

# Surface Mount RF Transformer

50Ω

5 to 500 MHz

TC4-1W-7ALN+



CASE STYLE: AT224-1  
PRICE: \$1.19 ea. QTY (100)

+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS  
Compliance. See our web site for RoHS Compliance  
methodologies and qualifications.

## Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	150mA

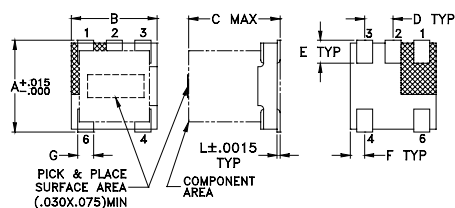
\*Applied through center tap, equal current to secondary dot & secondary.

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

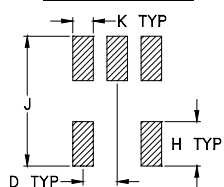
## Pin Connections

PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
SECONDARY CT	2
NOT USED	5

## Outline Drawing AT224-1



## PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

## Outline Dimensions (inch)

A	B	C	D	E	F
.150	.150	.160	.050	.040	.025
3.81	3.81	4.06	1.27	1.02	0.64
G	H	J	K	L	wt
.028	.065	.190	.030	.007	grams
0.71	1.65	4.83	0.76	0.18	0.15

## Features

- good return loss
- impedance matching
- plastic base with leads
- aqueous washable

## Applications

- wireless infrastructure
- Impedance matching

## Transformer Electrical Specifications

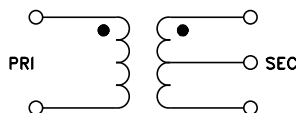
Ω RATIO (Secondary/Primary)	FREQUENCY (MHz)	INSERTION LOSS		
		3 dB MHz	2 dB MHz	1 dB MHz
4	5-500	5-500	10-300	25-200

Note: Electrical specifications defined with DC current at secondary and secondary dot equal.  
For DC imbalance of up to 7.5mA, the insertion loss degrades less than 1 dB.

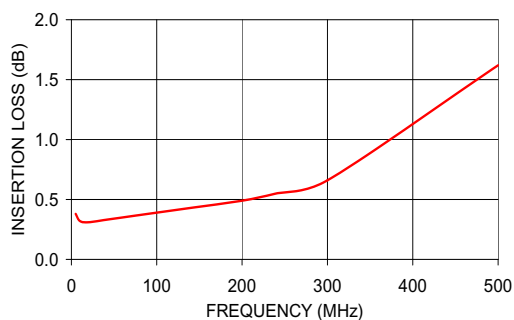
## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
5.0	0.38	28.17
10.0	0.32	31.57
20.0	0.31	34.24
40.0	0.33	35.27
80.0	0.37	33.01
140.0	0.43	28.01
200.0	0.49	23.35
300.0	0.66	17.23
400.0	1.02	12.75
500.0	1.62	9.57

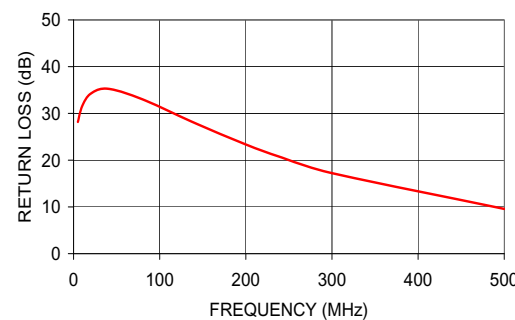
## Config. A



TC4-1W-7ALN+  
INSERTION LOSS



TC4-1W-7ALN+  
RETURN LOSS



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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).

For detailed performance specs  
& shopping online see web site

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