

# Surface Mount RF Transformer

50Ω 47 to 1000 MHz

## Maximum Ratings

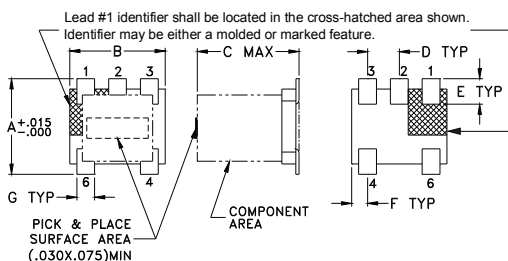
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	100mA*

Permanent damage may occur if any of these limits are exceeded.  
\*Equal current must be applied in opposite directions to individual windings.

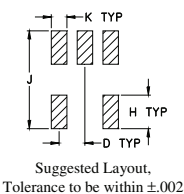
## Pin Connections

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

## Outline Drawing AT224-1A



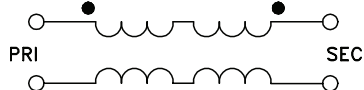
## PCB Land Pattern



## 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	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	0.15	

## Config. G



## Features

- wideband, 47 to 1000 MHz
- balanced transmission line
- good return loss
- excellent amplitude unbalance, 0.5 dB typ. and phase unbalance, 2 deg typ. in 1 dB bandwidth
- plastic base with leads
- aqueous washable

## Applications

- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- MMDS

## Transformer Electrical Specifications (T<sub>AMB</sub> = 25°C)

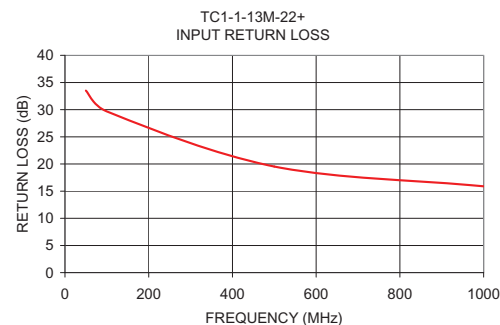
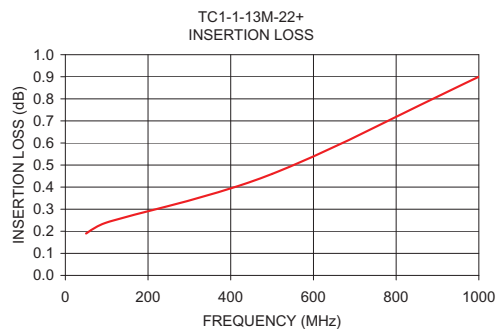
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE ** UNBALANCE (Deg.) Typ. 1 dB bandwidth	AMPLITUDE ** UNBALANCE (dB) Typ. 1 dB bandwidth
		3 dB MHz	2 dB MHz	1 dB MHz		
1	47-1000	—	—	47-1000	2	0.5

\* Insertion Loss is referenced to mid-band loss, 0.5 dB typ. DC current imbalance less than 3% between windings.

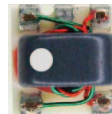
\*\* At 30mA max.

## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
50.00	0.19	33.50	0.56	0.11
100.00	0.24	29.68	0.55	0.19
500.00	0.46	19.52	0.45	0.81
1000.00	0.68	16.22	0.14	1.59



TC1-1-13M-22+



CASE STYLE: AT224-1A  
PRICE: \$1.99 ea. QTY (20)  
\$0.99 ea. QTY (100)

## +RoHS Compliant

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



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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-Circuit's 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).

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