COAXIAL

Medium Power Amplifier ZKL-1R5+

50Ω 10 to 1500 MHz SMA-Female

KEY FEATURES

- Wideband, 10 to 1500 MHz
- High IP3, +31 dBm typ.
- Low noise, 3 dB typ.
- High gain, 40 dB typ.
- Protected by US Patent, 6,943,629

Generic photo used for illustration purposes only

APPLICATIONS

- Communication systems
- Cellular
- Satellite distribution
- GSM/ISM

PRODUCT OVERVIEW

Mini-Circuits' MODEL-ZKL-1R5+ is a medium power, high gain amplifier that can be used for many different applications including cellular, communications, GSM/ISM, and GPS signal amplification

ELECTRICAL SPECIFICATIONS AT +25°, V_{CC} = +12 VDC

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		10		1500	MHz
Gain	10-1500	36	40		dB
Gain Flatness	10-1500	+15		±1.2	dB
Output Power at 1 dB Compression (P1dB)	10-1500				dBm
Input/ Output Return Loss	10-1500		15.5 / 12.7		dB
Output Third Order Intercept Point (OIP3)	10-1500		+31		dBm
Noise Figure	10-1500		3.0		dB
DC Supply Voltage (Vcc)			+12		V
DC Current				115	mA

ABSOLUTE MAXIMUM RATINGS[1]

Parameter	Ratings
Operating Temperature	-40° C to +75° C
Storage Temperature	-55° C to +100° C
RF Input Power[2] (CW)	+13 dBm
DC Operating Voltage (V_{CC})	+13 VDC

1. Continuous operation is not recommended at these extremes. Permanent damage may occur if any of these limits are exceeded.
2. Specified under matched load to 50 ohms.
3. Open load is not recommended ,potentially damage the unit
4. With no load derate maximum input power by 20dB

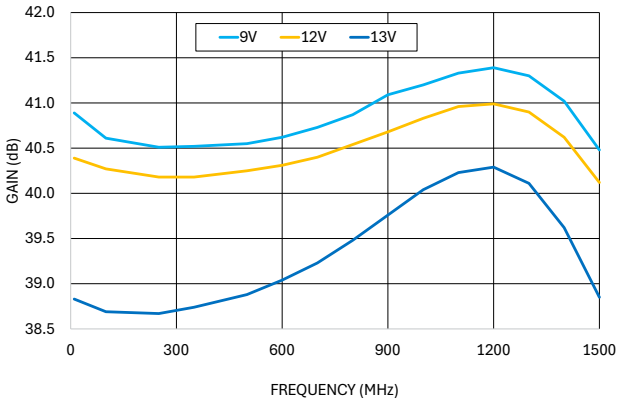
REV. E
ECO-027862
ZKL-1R5+
MCL NY
260122

Medium Power Amplifier ZKL-1R5+

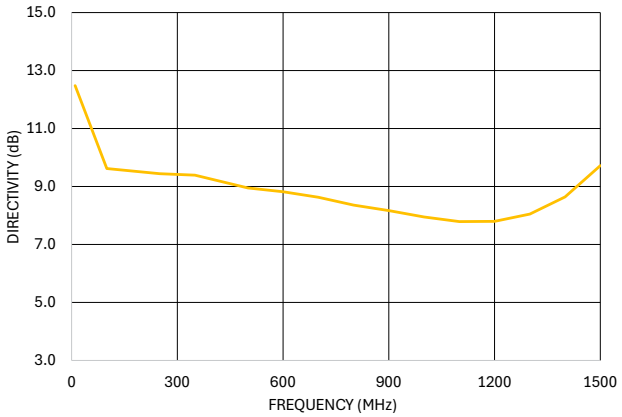
50Ω 10 to 1500 MHz SMA-Female

TYPICAL PERFORMANCE GRAPHS

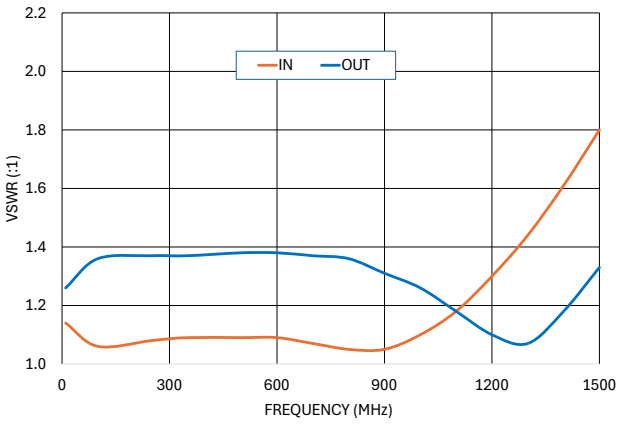
GAIN



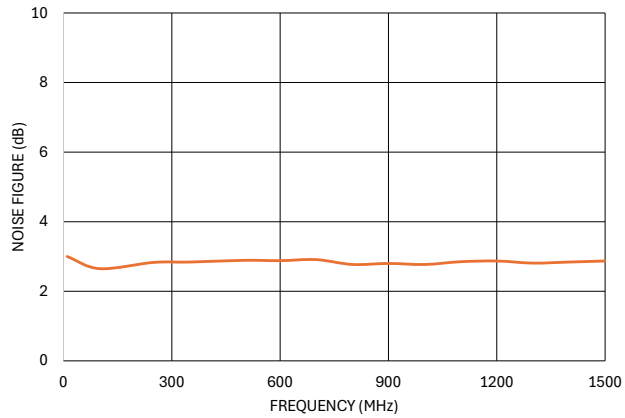
DIRECTIVITY



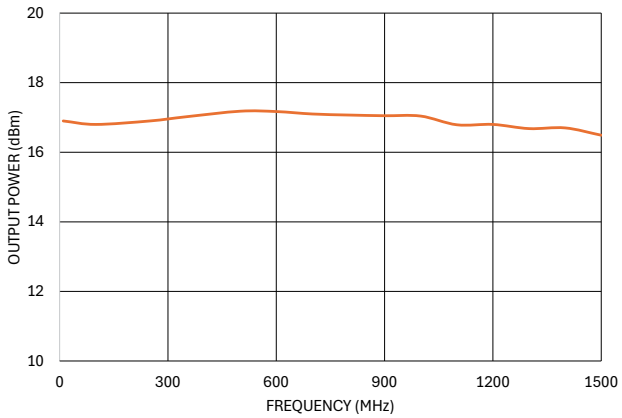
VSWR



NOISE FIGURE



OUTPUT POWER AT 1 dB COMPRESSION



COAXIAL

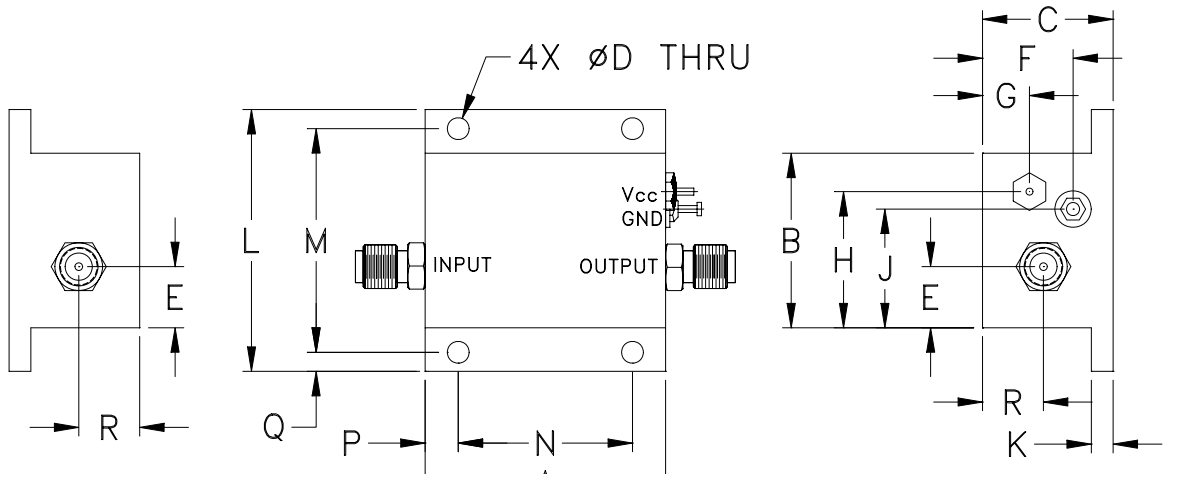
Medium Power Amplifier ZKL-1R5+

50Ω 10 to 1500 MHz SMA-Female

COAXIAL CONNECTIONS

Description	RF INPUT PORT	RF OUTPUT PORT
Connector Type	SMA-Female	SMA-Female

CASE STYLE DRAWING



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	wt
1.38	1.00	.75	.125	.35	.52	.27	.76	.66	.125	1.50	1.281	1.000	.19	.11	.35	grams
35.05	25.40	19.05	3.18	8.89	13.21	6.86	19.30	16.76	3.18	38.10	32.54	25.40	4.83	2.79	8.89	40

PRODUCT MARKING*: ZKL-1R5+

*Marking may contain other features or characters for internal lot control.

Medium Power Amplifier ZKL-1R5+

50Ω 10 to 1500 MHz SMA-Female

ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD.

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
RoHS Status	Compliant
Environmental Ratings	ENV23T6

ORDERING INFORMATION

Model No. Links	ZKL-1R5+
Case Style	BY493
Connector	SMA-Female

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

Amplifier ZKL-1R5+

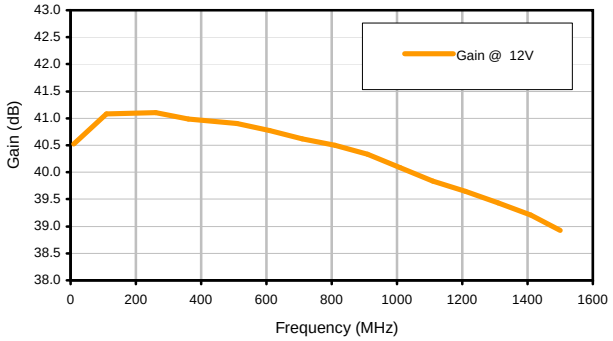
Typical Performance Data

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
10.0	40.52	9.13	1.37	1.29	3.01	17.61
110.0	41.08	7.84	1.33	1.19	2.83	18.26
260.0	41.10	7.64	1.31	1.23	2.88	18.39
360.0	40.98	7.44	1.30	1.31	2.94	18.49
510.0	40.90	7.49	1.31	1.44	2.97	18.63
610.0	40.77	7.27	1.31	1.48	3.04	18.76
710.0	40.62	7.39	1.32	1.57	3.05	18.85
810.0	40.50	7.27	1.34	1.61	3.03	18.82
910.0	40.33	7.36	1.35	1.66	3.01	18.84
1010.0	40.08	7.47	1.35	1.69	3.01	18.82
1110.0	39.84	7.32	1.39	1.66	2.99	18.78
1210.0	39.65	7.38	1.41	1.66	2.98	18.76
1310.0	39.43	7.45	1.43	1.58	2.99	18.71
1410.0	39.21	7.08	1.48	1.52	3.02	18.57
1500.0	38.93	7.23	1.49	1.46	3.06	18.66

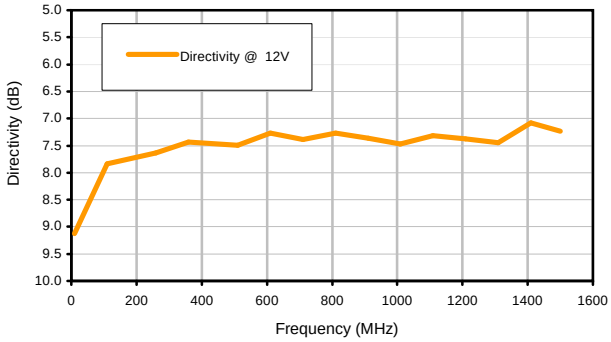
Mini-Circuits®
IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see minicircuits.com

Typical Performance Curves

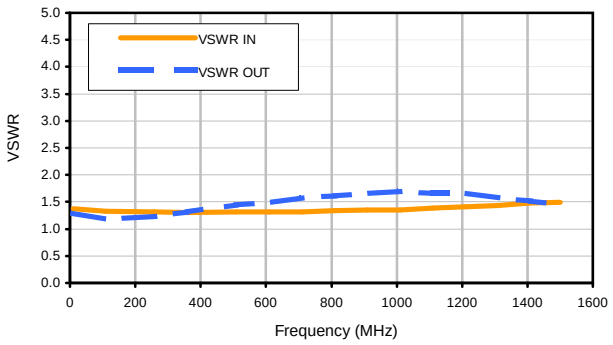
Gain



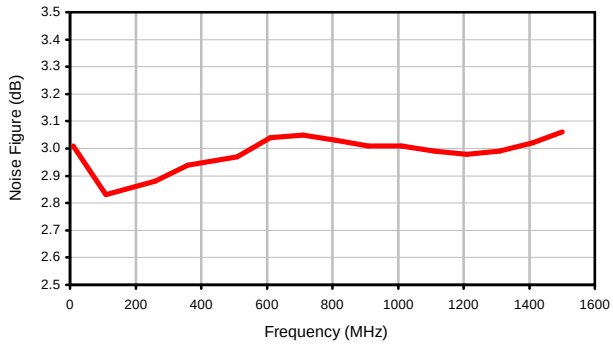
Directivity



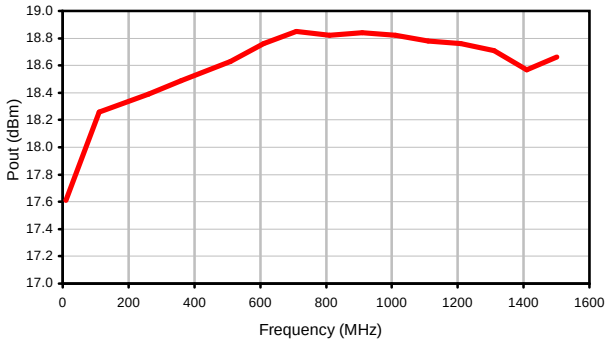
VSWR @ 12V



Noise Figure @ 12V



Pout at 1dB Compression @ 12V

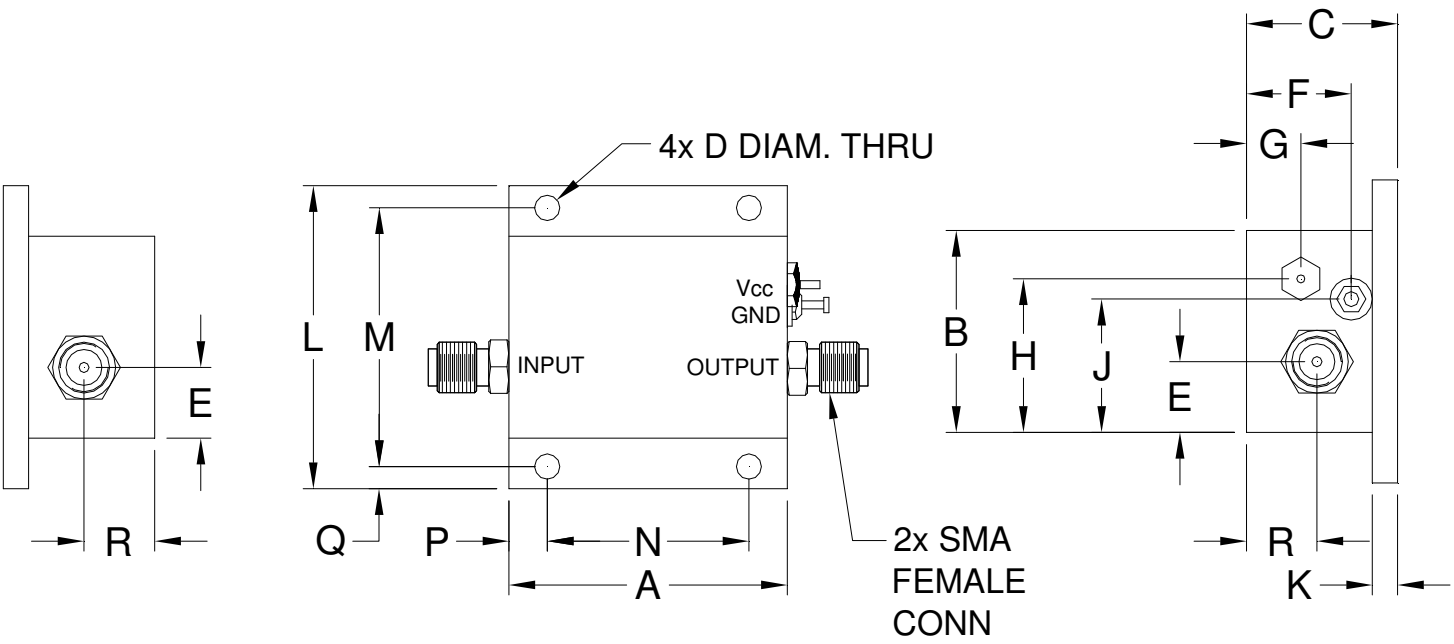


Mini-Circuits®
IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see minicircuits.com

Case Style BY

Outline Dimensions

BY493



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
BY493	1.38 (35.05)	1.00 (25.40)	.75 (19.05)	.125 (3.18)	.35 (8.89)	.52 (13.21)	.27 (6.86)	.76 (19.30)	.66 (16.76)	.125 (3.18)	1.50 (38.10)	1.281 (32.54)	1.000 (25.40)

CASE#	P	Q	R	WT. GRAMS
BY493	.19 (4.83)	.11 (2.79)	.35 (8.89)	40

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish: Clear chemical conversion coating, non-chrome or trivalent chrome based.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits

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

This document and its contents are the property of Mini-Circuits.