COAXIAL

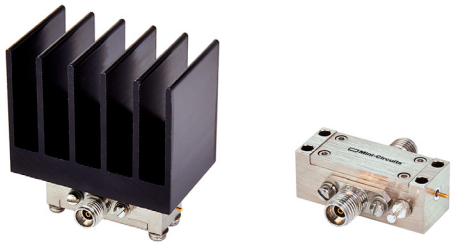
Wideband Amplifier

ZVE-373LN-K+
ZVE-373LNX-K+

50Ω 28 to 37 GHz 2.92 mm Female

THE BIG DEAL

- Extremely Wideband, 28 to 37 GHz
- Flat Gain, 20 ±1.5 dB Typ.
- High OIP3, +20 dBm Typ.
- P_{OUT} at 1 dB Compression, +9 dBm Typ.



Generic photo used for illustration purposes only

Model No.	ZVE-373LN-K+	ZVE-373LNX-K+▲
Option	With Heatsink	Without Heatsink
Case Style	AV1280-1	
Connectors	2.92 mm (K-Type) Female	

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

APPLICATIONS

- Radar and Military
- 5G mmW
- KA Band Satellite Repeaters

PRODUCT OVERVIEW

Mini-Circuits' ZVE-373LN(X)-K+ is a Class A, three-stage, unconditionally stable amplifier providing flat gain over an extremely wide frequency range from 28 to 37 GHz. This model is capable of delivering up to 9 mW output power at P1dB with high output IP3 supporting a wide range of sensitive, high-dynamic range receiver applications and many systems where high performance over wideband is needed. It operates on a +12 V supply and features built-in safety features including protection against reverse bias and immunity to accidental open or short loads for 2 minutes. The amplifier comes in a rugged, compact case (1.2 × 0.46 × 0.45") with K-type (2.92 mm) connectors and an optional heatsink for efficient cooling.

KEY FEATURES

Feature	Advantages
Wideband, 28 to 37 GHz Operates from 25 to 40 GHz	Enables a single amplifier to be used in a wide range of applications.
Excellent Gain Flatness, ±1.5 dB Across Full Frequency Range	Provides consistent performance across its operating frequency range, minimizing the need for external equalizing networks in wideband applications.
High Gain, 20 dB Typ.	Reduces the number of gain stages, lowering component count and overall system cost.
Class A Amplifier	Provides good linearity with low signal distortion.
Low Noise and High OIP3: • NF, 2.5 dB Typ. • OIP3, +20 dBm Typ.	The combination of low noise and high OIP3 makes the ZVE-373LN-K+ ideal for use in low-noise receiver front end (RFE) as it gives the user the advantages of sensitivity and two-tone IM performance at both ends of the dynamic range.
Rugged Design	Built-in protection against reverse bias and accidental open and short loads provides added reliability for demanding operating conditions.

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ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter	Condition (GHz)	ZVE-373LN-K+ ZVE-373LNX-K+▲ Min.	Typ.	Max.	Units
Frequency Range		28		37	GHz
Noise Figure	28–37	–	2.5	3.5	dB
Gain	28–37	17	20	25	dB
Gain Flatness	28–37	–	±1.5	±2.5	dB
Output Power at 1 dB Compression	28–37	–	+9	–	dBm
Output Third Order Intercept Point	28–37	–	+20	–	dBm
Input VSWR	28–37	–	1.5	2.5	:1
Output VSWR	28–37	–	1.4	2.5	:1
DC Supply Voltage	–	–	+12[1]		V
Supply Current	–	–	75	106	mA

1. Recommended operating voltage.

▲ Heatsink not included. Alternative heatsinking and heat removal must be provided by the user to limit maximum baseplate temperature to +85 °C, in order to ensure proper performance. For reference, this requires thermal resistance of user's external heatsink to be 20 °C/W max.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	ZVE-373LN-K+ -40 °C to +60 °C Ambient ZVE-373LNX-K+ -40 °C to +85 °C Baseplate Temperature
Storage Temperature	-65 °C to +150 °C
DC Voltage	+15 V
CW Input RF Power (No Damage)	+5 dBm (25–32 GHz) -1 dBm (32–40 GHz)

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

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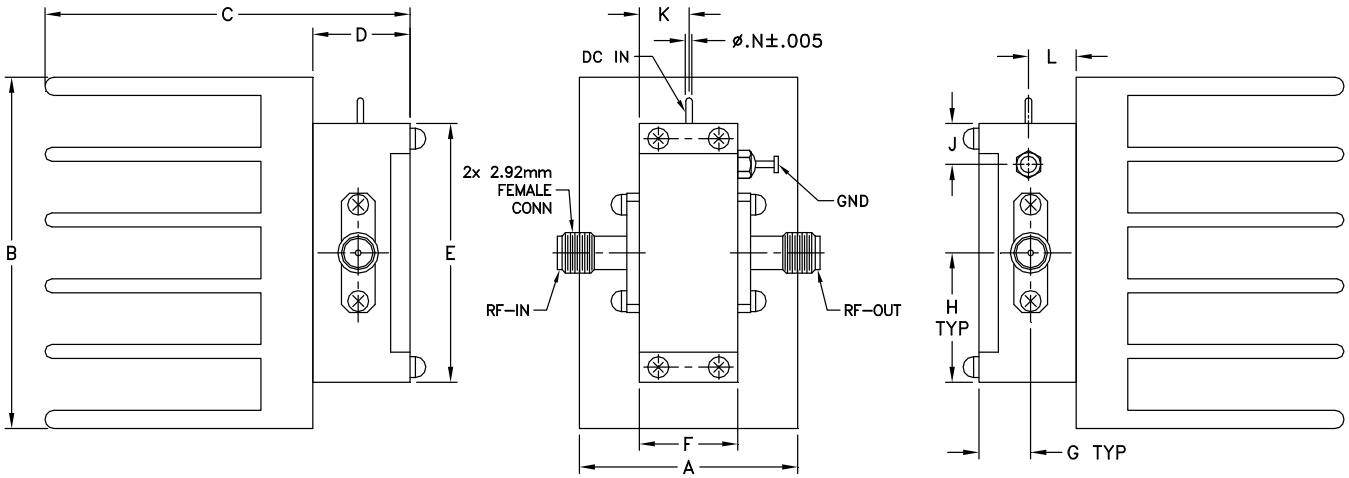
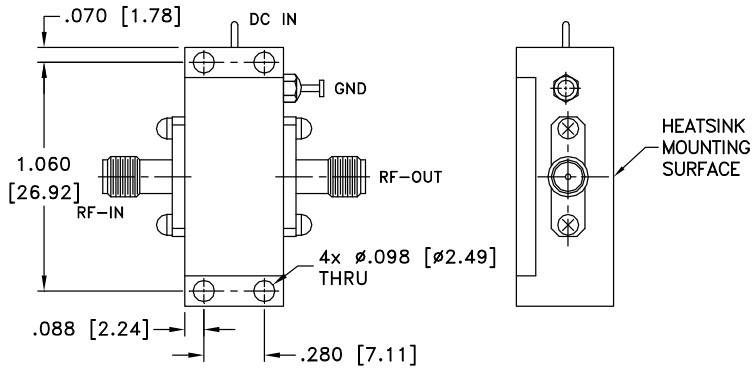
OUTLINE DRAWING FOR MODEL WITH HEATSINK (ZVE-373LN-K+)



MOUNTING INFORMATION FOR MODEL WITHOUT HEATSINK (ZVE-373LNX-K+)



OUTLINE DIMENSIONS (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	wt
1.01	1.63	1.74	.45	1.20	.46	.24	.60	.19	.23	.27	-	.03	grams*
25.65	41.40	44.20	11.43	30.48	11.68	6.10	15.24	4.83	5.84	6.86	-	0.76	58

*17 grams without heatsink

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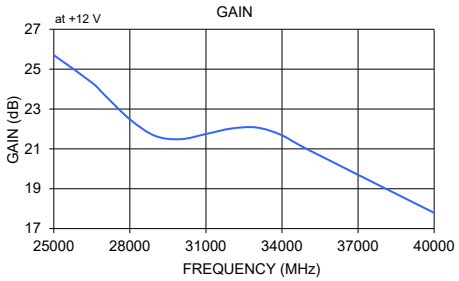
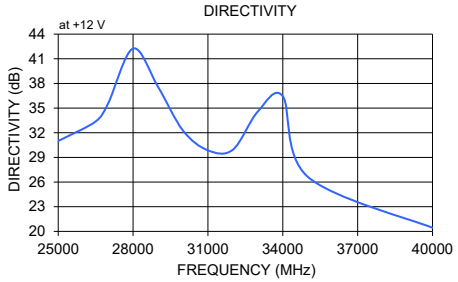
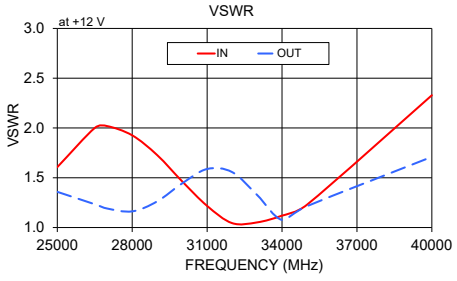
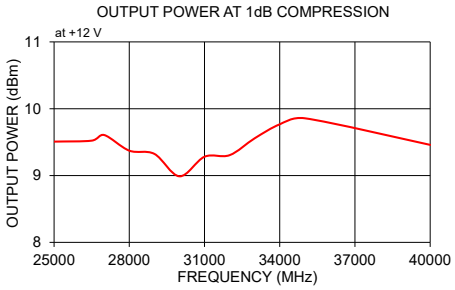
TYPICAL PERFORMANCE DATA/CURVES

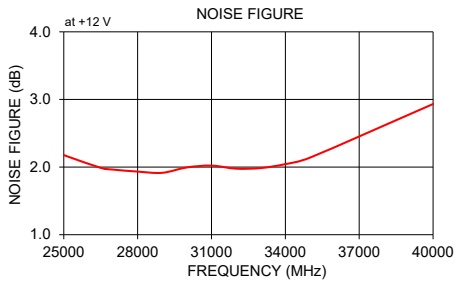
Frequency (MHz)	Gain (dB)	Directivity (dB)	VSWR (:1)		P_{OUT} at 1 dB Compr. (dBm)	Noise Figure (dB)	OIP3 (dBm)
	+12 V	+12 V	IN	OUT	+12 V	+12 V	+12 V
25000	25.70	30.99	1.61	1.36	9.51	2.18	21.51
26500	24.33	33.38	2.00	1.23	9.52	1.99	21.60
27000	23.71	35.57	2.02	1.19	9.61	1.96	21.87
28000	22.48	42.25	1.93	1.16	9.37	1.93	21.90
29000	21.65	37.59	1.73	1.26	9.32	1.92	21.39
30000	21.49	32.27	1.46	1.44	8.99	1.99	20.66
31000	21.74	29.86	1.22	1.59	9.28	2.02	22.19
32000	22.02	29.94	1.04	1.56	9.30	1.98	21.87
33000	22.07	34.58	1.05	1.33	9.56	1.99	22.18
34000	21.68	36.44	1.12	1.08	9.77	2.04	22.01
35000	20.98	26.64	1.23	1.21	9.86	2.14	22.69
37000	19.83	20.34	1.49	1.44	9.76	2.36	20.86
40000	17.79	20.44	2.33	1.71	9.46	2.93	11.65

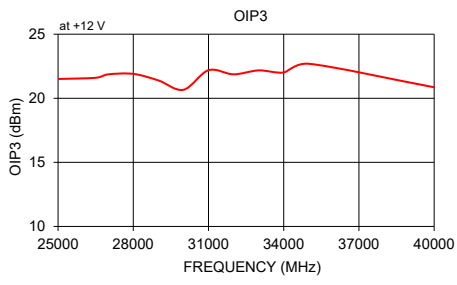












NOTES

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-Circuits' 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