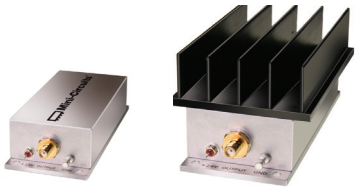
Coaxial

Amplifier

NON-CATALOG

ZHL-2

50Ω Medium High Power 10 to 1000 MHz



ZHL-2X ZHL-2

Features

- wideband, 10 to 1000 MHz
- high IP3, +38 dBm typ.
- medium high power, 29 dBm min.

Applications

- VHF/UHF
- cellular
- instrumentation
- laboratory

CASE STYLE: T34

Connectors	Model
SMA	ZHL-2-S
SMA	ZHL-2X-S

Electrical Specifications

MODEL NO.	FREQ. (MHz)		GAIN (dB)		MAXIMUM POWER OUTPUT (dBm)		DYNAMIC RANGE		VSWR (:1) Max.		DC POWER	
				Flatness	(1 dB Compr.)	Input (no damage)	NF (dB)	IP3 (dBm)			Volt (V)	Current (A)
	f_L	f_U	Min.	Max.	Min.		Typ.	Typ.	In	Out	Nom.	Max.
ZHL-2	10	1000	16	±1.0	+29	+15	9.0	+38	2.0	2.0	24	0.6
ZHL-2X*	10	1000	16	±1.0	+29	+15	9.0	+38	2.0	2.0	24	0.6

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

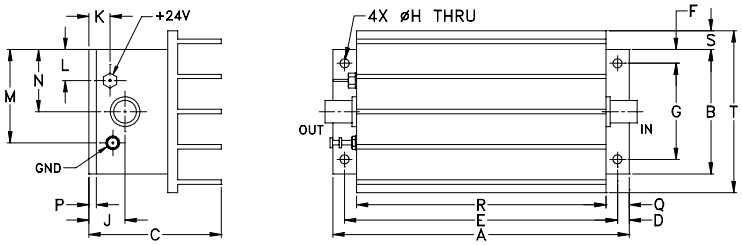
To order without heat sink, add suffix X to model number. Alternative heat sinking and heat removal must be provided by the user to limit maximum temperature to 65°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 1.35°C/W Max.

Maximum Ratings

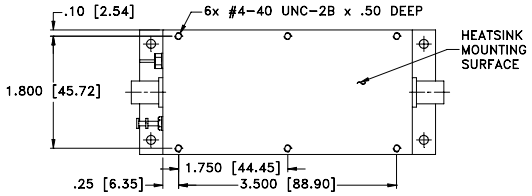
Operating Temperature	-20°C to 65°C
Storage Temperature	-55°C to 100°C
DC Voltage	+25V Max.

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

Outline Drawing



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt
4.75	2.00	2.12	.19	4.375	.23	1.540	.144	.58	.34	.50	1.50	1.00	.12	.38	4.00	.30	2.60	grams*
120.65	50.80	53.85	4.83	111.13	5.84	39.12	3.66	14.73	8.64	12.70	38.10	25.40	3.05	9.65	101.60	7.62	66.04	440.0

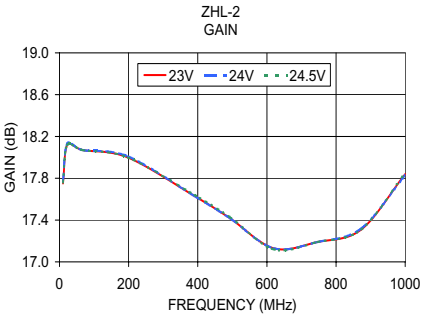
*325 grams without heatsink

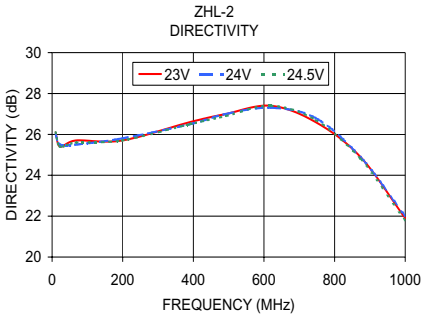
Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's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

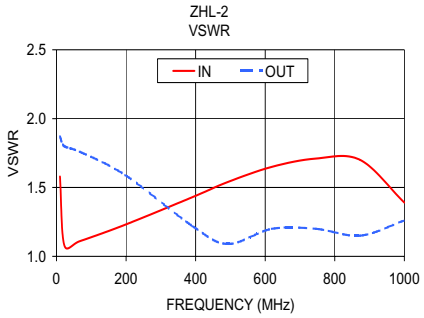
Typical Performance Data/Curves

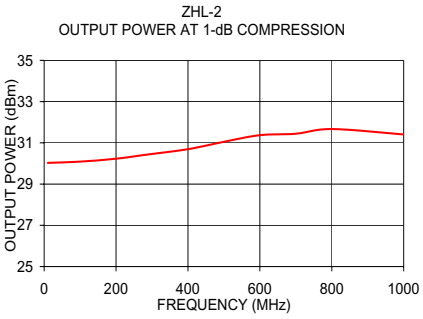
ZHL-2

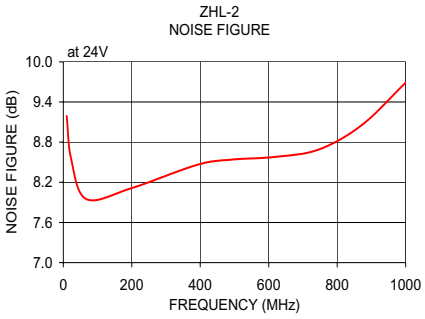
FREQ. (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR (:1)		NOISE FIGURE (dB)	FREQ. (MHz)	POUT at 1 dB COMPR. (dBm)
	23V	24V	24.5V	23V	24V	24.5V	IN	OUT	24V		24V
10.00	17.75	17.77	17.76	26.10	26.00	26.10	1.58	1.87	9.19	10	30.03
22.60	18.12	18.13	18.12	25.40	25.50	25.40	1.08	1.80	8.56	100	30.09
66.80	18.07	18.07	18.07	25.70	25.50	25.60	1.11	1.76	7.95	200	30.23
197.60	18.00	18.01	18.00	25.70	25.80	25.70	1.23	1.59	8.11	300	30.46
390.80	17.63	17.63	17.64	26.60	26.50	26.50	1.43	1.22	8.46	400	30.69
492.30	17.42	17.42	17.43	27.00	27.00	26.90	1.54	1.09	8.54	500	31.05
619.20	17.13	17.13	17.12	27.40	27.30	27.40	1.65	1.20	8.58	600	31.37
746.20	17.19	17.19	17.19	26.60	26.80	26.70	1.71	1.20	8.69	700	31.44
873.10	17.31	17.32	17.31	24.90	24.90	24.80	1.70	1.15	9.06	800	31.67
1000.00	17.84	17.83	17.85	21.90	22.00	21.80	1.39	1.26	9.69	1000	31.41











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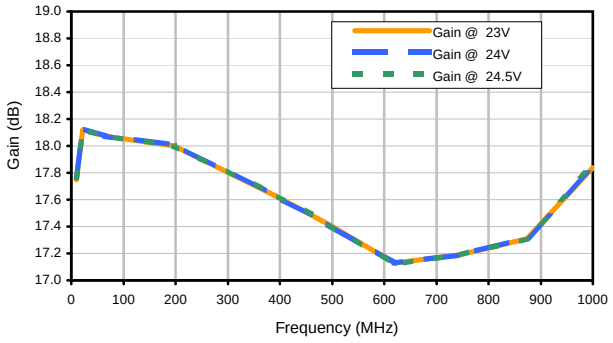
Amplifier ZHL-2

Typical Performance Data

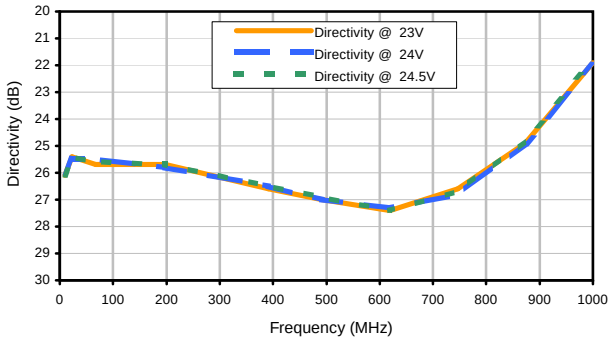
FREQUENCY (MHz)	GAIN (dB)			DIRECTIVITY (dB)			VSWR IN (:1)	VSWR OUT (:1)	NOISE FIGURE (dB)	Pout at 1dB Comp. (dBm)
	23V	24V	24.5V	23V	24V	24.5V	24V	24V	24V	24V
10.0	17.75	17.77	17.76	26.10	26.00	26.10	1.58	1.87	9.19	30.71
22.6	18.12	18.13	18.12	25.40	25.50	25.40	1.08	1.80	8.56	30.73
66.8	18.07	18.07	18.07	25.70	25.50	25.60	1.11	1.76	7.95	30.87
197.6	18.00	18.01	18.00	25.70	25.80	25.70	1.23	1.59	8.11	31.07
390.8	17.63	17.63	17.64	26.60	26.50	26.50	1.43	1.22	8.46	30.68
492.3	17.42	17.42	17.43	27.00	27.00	26.90	1.54	1.09	8.54	30.19
619.2	17.13	17.13	17.12	27.40	27.30	27.40	1.65	1.20	8.58	29.67
746.2	17.19	17.19	17.19	26.60	26.80	26.70	1.71	1.20	8.69	29.40
873.1	17.31	17.32	17.31	24.90	24.90	24.80	1.70	1.15	9.06	29.40
1000.0	17.84	17.83	17.85	21.90	22.00	21.80	1.39	1.26	9.69	29.28

Typical Performance Curves

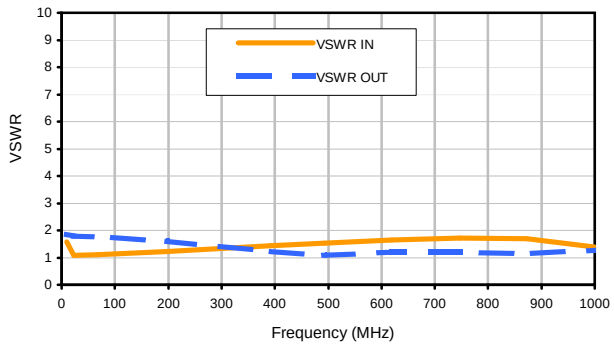
Gain



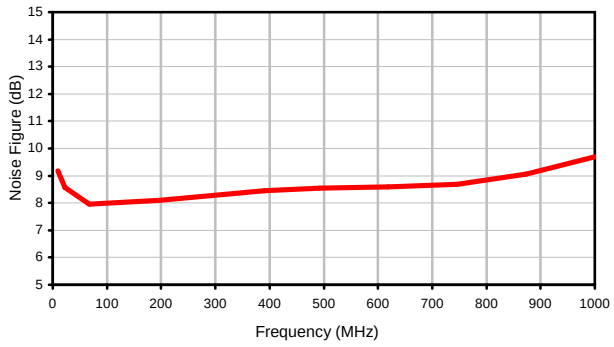
Directivity



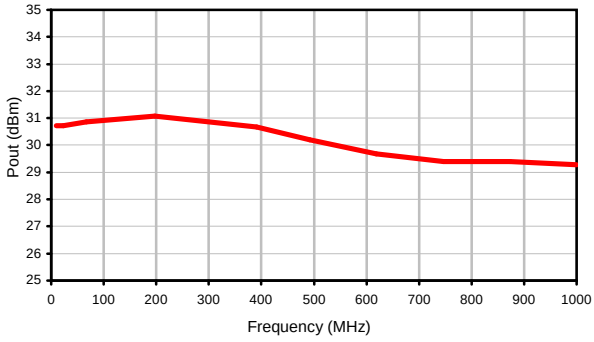
VSWR @ 24V



Noise Figure @ 24V



Pout at 1dB Compression @ 24V



Mini-Circuits

Environmental Specifications **ENV23T3**

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 65° 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