

Coaxial

High Power Amplifier

ZHL-900A-10W+

50Ω 10W 480 to 900 MHz

Features

- High power, 10 Watt
- Excellent gain flatness, ± 0.7 dB
- Excellent IN/OUT matching, 20dB return loss
- High power output, +40 dBm
- High IP3, +50 dBm
- Class A amplifier
- Over-voltage protection, shuts off above 29V
- Protected against overheat, shuts off automatically
- No damage with an open or short output load under full CW output power¹

Applications

- UHF
- Cellular
- Instrumentation
- Laboratory use

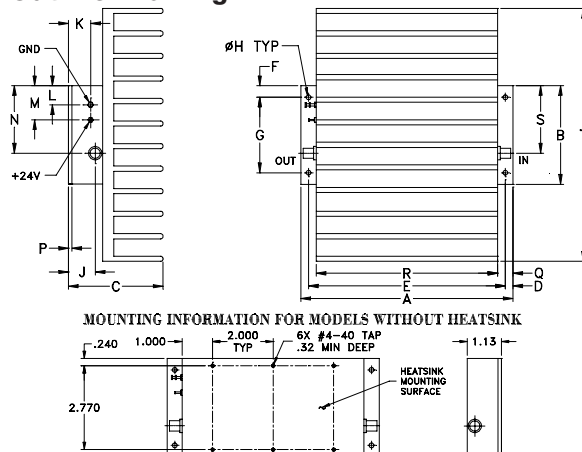
Electrical Specifications

Parameter	ZHL-900A-10W+			ZHL-900A-10X+▲			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range	480		900	480		900	MHz
Gain	24	26	30	24	26	30	dB
Gain Flatness			± 1.0			± 1.0	dB
Output Power at 1dB compression	+39			+39			dBm
Saturated Output Power at 3dB compression	+41			+41			dBm
Noise Figure		10.0			10.0		dB
Output third order intercept point		+50			+50		dBm
Input VSWR		1.3			1.3		:1
Output VSWR		1.3			1.3		:1
DC Supply Voltage		24			24		V
Supply Current		2.5	3.5		2.5	3.5	A

1. At constant open or short load 24V nominal supply voltage

▲ Heat sink not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 65°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 0.25°C/W max.

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
7.00	3.25	3.13	.25	6.500	.38	2.500	.156	.88	.73	.62	1.13	2.23	.125	.50	6.00	2.23	8.35	grams*
177.80	82.55	79.50	6.35	165.10	9.65	63.50	3.96	22.35	18.54	15.75	28.70	56.64	3.18	12.70	152.40	56.64	212.09	1780

*510 grams without heatsink

Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
Base Plate Temperature	65°C
DC Voltage	+25V
Input RF Power ² (no damage)	+25 dBm

2. At nominal output load, 24V nominal supply voltage.

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

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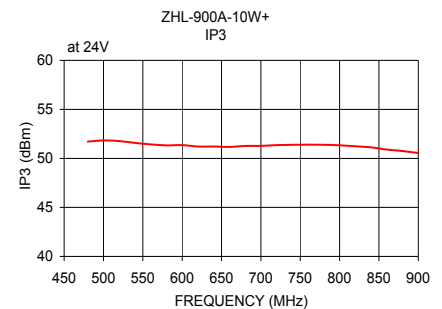
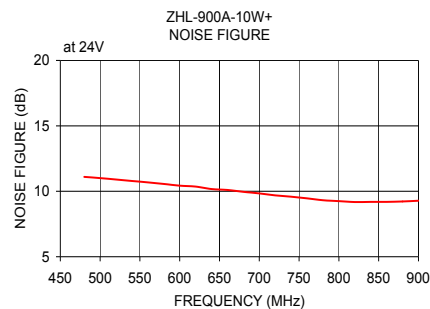
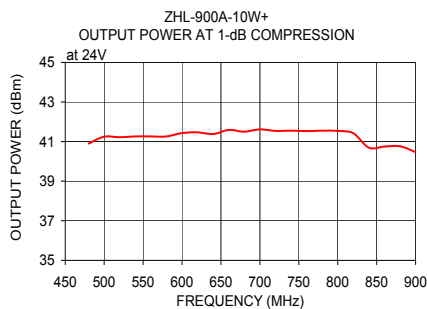
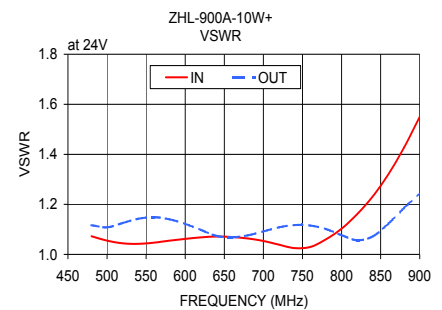
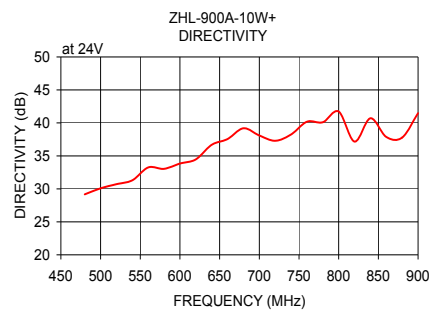
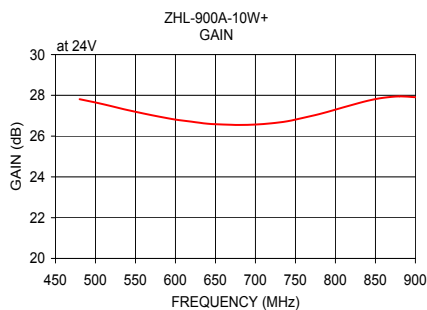
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NON-CATALOG

Typical Performance Data/Curves

ZHL-900A-10W+

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		NOISE FIGURE (dB)	POUT at 1 dB COMPR. (dBm)	OUTPUT IP3 (dBm)
	24V	24V	IN	OUT	24V	24V	24V
480.00	27.81	29.17	1.07	1.12	11.10	40.90	51.71
500.00	27.65	30.08	1.05	1.11	11.01	41.25	51.83
520.00	27.47	30.71	1.04	1.13	10.90	41.22	51.76
540.00	27.28	31.30	1.04	1.14	10.79	41.26	51.58
560.00	27.11	33.25	1.05	1.15	10.68	41.26	51.43
580.00	26.95	33.03	1.06	1.14	10.56	41.26	51.33
600.00	26.81	33.84	1.06	1.12	10.43	41.43	51.35
620.00	26.71	34.47	1.07	1.10	10.36	41.47	51.21
640.00	26.61	36.68	1.07	1.07	10.17	41.38	51.21
660.00	26.57	37.56	1.07	1.07	10.10	41.59	51.17
680.00	26.55	39.19	1.06	1.08	9.96	41.50	51.27
700.00	26.57	38.09	1.05	1.09	9.84	41.62	51.28
720.00	26.63	37.29	1.04	1.11	9.69	41.54	51.35
740.00	26.73	38.24	1.02	1.12	9.59	41.55	51.39
760.00	26.90	40.18	1.03	1.12	9.46	41.53	51.40
780.00	27.08	40.10	1.06	1.10	9.32	41.55	51.39
800.00	27.30	41.73	1.10	1.08	9.25	41.54	51.34
820.00	27.52	37.16	1.16	1.06	9.18	41.42	51.24
840.00	27.73	40.71	1.23	1.07	9.19	40.69	51.13
860.00	27.88	37.87	1.32	1.12	9.19	40.75	50.90
880.00	27.95	37.78	1.43	1.19	9.22	40.76	50.75
900.00	27.91	41.47	1.55	1.25	9.28	40.47	50.55



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ZHL-900A-10W+

Typical Performance Data

FREQUENCY (MHz)	GAIN (dB) 24V	DIRECTIVITY (dB) 24V	VSWR IN (:1) 24V	VSWR OUT (:1) 24V	NOISE FIGURE (dB) 24V	Pout at 1dB COMP. (dBm) 24V	OUTPUT IP3 (dBm) 24V
480.0	27.81	29.17	1.07	1.12	11.10	40.90	51.71
500.0	27.65	30.08	1.05	1.11	11.01	41.25	51.83
520.0	27.47	30.71	1.04	1.13	10.90	41.22	51.76
540.0	27.28	31.30	1.04	1.14	10.79	41.26	51.58
560.0	27.11	33.25	1.05	1.15	10.68	41.26	51.43
580.0	26.95	33.03	1.06	1.14	10.56	41.26	51.33
600.0	26.81	33.84	1.06	1.12	10.43	41.43	51.35
620.0	26.71	34.47	1.07	1.10	10.36	41.47	51.21
640.0	26.61	36.68	1.07	1.07	10.17	41.38	51.21
660.0	26.57	37.56	1.07	1.07	10.10	41.59	51.17
680.0	26.55	39.19	1.06	1.08	9.96	41.50	51.27
700.0	26.57	38.09	1.05	1.09	9.84	41.62	51.28
720.0	26.63	37.29	1.04	1.11	9.69	41.54	51.35
740.0	26.73	38.24	1.02	1.12	9.59	41.55	51.39
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840.0	27.73	40.71	1.23	1.07	9.19	40.69	51.13
860.0	27.88	37.87	1.32	1.12	9.19	40.75	50.90
880.0	27.95	37.78	1.43	1.19	9.22	40.76	50.75
900.0	27.91	41.47	1.55	1.25	9.28	40.47	50.55



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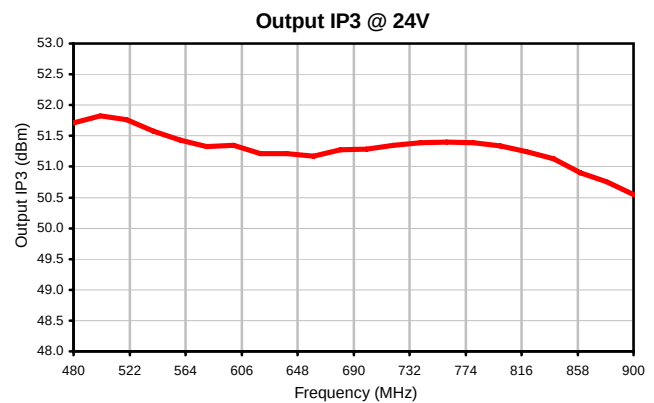
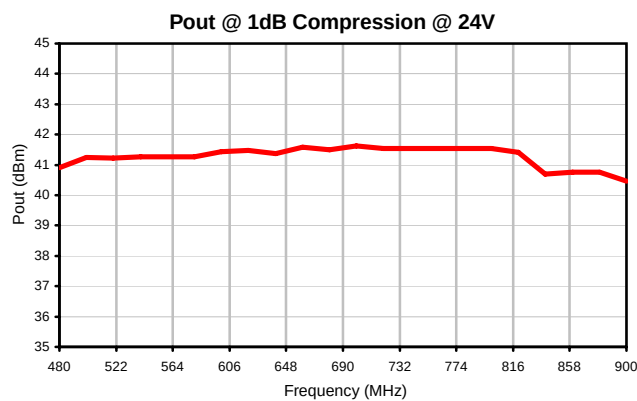
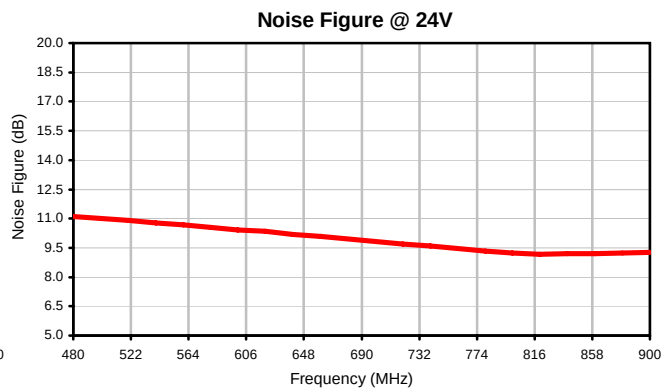
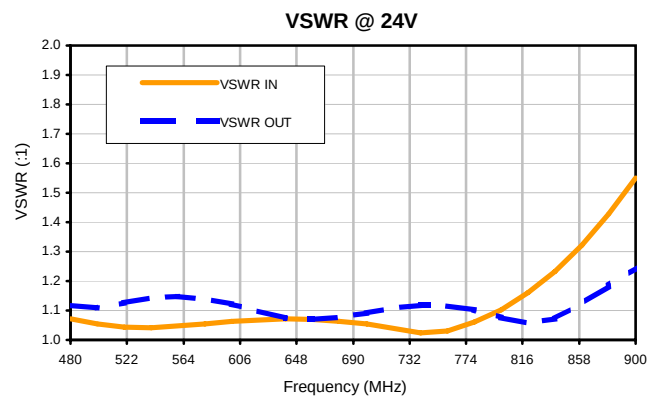
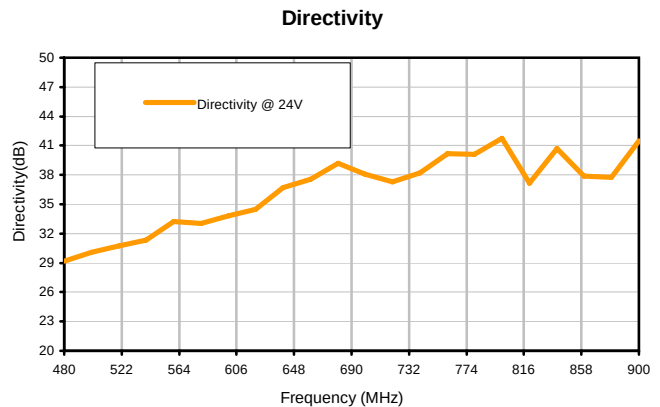
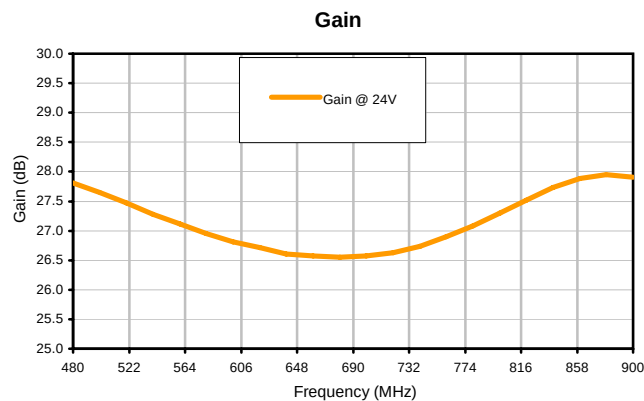
IF/RF MICROWAVE COMPONENTS

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ZHL-900A-10W+
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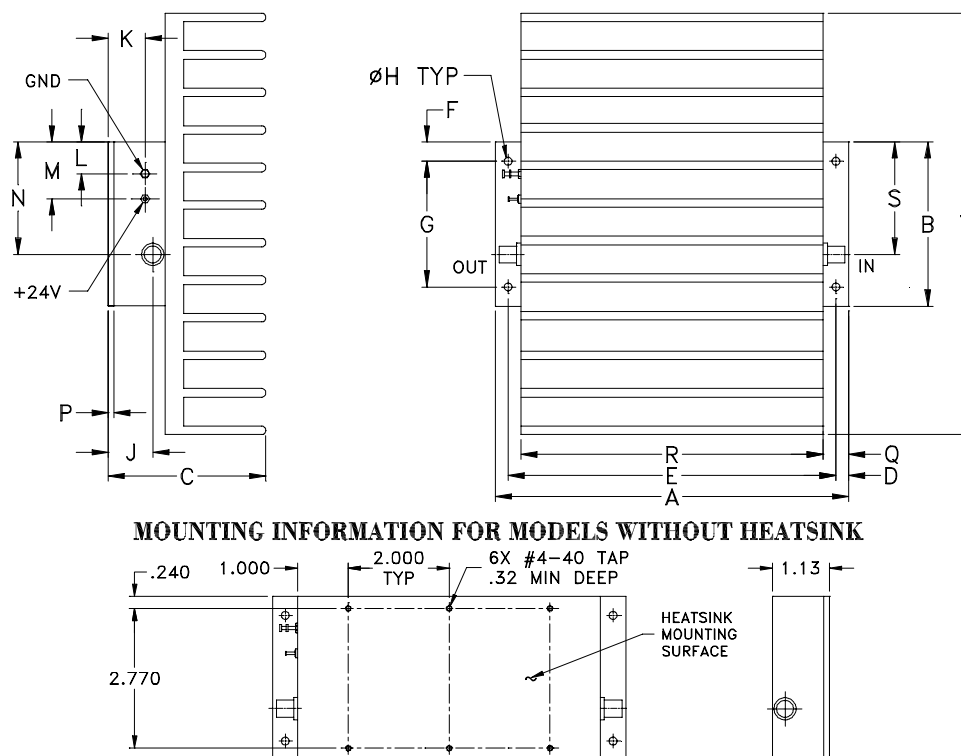
Typical Performance Curves

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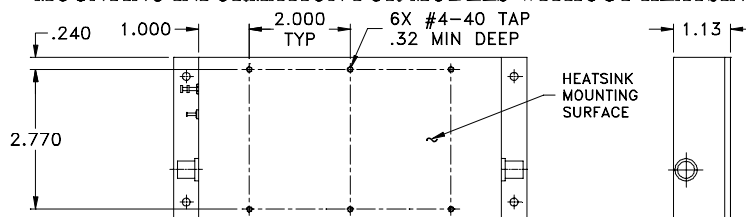


Outline Dimensions

DDD338



MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
DDD338	7.00 (177.80)	3.25 (82.55)	3.13 (79.50)	.25 (6.35)	6.500 (165.10)	.38 (9.65)	2.500 (63.50)	.156 (3.96)	.88 (22.35)	.73 (18.54)	.62 (15.75)	1.13 (28.70)	2.23 (56.64)

CASE#	P	Q	R	S	T	WT. GRAMS	WT. WITHOUT HEATSINK GRAMS
DDD338	.125 (3.18)	.50 (12.70)	6.00 (152.40)	2.23 (56.64)	8.35 (212.09)	1780	510

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

Notes:

- Case material: Aluminum alloy.
- Case finish:
For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.
- Heatsink finish: Black anodize if supplied with heatsink.
- Refer to the individual model data sheet for the type of connectors available.



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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