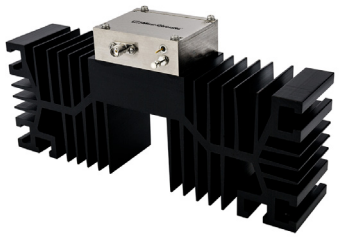
COAXIAL

High Power Amplifier ZVE-3W-183+

50Ω 3 W 5.9 to 18 GHz SMA Female

THE BIG DEAL

- High Power, 3 Watt
- Wideband, 5.9 to 18 GHz
- High IP3, +44 dBm Typ.
- High Dynamic Range
- High Gain, 35 dB Typ.
- Internal Voltage Regulated for +13 to +18 VDC



Generic photo used for illustration purposes only

Model No.	ZVE-3W-183+
Case Style	DN1327
Connectors	SMA female

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- Radar
- Video and Test Instrumentation
- Booster Amplifiers for Lab Test Equipment

PRODUCT OVERVIEW

Mini-Circuits' ZVE-3W-183+ is a Class A, four stage, unconditionally stable amplifier which includes built-in voltage regulation and reverse bias protection for added reliability in un-constrained environments. This model exhibits outstanding performance in system applications as well as being ruggedized to support the stress and abuse associated with lab test environments including the capability to withstand accidental open/short at the output over military vibration and shock levels.

KEY FEATURES

Feature	Advantages
Wide Bandwidth, 5.9 to 18 GHz (Usable Over 5.5 to 18 GHz)	The broad bandwidth for the ZVE-3W-183+ enables full coverage of major EW and Test bands in a single amplifier. This amplifier is ideal for broadband, high frequency EMI test applications or driving multiple modules from a single source.
Output Power: 3 W Typ.	The ZVE-3W-183+ amplifier is capable of delivering 3W CW output making it an ideal driver amplifier for very high power amplifiers such as TWT's or in supporting power handling tests of wide band components such as amplifiers, splitters etc.
Gain: 35 dB Typ.	With high gain, the ZVE-3W-183+is ideal for use in test applications when used together with lab signal generators, enabling it to deliver full power without need of additional driver amplifiers. In system applications, the high gain reduces the number of amplifiers needed resulting in a reduction of mechanical footprint or performance degradation due to VSWR interaction of multiple coaxial components.
Low VSWR: Input 1.5:1 Typ. Output: 1.2:1 Typ.	Low VSWR minimizes interaction effects with adjacent components which can negatively affect the overall gain ripple over such wide bands.
Outstanding Gain Flatness: ±1.4 dB Typ.	Covering a 3:1 bandwidth often results in gain flatness that may require additional circuits for slope compensation. The ZVE-3W-183+ includes internal circuits to ensure tight flatness over the entire 5.9 to 18 GHz band making this amplifier ideal for use in a variety of critical applications.

High Power Amplifier ZVE-3W-183+

50Ω 3 W 5.9 to 18 GHz SMA Female

ELECTRICAL SPECIFICATIONS

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Frequency Range		5900		18000	MHz
Gain	5900-18000	29	35	40	dB
Gain Flatness	5900-18000		±1.4	±2.0	dB
Input VSWR	5900-18000		1.5	2.0	:1
Output VSWR	5900-18000		1.2	2.0	:1
Output Power at 1 dB Compression	5900-18000	+31.5	+34		dBm
Output Power at 3 dB Compression	5900-18000	+32.5	+35		dBm
Output Third Order Intercept Point	5900-18000		+44		dBm
Noise Figure	5900-18000		5.5		dB
DC Supply Voltage		+13	+15	+18	V
Supply Current[1]			1.3	2.2	A

1. Power Supply should be capable of delivering 3 A at startup.

ABSOLUTE MAXIMUM RATINGS

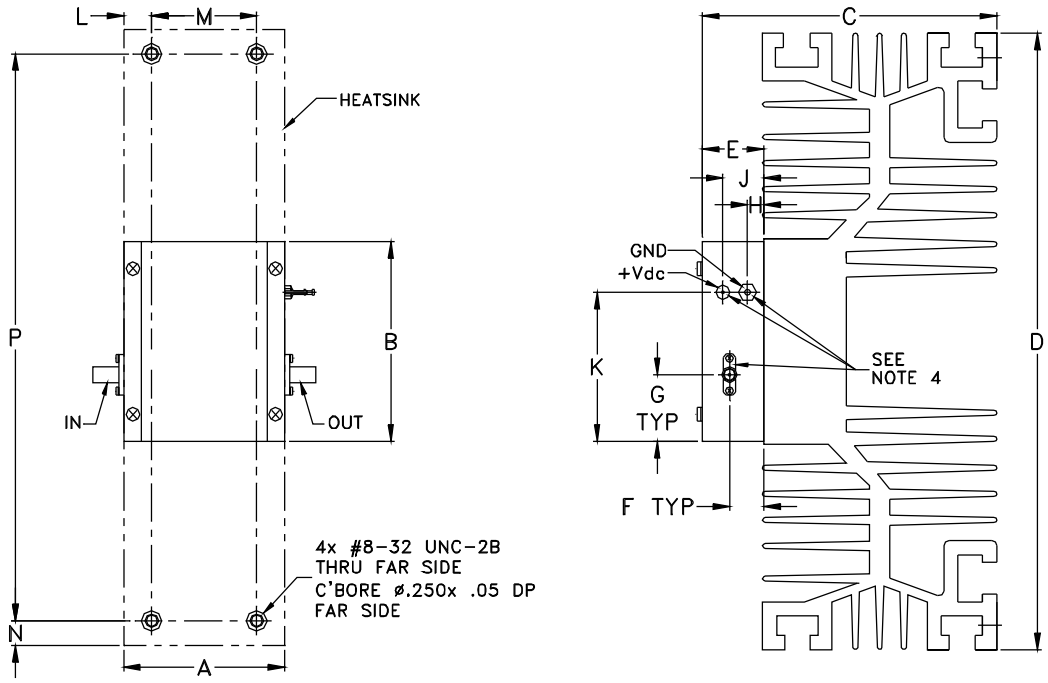
Parameter	Ratings
Operating Ambient Temperature	-40 °C to +55 °C
Storage Temperature	-55 °C to +100 °C
Baseplate Temperature	+85 °C
DC Voltage	+18 V
Input RF Power (No Damage)	+20 dBm

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

High Power Amplifier ZVE-3W-183+

50Ω 3 W 5.9 to 18 GHz SMA Female

OUTLINE DRAWING FOR MODELS WITH HEATSINK (ZVE-3W-183+)



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

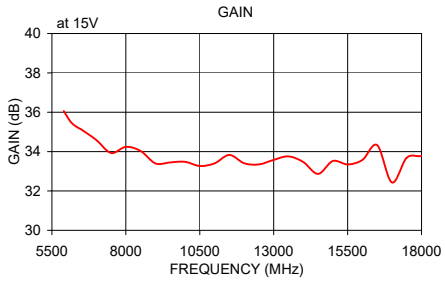
COAXIAL

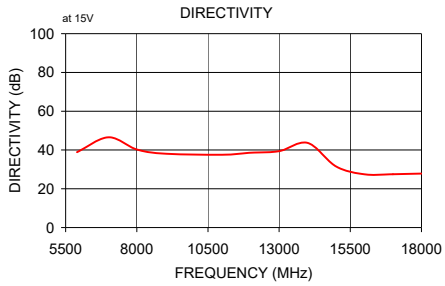
High Power Amplifier ZVE-3W-183+

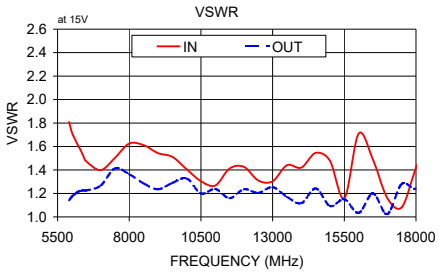
50Ω 3 W 5.9 to 18 GHz SMA Female

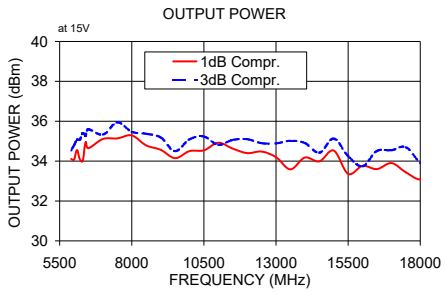
TYPICAL PERFORMANCE DATA/CURVES

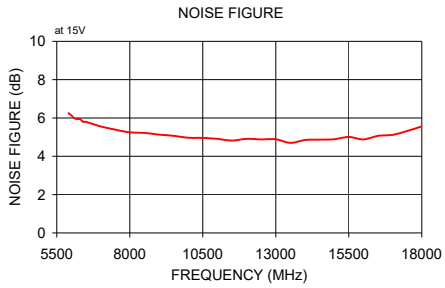
Frequency (MHz)	Gain (dB)	VSWR (:1)		P_{OUT} at 1 dB Compr. (dBm)	Noise Figure (dB)	IP3 (dBm)
	+15 V	IN	OUT	+15 V	+15 V	+15 V
5900	36.06	1.81	1.14	34.11	6.25	42.77
7000	34.59	1.40	1.27	35.11	5.56	43.06
8000	34.24	1.63	1.36	35.29	5.25	43.11
9000	33.40	1.54	1.24	34.57	5.13	43.07
11000	33.40	1.27	1.24	34.92	4.91	42.49
12000	33.41	1.43	1.24	34.40	4.91	42.29
13000	33.58	1.30	1.25	34.20	4.89	41.83
14000	33.47	1.42	1.12	34.18	4.85	42.67
15000	33.52	1.48	1.09	34.53	4.89	43.47
16000	33.58	1.71	1.03	33.76	4.88	43.02
17000	32.43	1.16	1.02	33.90	5.12	43.67
18000	33.78	1.42	1.24	33.08	5.56	43.06

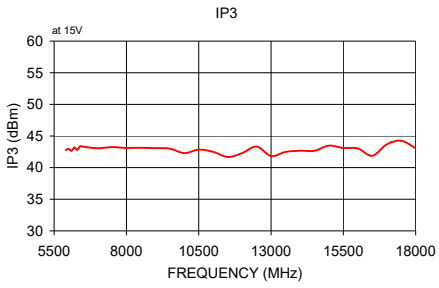












NOTES

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/terms/viewterm.html

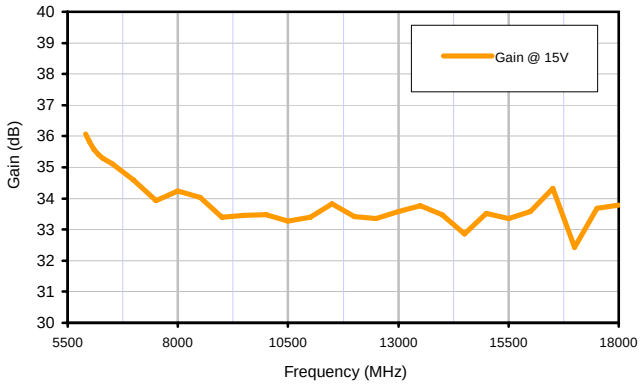
Coaxial High Power Amplifier ZVE-3W-183+

Typical Performance Data

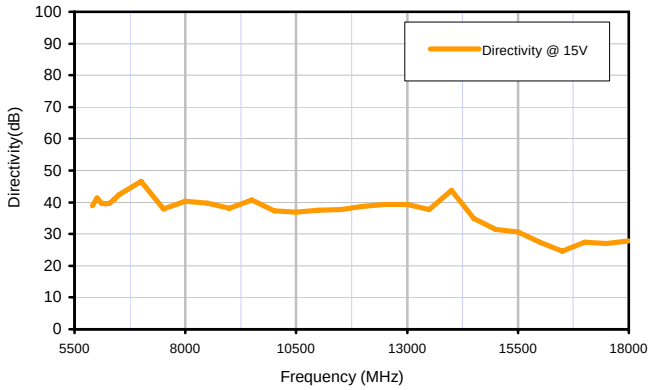
Frequency (MHz)	Gain 15V	Directivity (dB) 15V	VSWR In (:1) 15V	VSWR Out (:1) 15V	Noise Figure (dB) 15V	Pout at 1dB Compression (dBm) 15V	Pout at 3dB Compression (dBm) 15V	Output IP3 (dBm) 15V
5900.0	36.06	38.88	1.81	1.14	6.25	34.11	34.54	42.77
6000.0	35.82	41.39	1.72	1.17	6.13	34.07	34.79	42.96
6100.0	35.58	39.77	1.66	1.19	5.99	34.56	35.07	42.66
6200.0	35.41	39.60	1.62	1.21	5.94	34.09	35.07	43.17
6300.0	35.29	39.69	1.57	1.22	5.94	34.00	35.40	42.81
6400.0	35.20	40.93	1.52	1.23	5.80	34.95	35.26	43.38
6500.0	35.12	42.35	1.47	1.23	5.80	34.65	35.59	43.32
7000.0	34.59	46.56	1.40	1.27	5.56	35.11	35.33	43.06
7500.0	33.93	37.95	1.50	1.41	5.39	35.14	35.94	43.25
8000.0	34.24	40.26	1.63	1.36	5.25	35.29	35.47	43.11
8500.0	34.03	39.76	1.61	1.29	5.22	34.79	35.37	43.13
9000.0	33.40	38.08	1.54	1.24	5.13	34.57	35.19	43.07
9500.0	33.45	40.67	1.51	1.29	5.07	34.15	34.50	43.00
10000.0	33.48	37.27	1.41	1.33	4.97	34.50	35.09	42.29
10500.0	33.27	36.87	1.30	1.20	4.96	34.54	35.23	42.84
11000.0	33.40	37.56	1.27	1.24	4.91	34.92	34.82	42.49
11500.0	33.83	37.78	1.41	1.16	4.82	34.63	35.06	41.69
12000.0	33.41	38.61	1.43	1.24	4.91	34.40	35.10	42.29
12500.0	33.35	39.37	1.31	1.20	4.88	34.48	34.90	43.34
13000.0	33.58	39.38	1.30	1.25	4.89	34.20	34.89	41.83
13500.0	33.76	37.64	1.44	1.17	4.70	33.59	35.02	42.48
14000.0	33.47	43.66	1.42	1.12	4.85	34.18	34.91	42.67
14500.0	32.87	34.97	1.55	1.24	4.87	33.99	34.42	42.67
15000.0	33.52	31.53	1.48	1.09	4.89	34.53	35.13	43.47
15500.0	33.35	30.60	1.16	1.15	5.01	33.36	34.25	43.10
16000.0	33.58	27.48	1.71	1.03	4.88	33.76	33.74	43.02
16500.0	34.33	24.60	1.49	1.20	5.07	33.60	34.51	41.88
17000.0	32.43	27.51	1.16	1.02	5.12	33.90	34.54	43.67
17500.0	33.69	27.08	1.08	1.28	5.32	33.44	34.70	44.25
18000.0	33.78	27.85	1.42	1.24	5.56	33.08	33.91	43.06

Typical Performance Curves

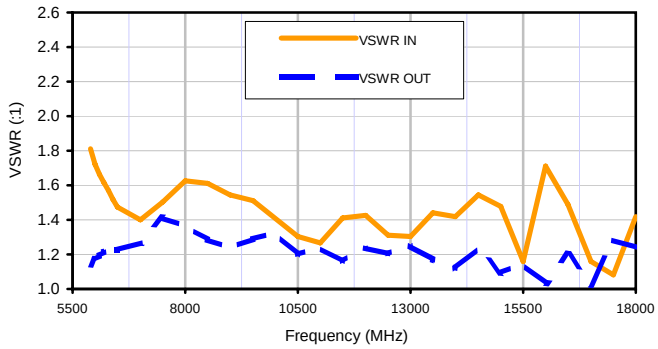
Gain



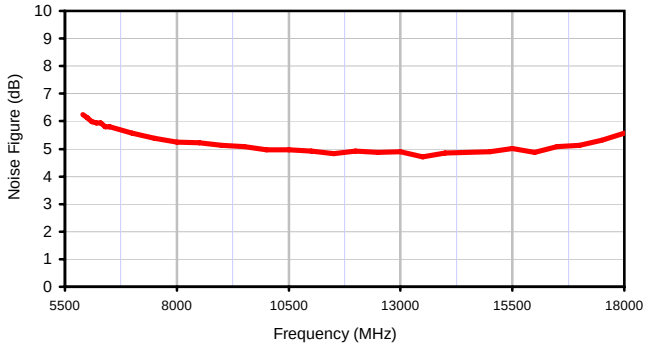
Directivity



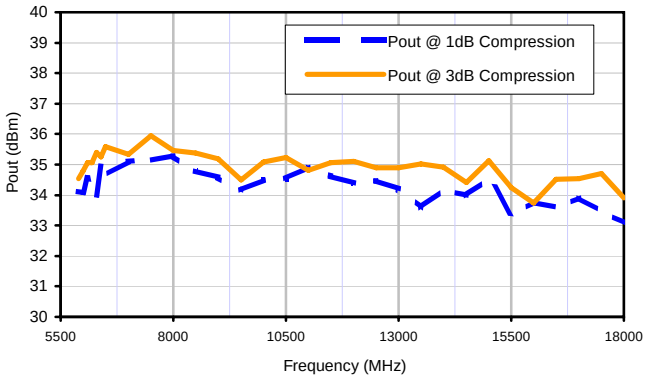
VSWR @ 15V



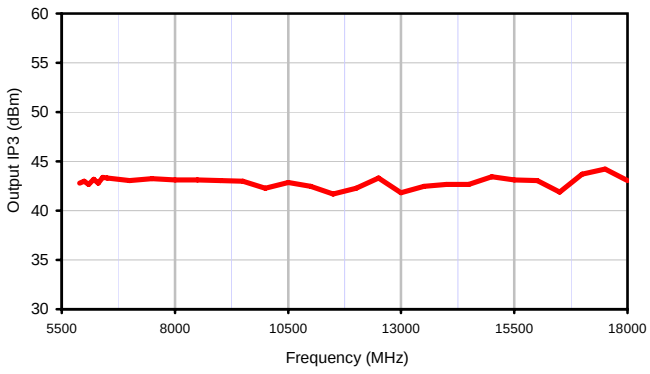
Noise Figure @ 15V



Pout @ 1dB & 3dB Compression @ 15V



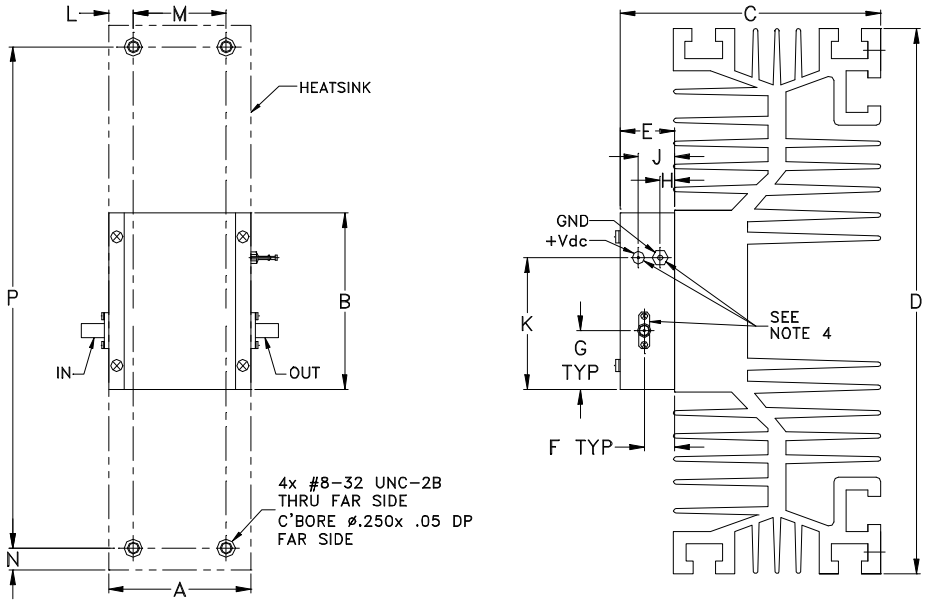
Output IP3 @ 15V



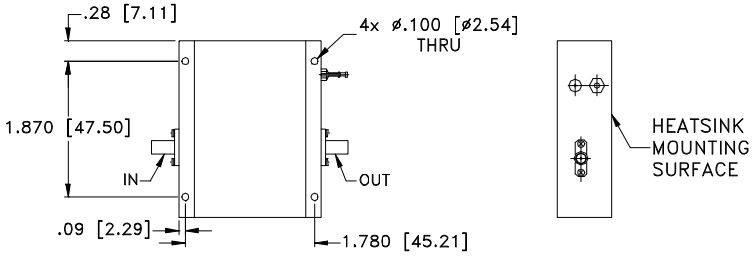
Case Style BN

BN1327

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. ± .1; 2Pl. ± .03; 3 Pl. ± .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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Mini-Circuits

Environmental Specifications ENV39

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

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