

# Coaxial High Power Amplifier

## ZVE-2W-272+

50Ω 2W 700 to 2700 MHz

### The Big Deal

- High Power, 2 Watt
- Wideband, 700 to 2700 MHz
- High Gain, 33 dB typ.
- High IP3, +39.5 dBm typ.



CASE STYLE: CP1978

### Product Overview

Mini-Circuits ZVE-2W-272+ is an unconditionally stable Balanced Class-A amplifier. This ruggedized High Power Amplifier is capable of delivering 2W output signals across the entire operating bandwidth, from 700 MHz to 2700 MHz. Extensive safety features enable this amplifier to survive full reflections at the RF output and to withstand an accidental reverse DC bias.

### Key Features

Feature	Advantages
2W output power @ 3dB compression across 700-2700MHz bandwidth	High power output across broad frequency range supports a wide array of applications.
High Gain, 33 dB typ., good flatness $\pm 1.2$ dB typ. from 800-2300MHz	High, flat gain across entire operating bandwidth for predictable performance and signal level strength. Ideal for broadband or multi-band applications.
High IP3, +39.5 dBm typ.	Provides enhanced linearity over broad frequency range under high signal conditions.
Internal open and short protection circuitry	Antenna mismatches or damaged output cables will not cause the damage of amplifier
Unconditionally stable	No risk of damage to other components from impedance mismatch or internal oscillations. Eliminate the need for any compensating network.



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## ZVE-2W-272+

50Ω    2W    700 to 2700 MHz

### Features

- High Power, 2 Watt
- Wideband, 700 to 2700 MHz
- High Gain, 33 dB typ. and Good Directivity, 33 dB typ.
- Low Noise Figure, +7 dB typ.
- High IP3, +39.5 dBm typ.
- Unconditionally stable
- Internal voltage regulated from 13 to 18 VDC

### Applications

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



Model No.	ZVE-2W-272+	▲ZVE-2W-272X+
Case Style	CP1978	
Connectors	SMA-Female	
Price (Qty.)	\$1,095.00 ea. (1-9)	\$1,020.00 ea. (1-9)

### +RoHS Compliant

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

### Electrical Specifications<sup>1</sup> at 25°C

Parameter	Condition (MHz)	ZVE-2W-272+ ▲ZVE-2W-272X+			Units
		Min.	Typ.	Max.	
Frequency Range		700		2700	MHz
Gain	700	27	29	35	dB
	800	30	33.5	40	
	1000	30	35.5	40	
	1600	30	33.5	40	
	2200	30	33.5	40	
Gain Flatness	800 - 2300		±1.2		dB
	700 - 2700		±3.3	±4.0	
Input VSWR	700		1.9		:1
	800		1.9		
	1000		1.7		
	1600		1.6		
	2200		1.6		
Output VSWR	700		1.2		:1
	800		1.2		
	1000		1.2		
	1600		1.25		
	2200		1.4		
Reverse Isolation	700		68.5		dB
	800		68.5		
	1000		68.5		
	1600		67.5		
	2200		70		
Output Power at 1dB Compression	700	28	29.5		dBm
	800	29	31.5		
	1000	31	33		
	1600	31	33		
	2200	31	33		
Output Power at 3 dB Compression	700	30	31.5		dBm
	800	31	33		
	1000	32	34		
	1600	32	34		
	2200	32	34		
Output IP3 <sup>2</sup>	700		37.5		dBm
	800		39.5		
	1000		41.5		
	1600		41		
	2200		39.5		
Noise Figure	700		9.5		dB
	800		6.5		
	1000		4.0		
	1600		3.0		
	2200		2.5		
Device Operating Voltage (Vcc)		13	15	18	V
Device Operating Current <sup>3</sup>			600	800	mA
Device Current Variation vs. Temperature			0.15		mA/°C
Device Current Variation vs. Voltage			32.6		mA/V
Thermal Resistance, junction-to-case			23.5		°C/W

1. All specifications are for a single input CW Signal. At nominal output load, 15V nominal supply voltage. An open or short load is not recommended, potentially can cause damage.

2. Measured with 2 tones, 1 MHz apart, +10dBm/tone.

3. Current may rise up to 1.5A during startup.

▲ Heat sink 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 4°C/W max.

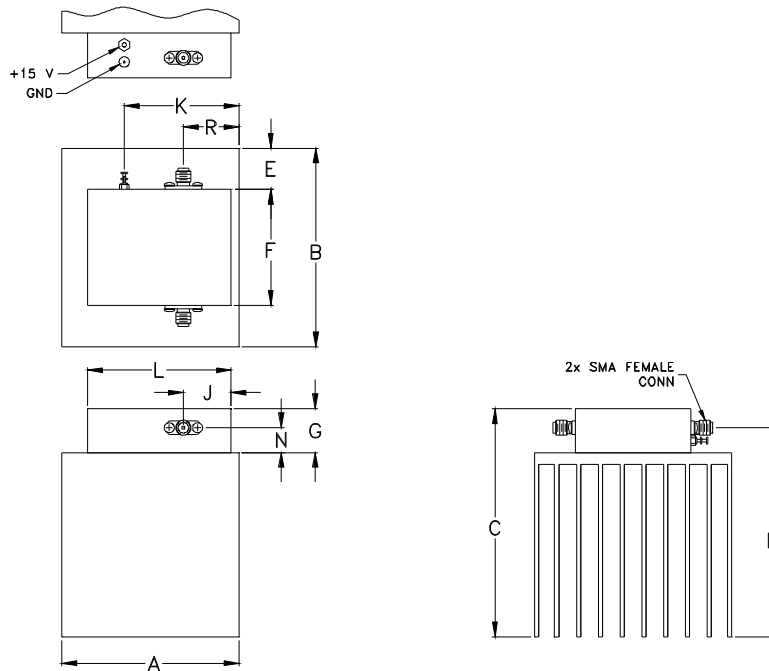


## Maximum Ratings

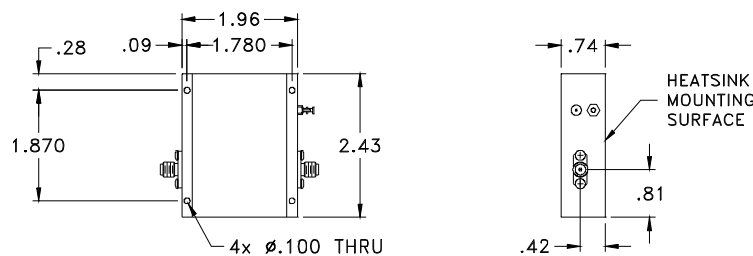
Parameter	Ratings
Operating Temperature (Base Plate)	-40°C to 85°C
Storage Temperature	-55°C to 125°C
Base Plate Temperature	85°C
DC Voltage	+18V
Operating Current at 15V	1.5A
Input RF Power (no damage)	+10 dBm

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

## Outline Drawing for model with heatsink



## Outline Drawing for model without heatsink



## Outline Dimensions (inch/mm)

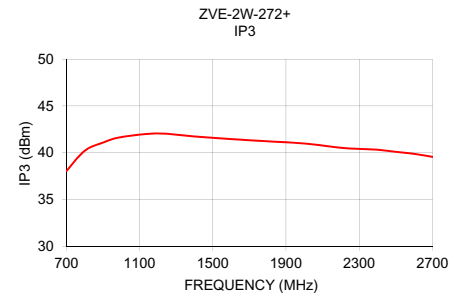
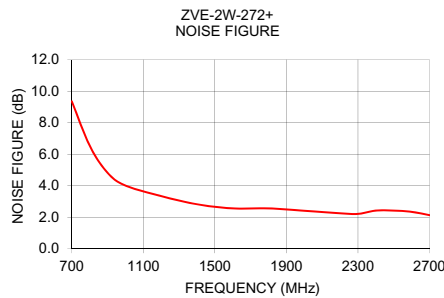
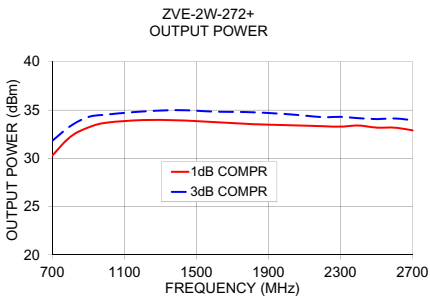
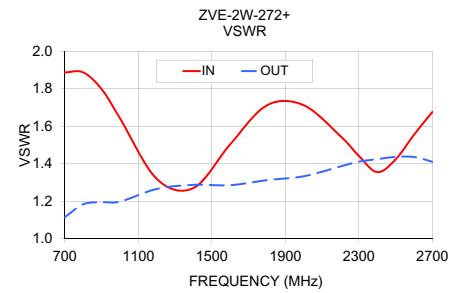
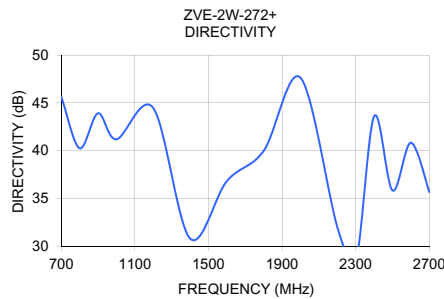
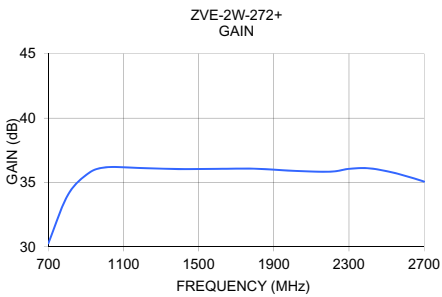
A	B	C	D	E	F	G	H	J	K
3.00	3.36	3.86	3.54	.69	1.96	.74	--	.81	1.94
76.20	85.34	98.04	89.92	17.53	49.78	18.80	--	20.57	49.28

L	M	N	P	Q	R	S	T	wt
2.43	--	.42	--	--	.94	--	--	grams*
61.72	--	10.67	--	--	23.88	--	--	530.0

\*120 grams without heatsink

## Typical Performance Data

FREQUENCY (MHz)	GAIN (dB)	DIRECTIVITY (dB)	VSWR (:1)		POUT at 1 dB COMPR. (dBm)	POUT at 3 dB COMPR. (dBm)	NOISE FIGURE (dB)	IP3 (dBm)
	15V	15V	IN	OUT	15V	15V	15V	15V
700	30.3	45.6	1.9	1.1	30.3	31.8	9.4	38.0
800	33.9	40.3	1.9	1.2	32.2	33.3	6.5	40.2
900	35.6	43.9	1.8	1.2	33.2	34.3	4.8	41.1
1000	36.2	41.2	1.6	1.2	33.7	34.5	4.0	41.7
1200	36.1	44.5	1.3	1.3	34.0	34.9	3.3	42.1
1400	36.0	30.8	1.3	1.3	33.9	35.0	2.8	41.7
1600	36.1	36.8	1.5	1.3	33.8	34.8	2.6	41.5
1800	36.1	40.0	1.7	1.3	33.6	34.8	2.6	41.2
2000	35.9	47.6	1.7	1.3	33.4	34.6	2.4	41.0
2200	35.8	32.0	1.5	1.4	33.3	34.3	2.3	40.5
2300	36.1	28.4	1.4	1.4	33.3	34.3	2.2	40.4
2400	36.1	43.6	1.4	1.4	33.4	34.2	2.4	40.3
2500	35.9	35.8	1.4	1.4	33.2	34.1	2.4	40.1
2600	35.5	40.8	1.6	1.4	33.2	34.1	2.3	39.9
2700	35.1	35.7	1.7	1.4	32.9	34.0	2.1	39.6



### Additional Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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](http://www.minicircuits.com/MCLStore/terms.jsp)