

Surface Mount  **RF Transformer**

50Ω 10 to 1900 MHz

**TC4-19X+**




Generic photo used for illustration purposes only

CASE STYLE: AT1521

**+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

**Features**

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

**Applications**

- PCS
- cellular

**Electrical Specifications at 25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
<b>Impedance Ratio</b> (secondary/primary)			4		
<b>Frequency Range</b>		10		1900	MHz
<b>Insertion Loss*</b>	10-1900		3		dB
	20-1000		2		
	30-700		1		
<b>Amplitude Unbalance</b>	30-700		0.3		dB
	20-1000		0.5		
<b>Phase Unbalance</b>	30-700		4		Degree
	20-1000		6		

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

**Maximum Ratings**

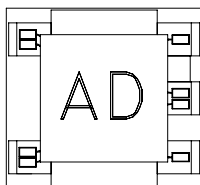
Parameter	Ratings
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

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

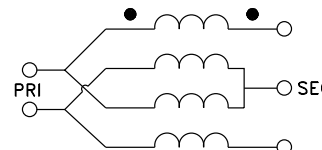
**Pin Connections**

Function	Pin Number
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	3
SECONDARY	1
SECONDARY CT	2

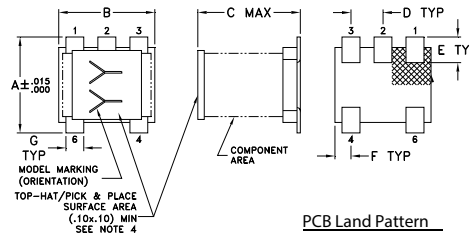
**Product Marking**



**Config. H**



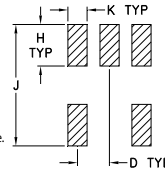
## Outline Drawing



**Note:**

1. Case Material Plastic
2. Termination Finish: Tin plate over Nickel plate.
3. Lead #1 identifier shall be located in the cross-hatched area shown, on bottom view. Identifier may be either a molded or marked feature.
4. Top-Hat total thickness: 0.13 inches max.

### PCB Land Pattern



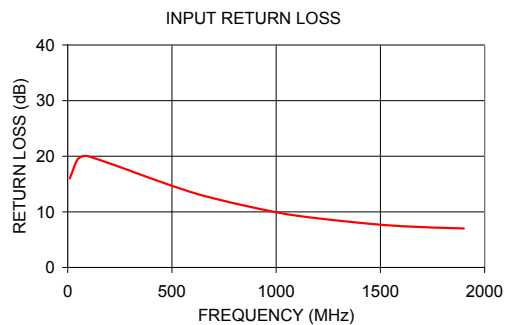
Suggested Layout,  
Tolerance to be within  $\pm .002$

## 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	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	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



## Additional 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-Circuit's 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)