



COAXIAL

# High Power Amplifier

# ZVE-3W-83+ ZVE-3W-83X+

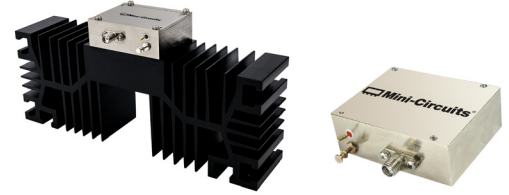
50Ω 3W 2000 to 8000 MHz

## FEATURES

- High power, 3 Watt
- Wideband, 2000 to 8000 MHz
- Low noise figure, 5.8 dB typ.
- High IP3, +42 dBm typ.
- High dynamic range
- High gain, 35 dB typ. and good directivity, 35 dB typ.
- Internal voltage regulated for 13 to 18 VDC

## APPLICATIONS

- Satellite communications
- Line-Of-Sight transmitters
- Signal generators
- Spread-spectrum communications



Generic photo used for illustration purposes only

Model No.	ZVE-3W-83+	ZVE-3W-83X+▲
Option	With heatsink	Without heatsink
Case Style	BN1327	
Connectors	SMA	

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

## ELECTRICAL SPECIFICATIONS

Parameter	Condition (MHz)	ZVE-3W-83+ ZVE-3W-83X+▲			Units
		Min.	Typ.	Max.	
Frequency Range		2000		8000	MHz
Gain	2000 - 8000	30	—	40	dB
Gain Flatness	2000 - 8000	—	±1.15	±2.0	dB
Output Power at 1dB Compression <sup>1</sup>	2000 - 8000	+31.5	+33	—	dBm
Output Power at 3 dB Compression <sup>1</sup>	2000 - 8000	+33.5	+35	—	dBm
Output IP3	2000 - 8000	—	+42	—	dBm
Input VSWR	2000 - 8000	—	1.5	—	:1
Output VSWR	2000 - 8000	—	1.4	—	:1
Noise Figure	2000 - 8000	—	5.8	—	dB
DC Supply Voltage		—	15	—	V
Supply Current <sup>2</sup>		—	—	1.5	A

1. At 25°C operating temperature

2. IF Voltage set below 15 VDC, current may go up to 2A/max.

▲ Heat sink and fan not included. Alternative heat sinking and heat removal must be provided by the user to limit maximum base-plate temperature to 85°C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heat sink to be 2°C/W max.

## MAXIMUM RATINGS<sup>5</sup>

Parameter	Ratings
Operating Temperature (Base Plate) <sup>4</sup>	-40°C to 85°C
Storage Temperature	-55°C to 125°C
Base Plate Temperature	85°C
DC Voltage	+18V
Input RF Power <sup>3</sup> (no damage)	+20 dBm

3. With no load derate max. input power by 20 dB.

4. Base plate is interface of amplifier body to heat sink.

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



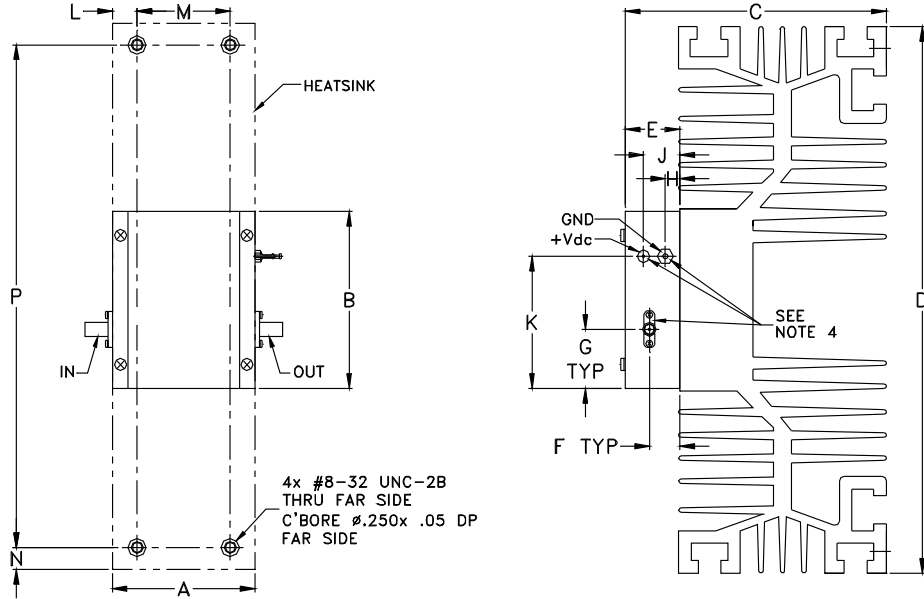


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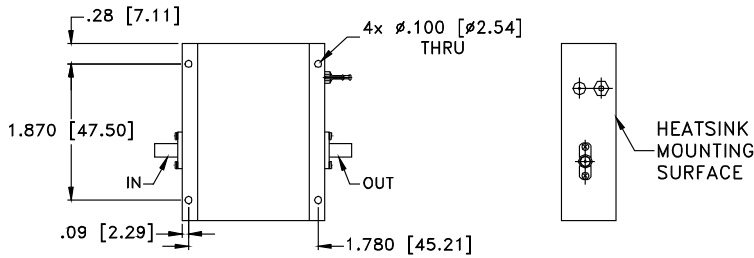
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## ZVE-3W-83+ ZVE-3W-83X+

### OUTLINE DRAWING FOR MODELS WITH HEATSINK (ZVE-3W-83+)



### MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK (ZVE-3W-83X+)



### OUTLINE DIMENSIONS (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	wt
1.960	2.430	3.6	7.5	.74	.42	.81	.20	.49	1.81	0.355	1.250	.30	6.900	grams*
49.78	61.72	91.44	190.50	18.80	10.67	20.57	5.08	12.45	45.97	9.02	31.75	7.62	175.26	875
														*120 grams without heatsink





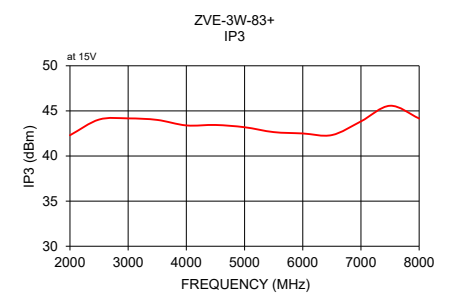
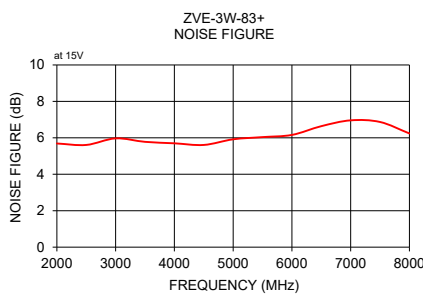
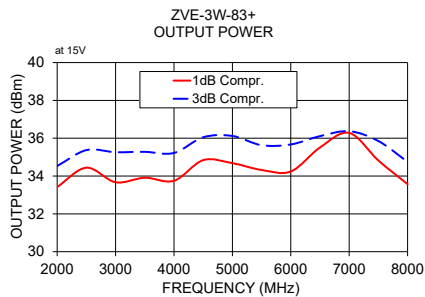
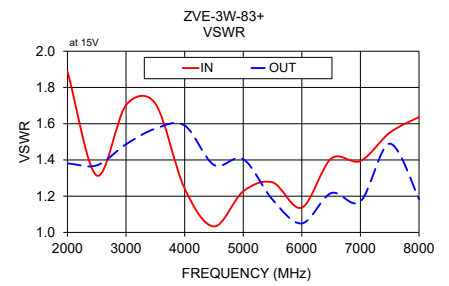
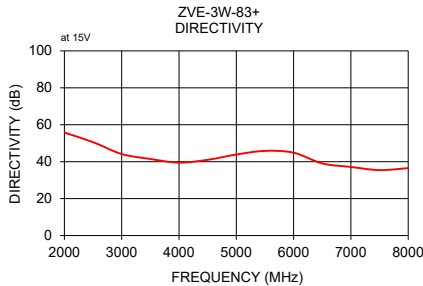
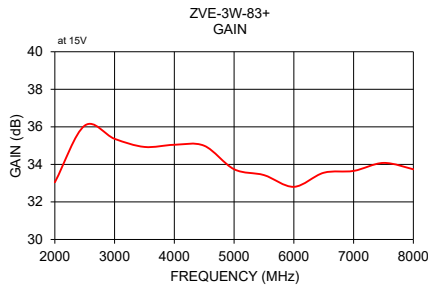
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# High Power Amplifier

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## TYPICAL PERFORMANCE DATA/CURVES

Frequency (MHz)	Gain (dB)	Directivity (dB)	VSWR (:1)		Pout at 1 dB Compr. (dBm)	Pout at 3 dB Compr. (dBm)	Noise Figure (dB)	OIP3 (dBm)
	15V	15V	IN	OUT	15V	15V	15V	15V
2000.00	33.04	55.76	1.89	1.38	33.42	34.53	5.69	42.30
2500.00	36.07	50.59	1.31	1.37	34.44	35.37	5.61	44.04
3000.00	35.36	44.15	1.70	1.49	33.67	35.26	5.97	44.17
3500.00	34.93	41.47	1.71	1.57	33.91	35.28	5.78	44.00
4000.00	35.04	39.47	1.24	1.59	33.75	35.22	5.70	43.39
4500.00	34.99	41.02	1.03	1.37	34.84	36.05	5.61	43.44
5000.00	33.74	43.87	1.23	1.40	34.68	36.12	5.92	43.19
5500.00	33.43	45.85	1.28	1.18	34.32	35.63	6.04	42.65
6000.00	32.80	44.87	1.14	1.05	34.24	35.67	6.16	42.50
6500.00	33.55	39.05	1.41	1.22	35.51	36.11	6.64	42.32
7000.00	33.65	37.15	1.39	1.17	36.28	36.37	6.96	43.84
7500.00	34.08	35.44	1.55	1.49	34.82	35.85	6.87	45.57
8000.00	33.74	36.53	1.64	1.18	33.57	34.75	6.24	44.16



- 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.
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# Coaxial Amplifier

# ZVE-3W-83+

## Typical Performance Data

FREQ. (MHz)	GAIN (dB) 15V	DIRECTIVITY (dB) 15V	VSWR (:1)		NOISE FIGURE (dB) 15V	POUT @ 1 dB COMPRESSION (dBm) 15V	POUT @ 3 dB COMPRESSION (dBm) 15V	OUTPUT IP3 (dBm) 15V
			IN 15V	OUT 15V				
2000.0	34.01	73.37	1.63	1.55	5.69	33.42	34.53	42.30
2500.0	35.02	52.19	1.60	1.48	5.61	34.44	35.37	44.04
3000.0	34.77	43.74	1.57	1.31	5.97	33.67	35.26	44.17
3500.0	35.60	40.56	1.68	1.21	5.78	33.91	35.28	44.00
4000.0	35.73	40.67	1.54	1.12	5.70	33.75	35.22	43.39
4500.0	35.59	48.18	1.21	1.02	5.61	34.84	36.05	43.44
5000.0	35.57	45.70	1.15	1.13	5.92	34.68	36.12	43.19
5500.0	35.44	47.51	1.29	1.29	6.04	34.32	35.63	42.65
6000.0	35.12	47.69	1.44	1.41	6.16	34.24	35.67	42.50
6500.0	35.27	45.95	1.53	1.47	6.64	35.51	36.11	42.32
7000.0	35.29	43.62	1.39	1.40	6.96	36.28	36.37	43.84
7500.0	34.84	42.16	1.48	1.21	6.87	34.82	35.85	45.57
8000.0	33.80	42.17	1.44	1.07	6.24	33.57	34.75	44.16



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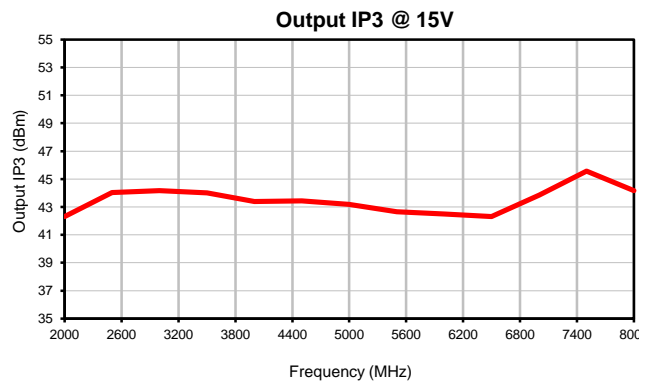
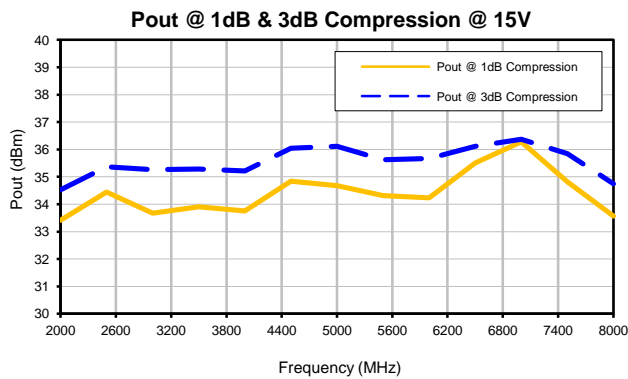
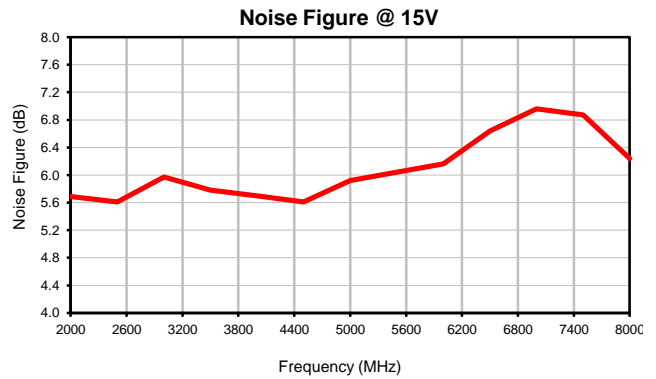
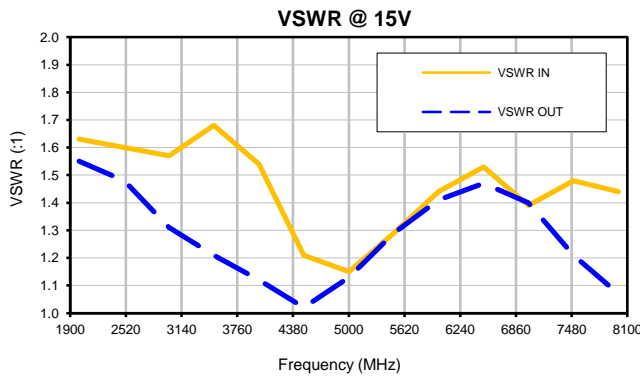
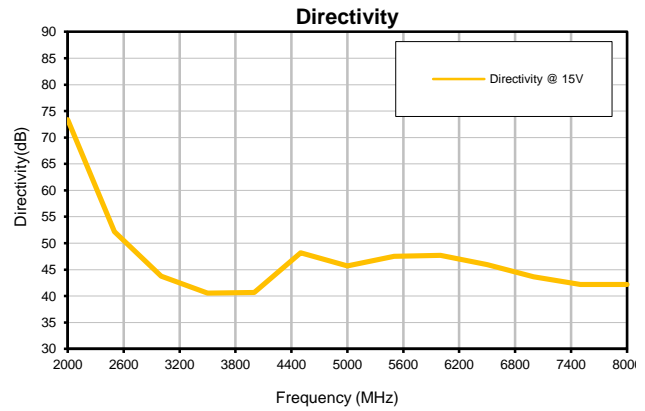
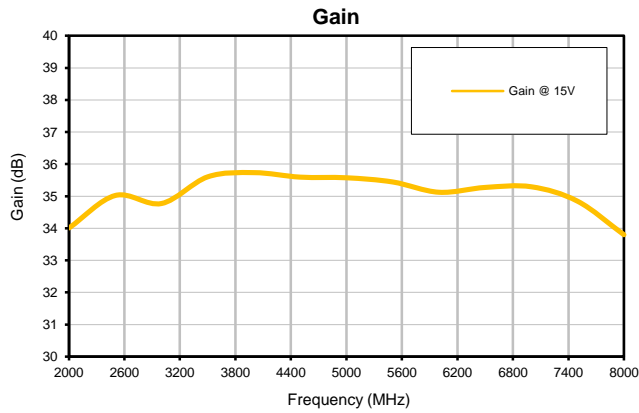
IF/RF MICROWAVE COMPONENTS

REV. OR  
ZVE-3W-83+  
11/22/2013  
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# ZVE-3W-83+

## Typical Performance Curves



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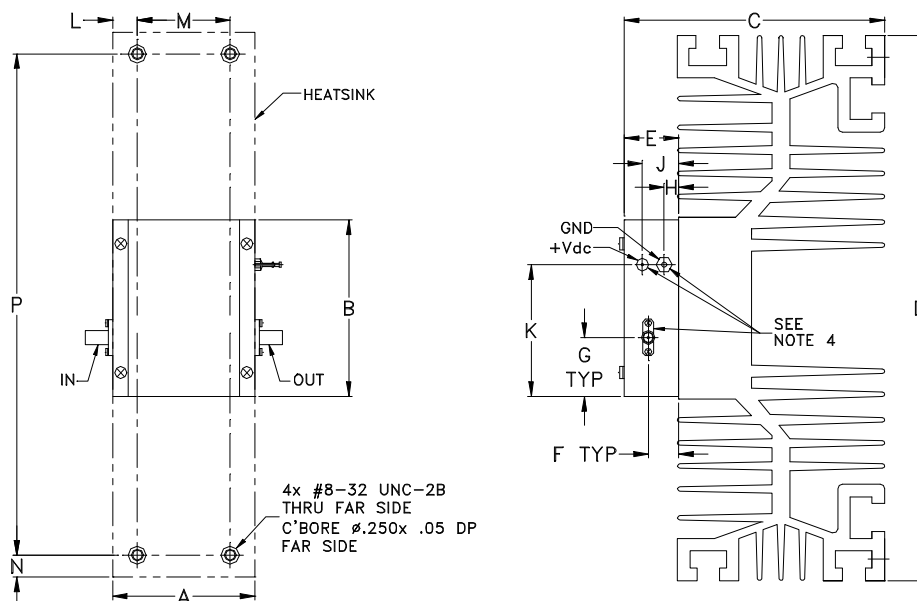
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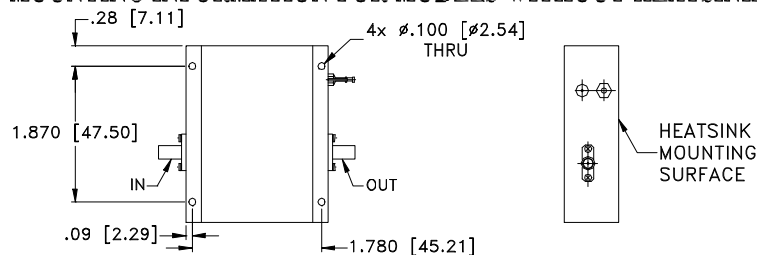
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### Outline Dimensions



#### MOUNTING INFORMATION FOR MODELS WITHOUT HEATSINK



CASE #	A	B	C	D	E	F	G	H	J	K	L
BN1327	1.960 (49.78)	2.430 (61.72)	3.6 (91.44)	7.5 (190.50)	.74 (18.80)	.42 (10.67)	0.81 (20.57)	.20 (5.08)	.49 (12.45)	1.81 (45.97)	.36 (9.02)

CASE #	M	N	P	WT. GRAM	WT. WITHOUT HEATSINK GRAM
BN1327	1.250 (31.75)	.30 (7.62)	6.900 (175.26)	875	120

Dimensions are in inches (mm). Tolerances: 1Pl.  $\pm .1$ ; 2Pl.  $\pm .03$ ; 3 Pl.  $\pm .015$

#### Notes:

1. Case material: Aluminum alloy.
2. Case finish: Nickel plate.
3. Heat sink finish: Black anodize.
4. Shape of mounting flange may vary.



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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	-55° to 85°C base plate temp	Individual Model Data Sheet
Storage Temperature	-65° to 150°C	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107
Vibration (High Frequency)	Category 24, Exposure level figures 514C-17 General use, random, 20-2000Hz, 1 hr per axis	MIL-STD-810, Method 514.5
Mechanical Shock	40Gs, 11ms, 18 shocks: 3 each direction), each axis	MIL-STD-810, Method 516-5-II