

Surface Mount RF Transformer

50Ω 47 to 1000 MHz

TC1-1-13M-22+

Maximum Ratings

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

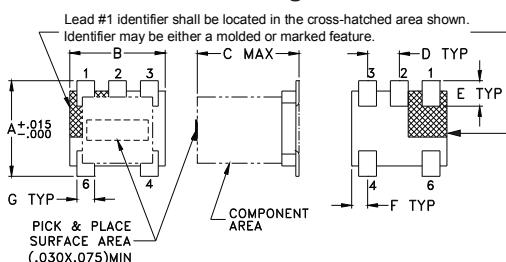
Permanent damage may occur if any of these limits are exceeded.

*Equal current must be applied in opposite directions to individual windings.

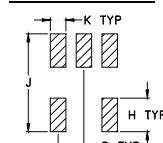
Pin Connections

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

Outline Drawing AT224-1A



PCB Land Pattern

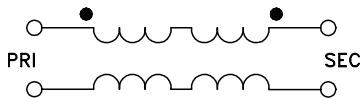


Outline Dimensions (inches mm)

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

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



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

Transformer Electrical Specifications (T_{AMB}=25°C)

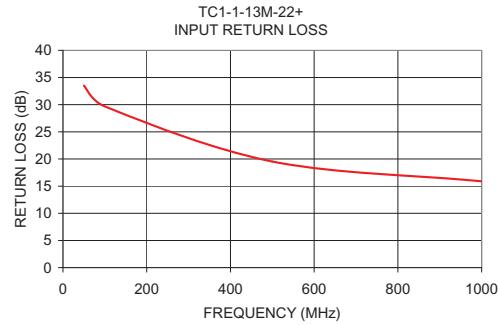
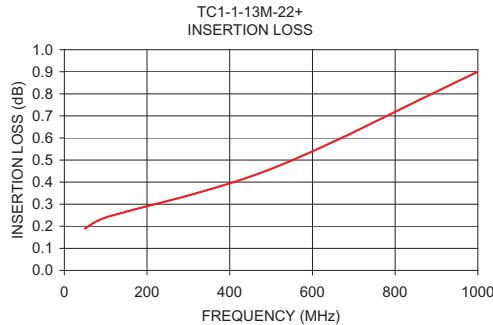
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE ** UNBALANCE (Deg.) Typ. 1 dB bandwidth	AMPLITUDE ** UNBALANCE (dB) Typ. 1 dB bandwidth
		3 dB MHz	2 dB MHz	1 dB MHz		
1	47-1000	—	—	47-1000	2	0.5

* 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



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

IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

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-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.

REV. A
M144916
TC1-1-13M-22+
ED-11376/1
WP/TD/CP/AM
140122