

# Surface Mount RF Transformer

## TC4-19+

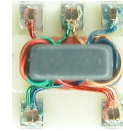
50Ω 10 to 1900 MHz

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -20°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power              | 0.25 W         |
| DC Current            | 30 mA          |

### Pin Connections

|               |   |
|---------------|---|
| PRIMARY DOT   | 6 |
| PRIMARY       | 4 |
| SECONDARY DOT | 3 |
| SECONDARY     | 1 |
| SECONDARY CT  | 2 |



CASE STYLE: AT224-1  
PRICE: \$1.09 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.

### Features

- wideband, 10-1900 MHz
- balanced transmission line with secondary center tap
- plastic base with leads
- aqueous washable

### Applications

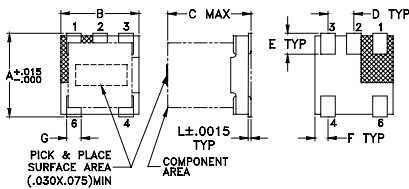
- PCS
- cellular

### Transformer Electrical Specifications

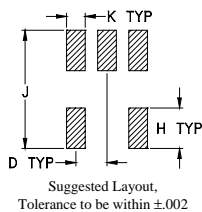
| Ω<br>RATIO<br>(Secondary/Primary) | FREQ.<br>(MHz) | INSERTION LOSS* |             |             | PHASE<br>UNBALANCE<br>(Deg.)<br>Typ. |                   | AMPLITUDE<br>UNBALANCE<br>(dB)<br>Typ. |                   |
|-----------------------------------|----------------|-----------------|-------------|-------------|--------------------------------------|-------------------|--|-------------------|
|                                   |                | 3 dB<br>MHz     | 2 dB<br>MHz | 1 dB<br>MHz | 1 dB<br>bandwidth                    | 2 dB<br>bandwidth | 1 dB<br>bandwidth                      | 2 dB<br>bandwidth |
| 4                                 | 10-1900        | 10-1900         | 20-1000     | 30-700      | 4                                    | 6                 | 0.3                                    | 0.5               |

\* Insertion Loss is referenced to mid-band loss, 1.0 dB typ.

### Outline Drawing AT224-1



### PCB Land Pattern



### Outline Dimensions (inch/mm)

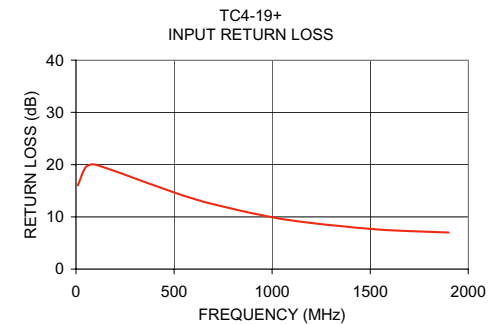
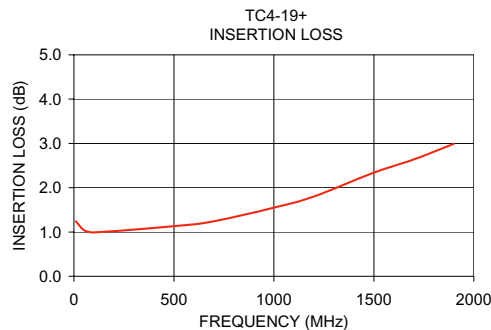
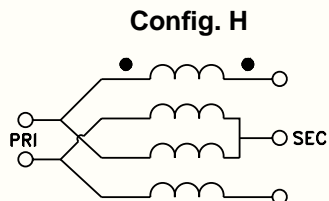
| A    | B    | C    | D    | E    | F    |
|------|------|------|------|------|------|
| .150 | .150 | .160 | .050 | .040 | .025 |
| 3.81 | 3.81 | 4.06 | 1.27 | 1.02 | 0.64 |

| 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 (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 10.00           | 1.24                | 16.03              | 0.06                     | 0.03                   |
| 50.00           | 1.04                | 19.54              | 0.04                     | 0.39                   |
| 100.00          | 0.99                | 19.98              | 0.01                     | 0.83                   |
| 500.00          | 1.13                | 14.68              | 0.02                     | 3.20                   |
| 700.00          | 1.24                | 12.43              | 0.17                     | 3.49                   |
| 1000.00         | 1.55                | 9.92               | 0.49                     | 3.74                   |
| 1200.00         | 1.80                | 8.83               | 0.85                     | 3.53                   |
| 1500.00         | 2.34                | 7.69               | 1.47                     | 3.59                   |
| 1700.00         | 2.64                | 7.26               | 1.74                     | 4.43                   |
| 1900.00         | 2.99                | 7.01               | 1.95                     | 4.99                   |



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

ALL NEW  
minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

RF/IF MICROWAVE COMPONENTS

REV. B  
M111888  
TC4-19+  
IG/TD/CP  
080206