

# Coaxial Amplifier

## ZFL-500+

50Ω Low Power 0.05 to 500 MHz

### 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



SMA version shown

Generic photo used for illustration purposes only

CASE STYLE: Y460

Connectors	Model
SMA	ZFL-500+
BNC	ZFL-500-BNC+
<b>BRACKET (OPTION "B")</b>	

**+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	
	$f_L$	$f_U$	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

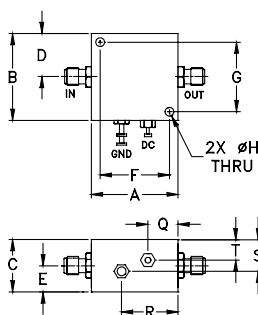
Operating Temperature	-20°C to 71°C
Storage Temperature	-55°C to 100°C
DC Voltage	+17V Max.

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

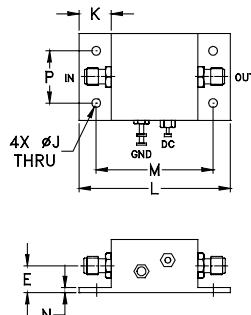


### Outline Drawing

STANDARD



OPTION "B"



### 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

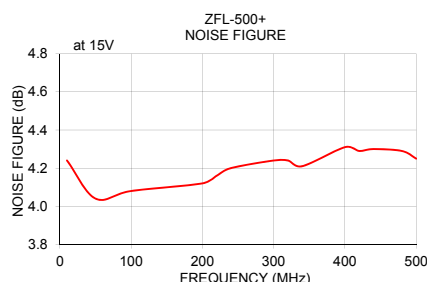
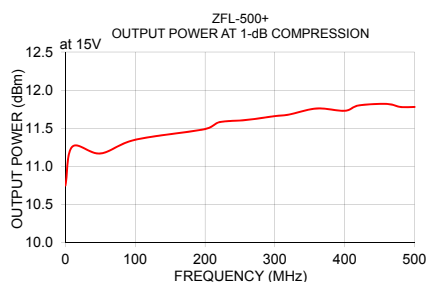
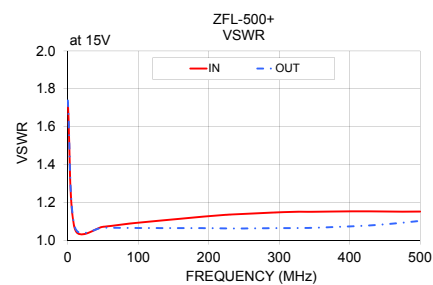
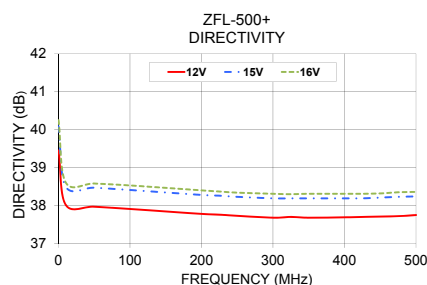
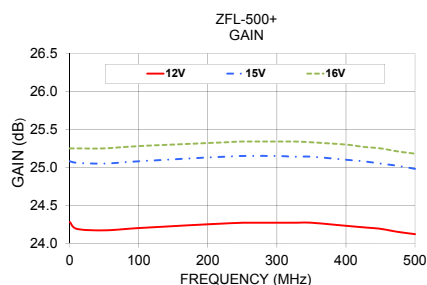
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FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1) 15V		NOISE FIGURE (dB) 15V	POUT at 1 dB COMPR. (dBm) 15V
	12V	15V	16V	12V	15V	16V	IN	OUT		
0.05	24.28	25.08	25.25	39.45	40.09	40.25	1.73	1.74	—	10.75
10.00	24.19	25.06	25.25	38.02	38.50	38.61	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**

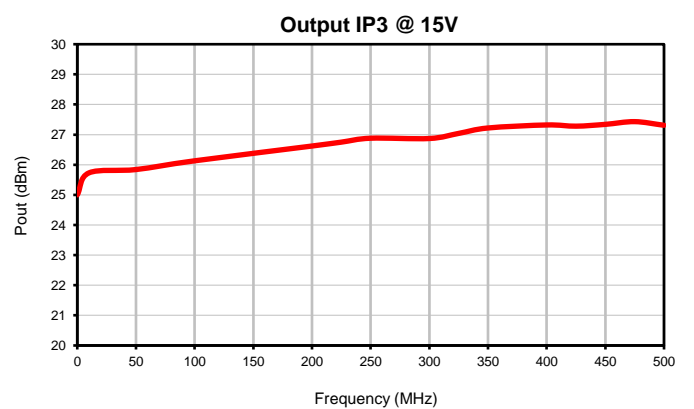
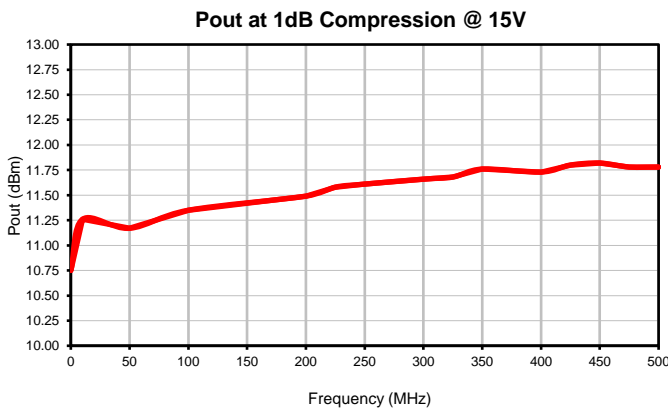
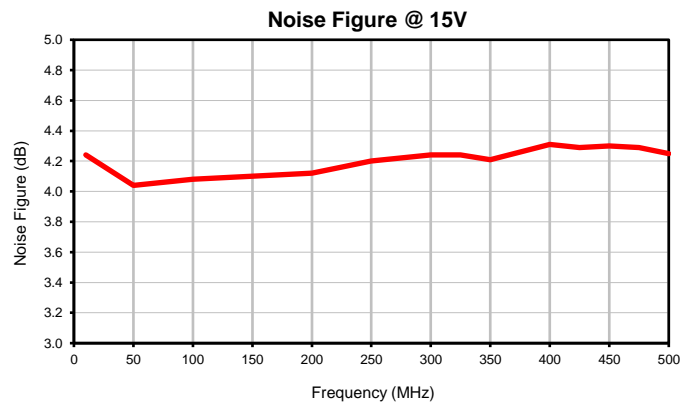
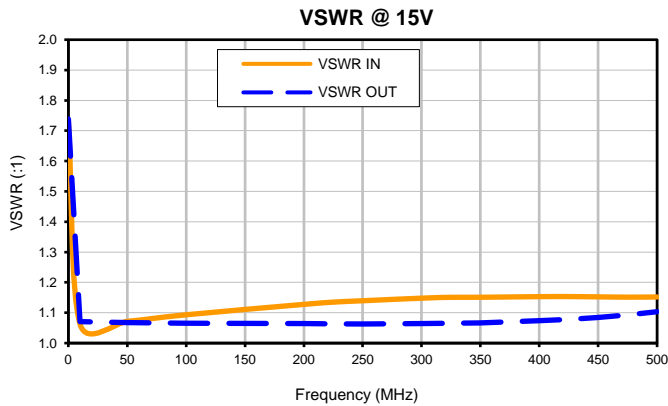
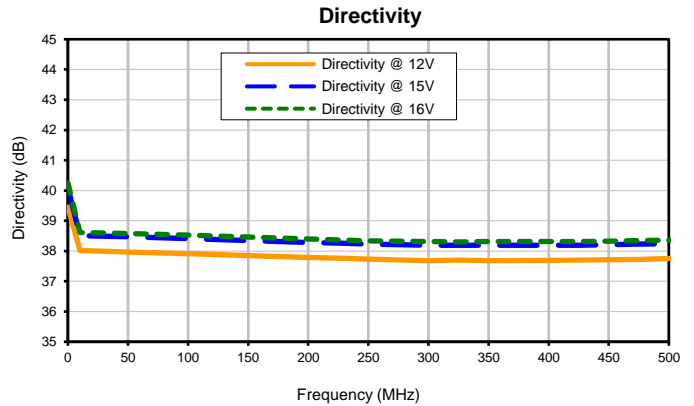
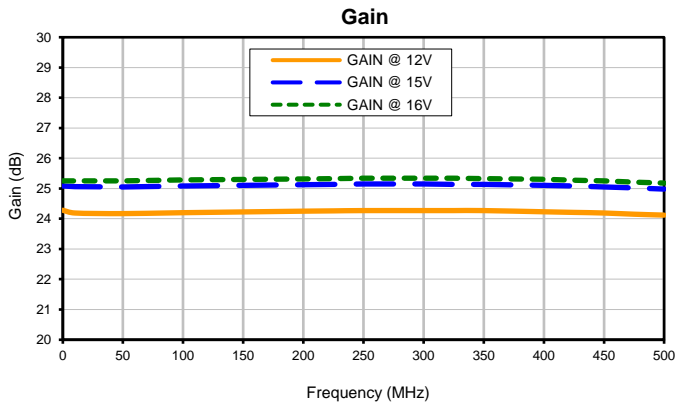
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## Typical Performance Data

FREQ. (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB) 15V	Pout at 1 dB Comp (dBm) 15V	OUTPUT IP3 (dBm) 15V
	12V	15V	16V	12V	15V	16V	IN 15V	OUT 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



### 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.  $\pm .03$ ; 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.
3. Mounting bracket available on request. Add suffix B to part number



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