

Coaxial Amplifier

ZHL-211

50Ω Medium High Power 800 to 950 MHz

Features

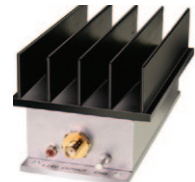
- excellent flatness, ± 0.4 dB
- high IP3, +38 dBm typ.
- medium high power, 29 dBm min.

Applications

- cellular
- instrumentation
- laboratory



ZHL211X-S



ZHL211-S

CASE STYLE: T34

Connectors	Model	Price	Qty.
SMA	ZHL-211-S	Contact Sales Dept.	
SMA	ZHL-211X-S	Contact Sales Dept.	

NON-CATALOG

Electrical Specifications

MODEL NO.	FREQ. (MHz)		GAIN (dB)		MAXIMUM POWER OUTPUT (dBm)		DYNAMIC RANGE		VSWR (:1) Max.		DC POWER	
	f_L	f_U	Min.	Flatness Max.	(1 dB Compr.) Min.	Input (no damage)	NF (dB) Typ.	IP3 (dBm) Typ.	In	Out	Volt (V) Nom.	Current (A) Max.
ZHL-211	800	950	20	± 0.4	+29	+15	8.0	+38	1.8	1.8	24	0.6
ZHL-211X*	800	950	20	± 0.4	+29	+15	8.0	+38	1.8	1.8	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

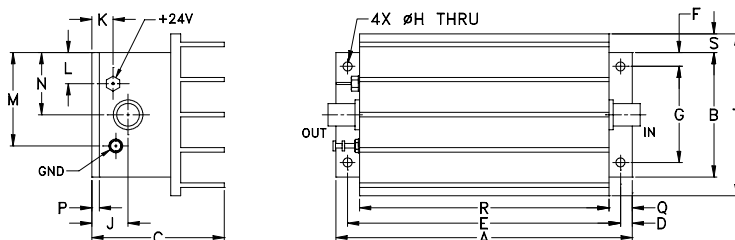
Operating Temperature -20°C to 65°C

Storage Temperature -55°C to 100°C

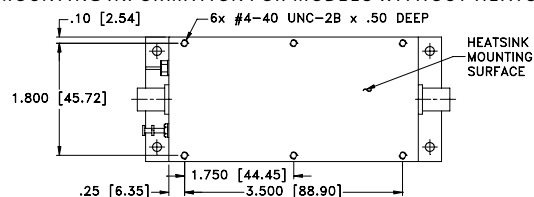
DC Voltage +25V Max.

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

Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs
& shopping online see web site

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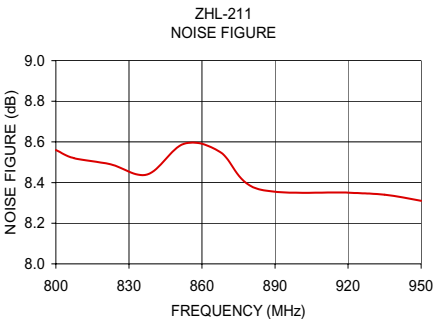
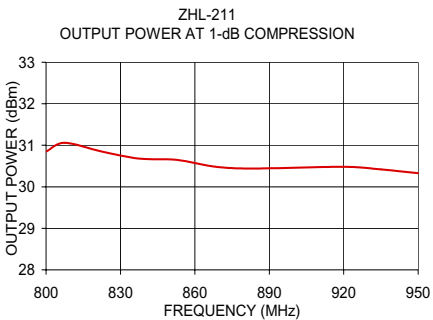
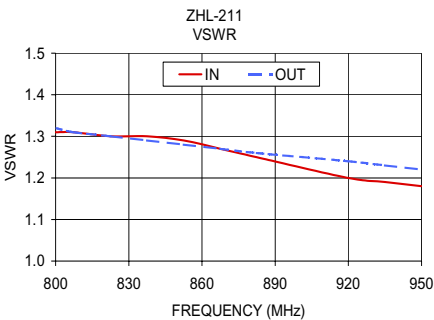
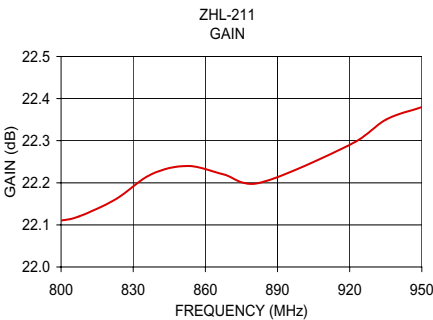
IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.

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ZHL-211
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FREQUENCY (MHz)	GAIN (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)
	24V	IN	OUT	24V	24V
800.00	22.11	1.31	1.32	8.56	30.85
807.50	22.12	1.31	1.31	8.52	31.06
822.50	22.16	1.30	1.30	8.49	30.85
837.50	22.22	1.30	1.29	8.44	30.68
852.50	22.24	1.29	1.28	8.59	30.65
867.50	22.22	1.27	1.27	8.55	30.49
882.50	22.20	1.25	1.26	8.37	30.44
920.00	22.29	1.20	1.24	8.35	30.48
935.00	22.35	1.19	1.23	8.34	30.42
950.00	22.38	1.18	1.22	8.31	30.33

NON-CATALOG



For detailed performance specs
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Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 24V	VSWR IN (:1) 24V	VSWR OUT (:1) 24V	NOISE FIGURE (dB) 24V	Pout at 1dB Comp. (dBm) 24V
800.0	22.11	1.31	1.32	8.56	30.85
807.5	22.12	1.31	1.31	8.52	31.06
822.5	22.16	1.30	1.30	8.49	30.85
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920.0	22.29	1.20	1.24	8.35	30.48
935.0	22.35	1.19	1.23	8.34	30.42
950.0	22.38	1.18	1.22	8.31	30.33

REV. X1

ZHL-211

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IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS 9100 CERTIFIED RoHS compliant

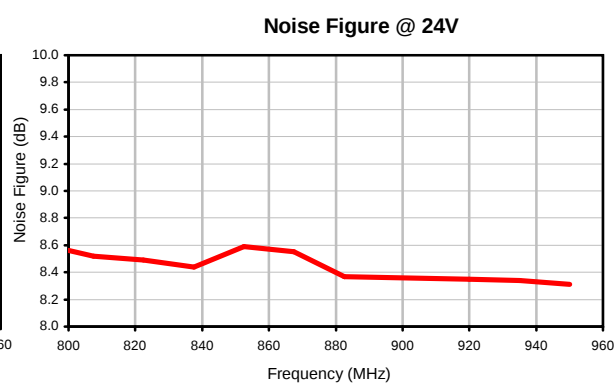
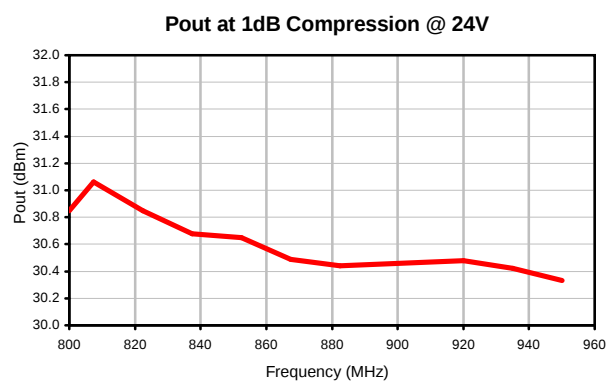
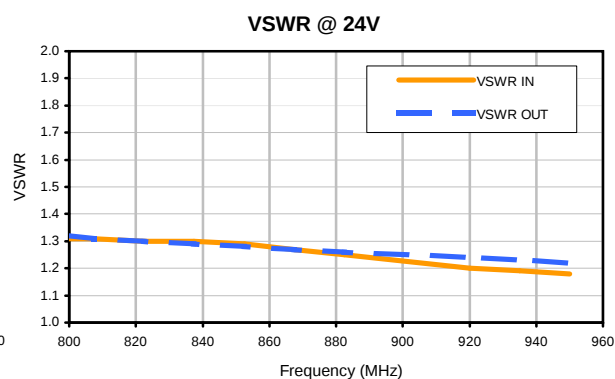
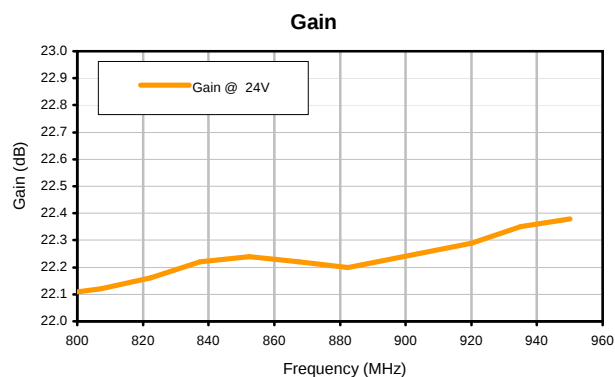
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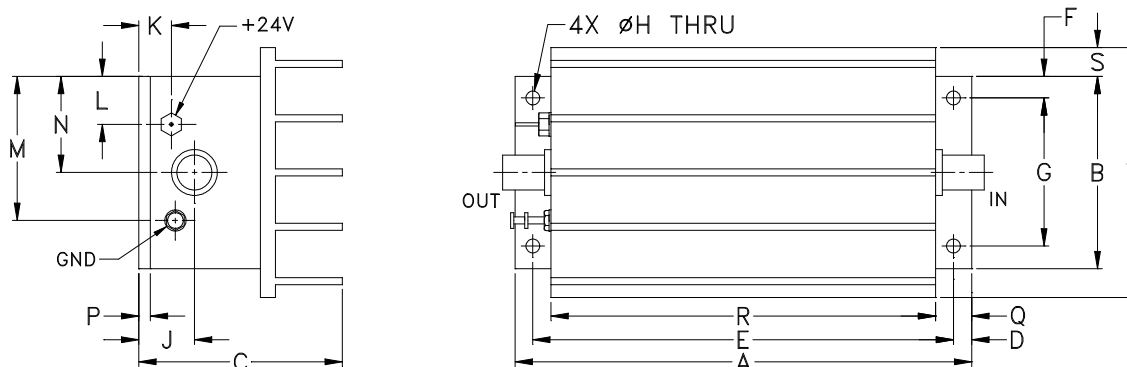
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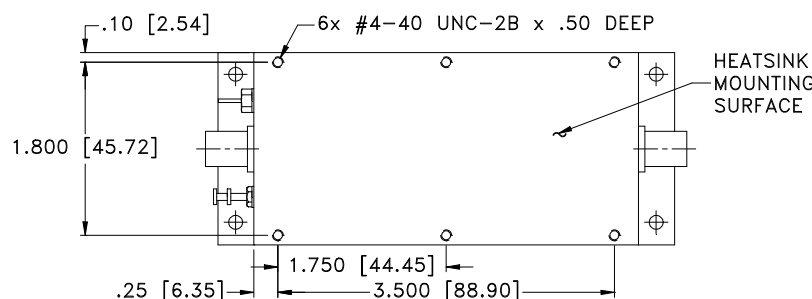
Typical Performance Curves



Outline Dimensions



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
T34	4.75 (120.65)	2.00 (50.80)	2.12 (53.85)	.19 (4.83)	4.375 (111.13)	.23 (5.84)	1.540 (39.12)	.144 (3.66)	.58 (14.73)	.34 (8.64)	.50 (12.70)	1.50 (38.10)	1.00 (25.40)

CASE#	P	Q	R	S	T	WT. GRAMS	WT. WITHOUT HEATSINK GRAMS
T34	.12 (3.05)	.38 (9.65)	4.00 (101.60)	.30 (7.62)	2.60 (66.04)	440.0	325.0

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

Notes:

- Case material: Aluminum alloy.
- Case finish and mounting bracket finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Heat sink finish: Black anodize.



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