

# Surface Mount RF Transformer

## TC4-1W-7ALN+

50Ω

5 to 500 MHz



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

### Maximum Ratings

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

\*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 |

### Features

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

### Applications

- wireless infrastructure
- Impedance matching

#### +RoHS Compliant

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

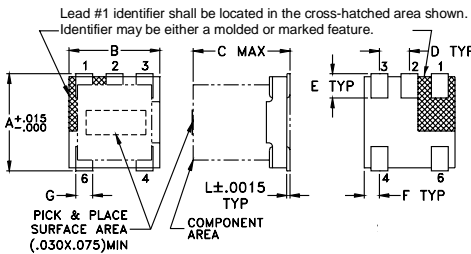
|  |                       |
|--|-----------------------|
| Available Tape and Reel at no extra cost |                       |
| Reel Size                                | Devices/Reel          |
| 7"                                       | 20, 50, 100, 200, 500 |
| 13"                                      | 1000, 2000            |

### Transformer Electrical Specifications

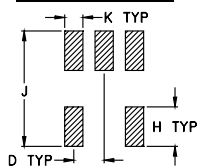
| Ω<br>RATIO<br>(Secondary/Primary) | FREQUENCY<br>(MHz) | INSERTION LOSS |             |             |
|-----------------------------------|--------------------|----------------|-------------|-------------|
|                                   |                    | 3 dB<br>MHz    | 2 dB<br>MHz | 1 dB<br>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.

### 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 |

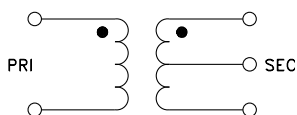
  

| G    | H    | J    | K    | L    | wt    |
|------|------|------|------|------|-------|
| .028 | .065 | .190 | .030 | .007 | grams |
| 0.71 | 1.65 | 4.83 | 0.76 | 0.18 | 0.15  |

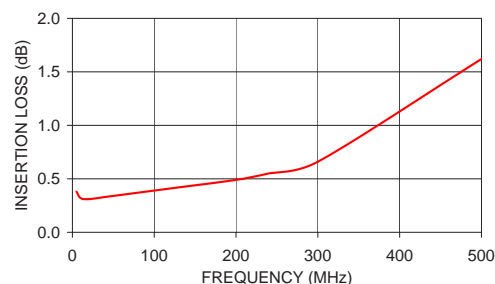
### Typical Performance Data

| FREQUENCY<br>(MHz) | INSERTION<br>LOSS<br>(dB) | INPUT<br>R. LOSS<br>(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                     |

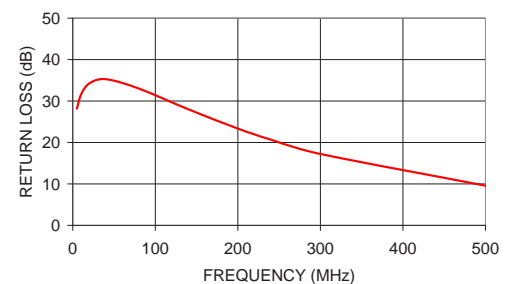
### Config. A



TC4-1W-7ALN+  
INSERTION LOSS



TC4-1W-7ALN+  
RETURN LOSS



### 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.
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