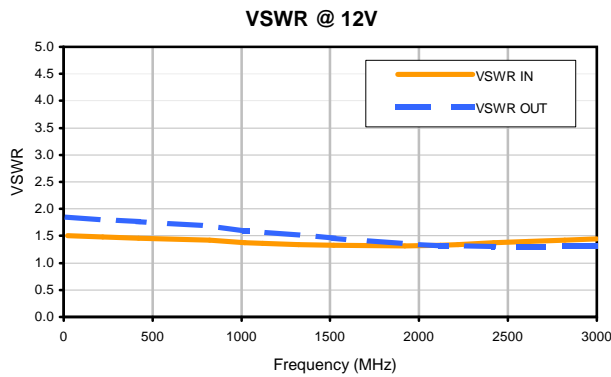
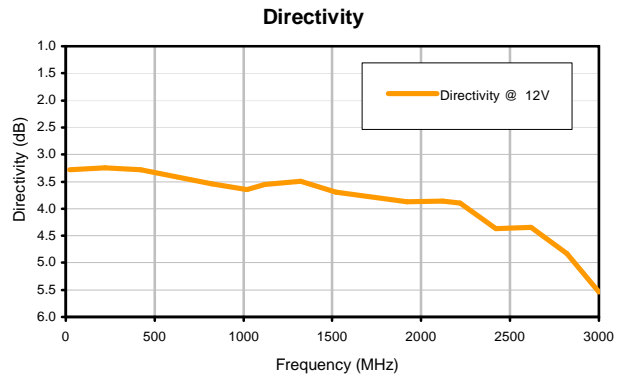
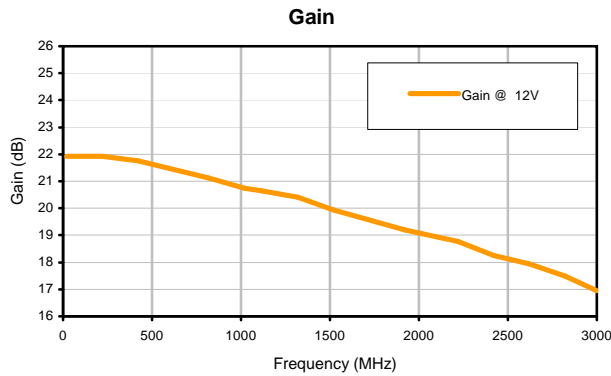
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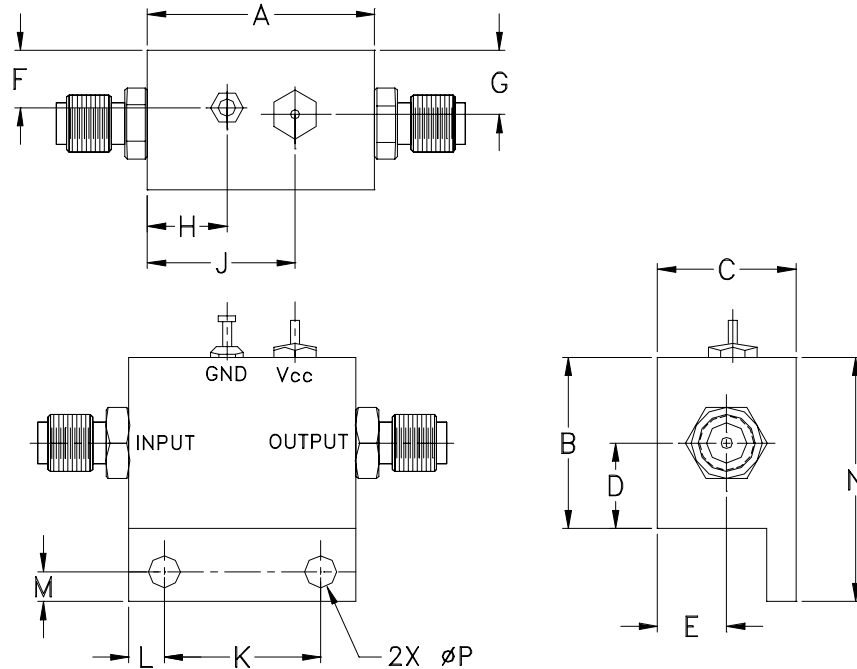
Typical Performance Data

| 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 | 21.93 | 3.28 | 1.51 | 1.85 | 2.73 | 9.67 |
| 220.0 | 21.93 | 3.25 | 1.48 | 1.80 | 2.68 | 9.96 |
| 420.0 | 21.75 | 3.28 | 1.46 | 1.77 | 2.81 | 9.86 |
| 820.0 | 21.13 | 3.54 | 1.42 | 1.68 | 2.84 | 10.18 |
| 1020.0 | 20.75 | 3.65 | 1.37 | 1.59 | 2.78 | 9.98 |
| 1120.0 | 20.64 | 3.55 | 1.36 | 1.57 | 2.82 | 10.04 |
| 1320.0 | 20.40 | 3.49 | 1.34 | 1.52 | 2.79 | 9.92 |
| 1520.0 | 19.93 | 3.70 | 1.33 | 1.46 | 2.90 | 9.72 |
| 1920.0 | 19.21 | 3.87 | 1.32 | 1.36 | 2.94 | 9.58 |
| 2120.0 | 18.92 | 3.86 | 1.33 | 1.32 | 2.93 | 9.71 |
| 2220.0 | 18.77 | 3.90 | 1.34 | 1.31 | 2.90 | 9.89 |
| 2420.0 | 18.25 | 4.37 | 1.37 | 1.30 | 2.90 | 9.98 |
| 2620.0 | 17.94 | 4.35 | 1.40 | 1.30 | 2.91 | 10.01 |
| 2820.0 | 17.50 | 4.83 | 1.42 | 1.31 | 3.01 | 10.21 |
| 3000.0 | 16.95 | 5.54 | 1.44 | 1.32 | 3.09 | 10.45 |

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 |