Coaxial

Amplifier

ZFL-500+

50Ω Low Power 0.05 to 500 MHz

SMA version shown

Generic photo used for illustration purposes only

CASE STYLE: Y460

Connectors	Model
SMA	ZFL-500+
BNC	ZFL-500-BNC+
BRACKET (OPTION "B")	

+RoHS Compliant

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

Features

- wideband, 0.05 to 500 MHz
- rugged, shielded case
- low noise, 4.2 dB typ.
- protected by US Patent, 6,943,629

Applications

- instrumentation
- lab use
- VHF/UHF

Amplifier Electrical Specifications

MODEL NO.	FREQUENCY (MHz)		GAIN (dB)			MAXIMUM POWER (dBm)		DYNAMIC RANGE		VSWR* (:1) Typ.		DC POWER	
	f_L	f_U	Min.	Typ.	Flatness Max.	Output (1 dB Compr.) Min.	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	Volt (V) Nom.	Current (mA) Max.
ZFL-500+	0.05	500	20	25	±1.0	+9	+5	4.2	+25	1.3	1.3	15	80

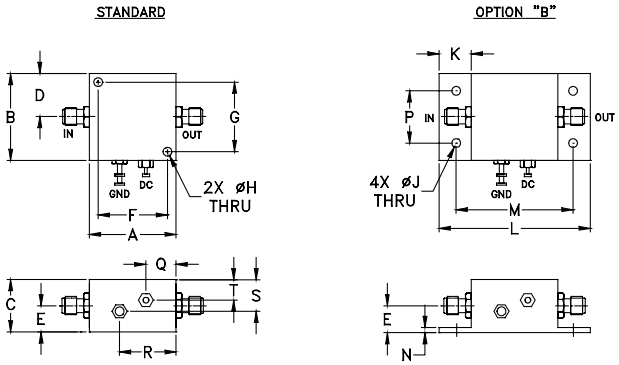
Open load is not recommended, potentially can cause damage.
With no load derate max input power by 20 dB
*VSWR may increase to 1.8 below 0.1 MHz

Maximum Ratings

Operating Temperature	-20°C to 71°C
Storage Temperature	-55°C to 100°C
DC Voltage	+17V Max.

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

Outline Drawing



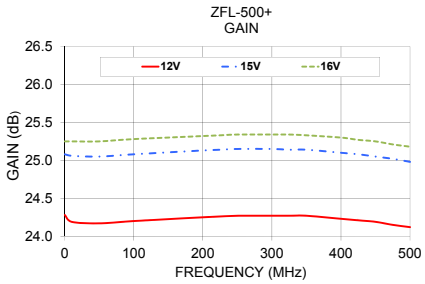
Outline Dimensions (inch / mm)

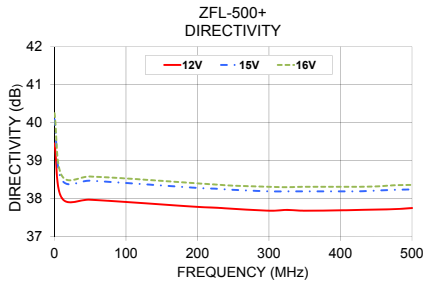
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
1.25	1.25	.75	.63	.36	1.000	1.000	.125	.125	.46	2.18	1.688	.06	.750	.50	.80	.45	.29	grams
31.75	31.75	19.05	16.00	9.14	25.40	25.40	3.18	3.18	11.68	55.37	42.88	1.52	19.05	12.70	20.32	11.43	7.37	38

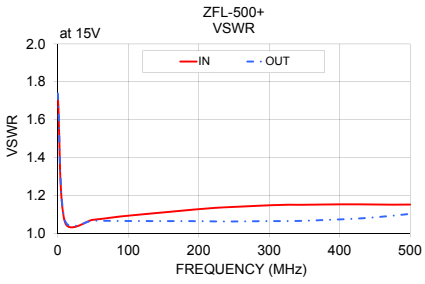
Notes

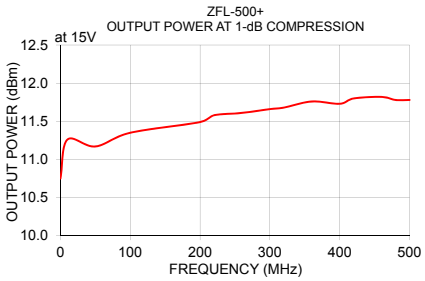
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

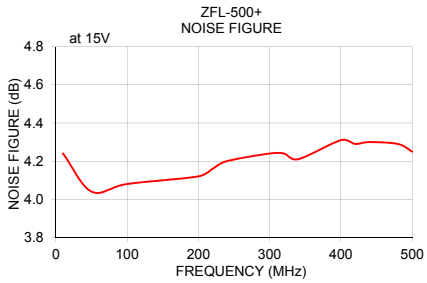
FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1) 15V		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	12V	15V	16V	12V	15V	16V	IN	OUT	15V	15V
0.05	24.28	25.08	25.25	39.45	40.09	40.25	1.73	1.74	—	10.75
10.00	24.19	25.06	25.25	38.02	38.50	38.61	1.06	1.07	4.24	11.26
50.00	24.17	25.05	25.25	37.97	38.47	38.58	1.07	1.07	4.04	11.17
100.00	24.20	25.08	25.28	37.91	38.41	38.53	1.09	1.07	4.08	11.35
200.00	24.25	25.13	25.32	37.78	38.28	38.40	1.13	1.06	4.12	11.49
225.00	24.26	25.14	25.33	37.76	38.26	38.37	1.14	1.06	4.16	11.58
250.00	24.27	25.15	25.34	37.73	38.23	38.34	1.14	1.06	4.20	11.61
300.00	24.27	25.15	25.34	37.68	38.19	38.31	1.15	1.06	4.24	11.66
325.00	24.27	25.14	25.34	37.70	38.19	38.30	1.15	1.07	4.24	11.68
350.00	24.27	25.14	25.33	37.68	38.19	38.31	1.15	1.07	4.21	11.76
400.00	24.23	25.10	25.30	37.69	38.19	38.31	1.15	1.07	4.31	11.73
425.00	24.21	25.08	25.27	37.70	38.19	38.31	1.15	1.08	4.29	11.80
450.00	24.19	25.05	25.25	37.71	38.21	38.32	1.15	1.08	4.30	11.82
475.00	24.15	25.02	25.21	37.72	38.23	38.35	1.15	1.09	4.29	11.78
500.00	24.12	24.98	25.18	37.75	38.24	38.36	1.15	1.10	4.25	11.78











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

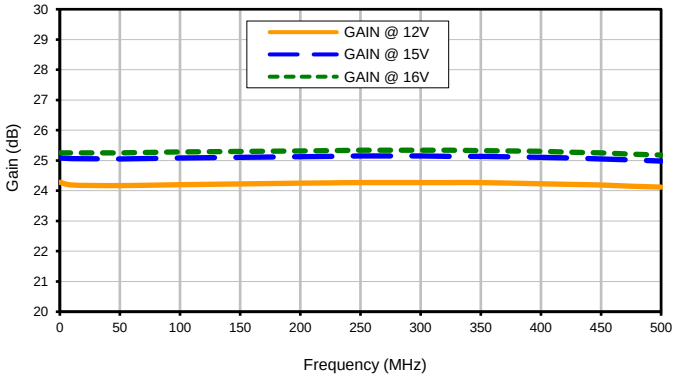
Amplifier ZFL-500+

Typical Performance Data

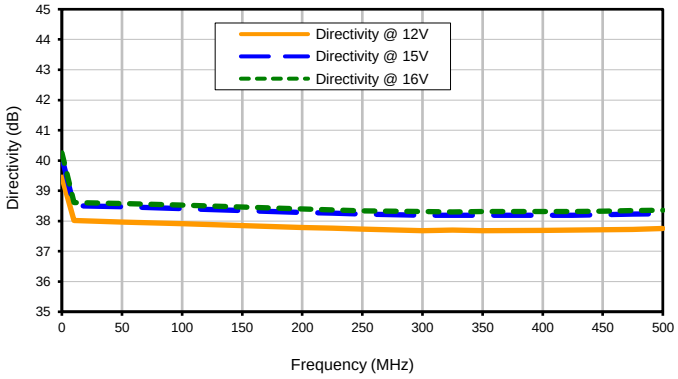
FREQ. (MHz)	GAIN (dB) 12V	GAIN (dB) 15V	GAIN (dB) 16V	DIRECTIVITY (dB) 12V	DIRECTIVITY (dB) 15V	DIRECTIVITY (dB) 16V	VSWR (:1) IN 15V	VSWR (:1) OUT 15V	NOISE FIGURE (dB) 15V	Pout at 1 dB Comp (dBm) 15V	OUTPUT IP3 (dBm) 15V
0.05	24.28	25.08	25.25	39.45	40.09	40.25	1.73	1.74	--	10.75	25.00
10	24.19	25.06	25.25	38.02	38.50	38.61	1.06	1.07	4.24	11.26	25.73
50	24.17	25.05	25.25	37.97	38.47	38.58	1.07	1.07	4.04	11.17	25.84
100	24.20	25.08	25.28	37.91	38.41	38.53	1.09	1.07	4.08	11.35	26.13
200	24.25	25.13	25.32	37.78	38.28	38.40	1.13	1.06	4.12	11.49	26.62
225	24.26	25.14	25.33	37.76	38.26	38.37	1.14	1.06	4.16	11.58	26.75
250	24.27	25.15	25.34	37.73	38.23	38.34	1.14	1.06	4.20	11.61	26.88
300	24.27	25.15	25.34	37.68	38.19	38.31	1.15	1.06	4.24	11.66	26.87
325	24.27	25.14	25.34	37.70	38.19	38.30	1.15	1.07	4.24	11.68	27.04
350	24.27	25.14	25.33	37.68	38.19	38.31	1.15	1.07	4.21	11.76	27.22
400	24.23	25.10	25.30	37.69	38.19	38.31	1.15	1.07	4.31	11.73	27.32
425	24.21	25.08	25.27	37.70	38.19	38.31	1.15	1.08	4.29	11.80	27.28
450	24.19	25.05	25.25	37.71	38.21	38.32	1.15	1.08	4.30	11.82	27.34
475	24.15	25.02	25.21	37.72	38.23	38.35	1.15	1.09	4.29	11.78	27.43
500	24.12	24.98	25.18	37.75	38.24	38.36	1.15	1.10	4.25	11.78	27.31

Typical Performance Curves

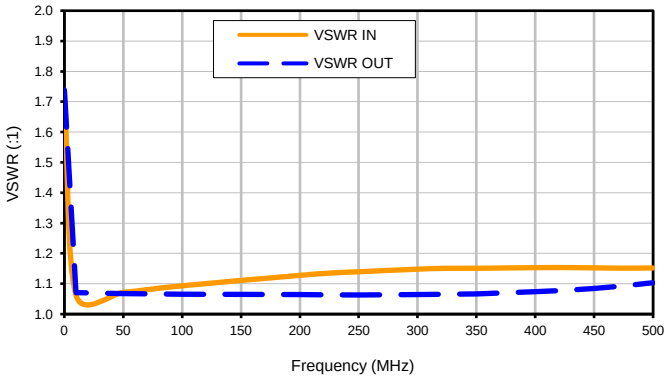
Gain



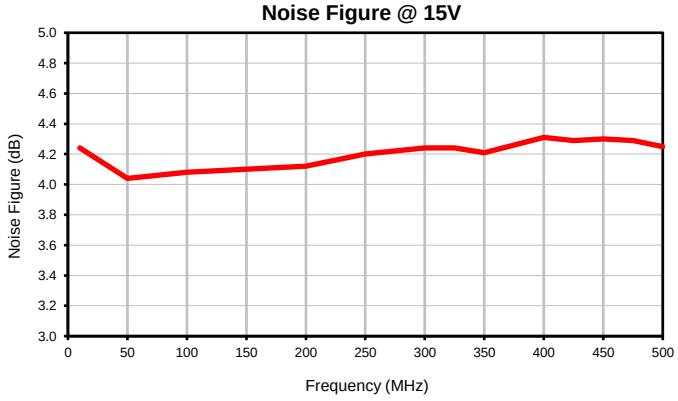
Directivity



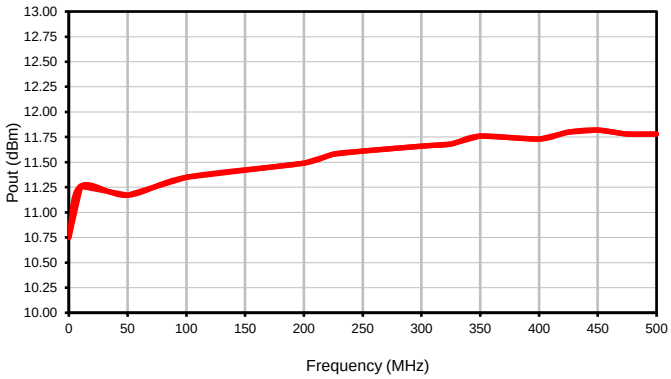
VSWR @ 15V



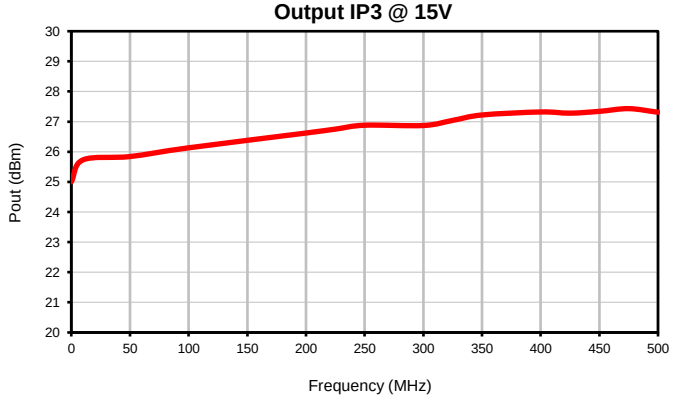
Noise Figure @ 15V



Pout at 1dB Compression @ 15V



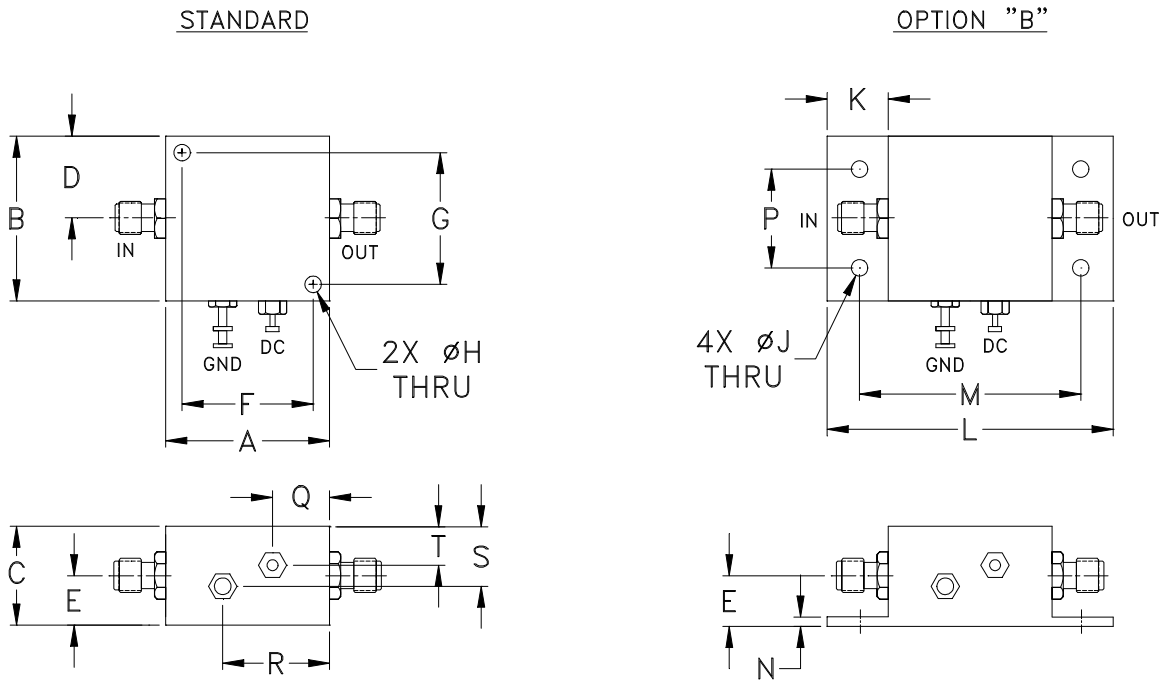
Output IP3 @ 15V



Case Style Y

Y460

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
Y460	1.25 (31.75)	1.25 (31.75)	.75 (19.05)	.63 (16.0)	.36 (9.15)	1.000 (25.4)	1.000 (25.4)	.125 (3.2)	.125 (3.2)	.46 (11.7)	2.18 (55.4)	1.688 (42.9)	.06 (1.5)

CASE#	P	Q	R	S	T	WT. GRAMS
Y460	.750 (19.0)	.50 (12.7)	.80 (20.3)	.45 (11.4)	.29 (7.4)	38

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.
3. Mounting bracket available on request. Add suffix B to part number

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 ENV23T2

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	-20° to 71° 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.