

# Surface Mount RF Transformer

## TC1-33-75G2+

75Ω 5 to 3000 MHz

### Maximum Ratings

Operating Temperature	-40°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

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

### Features

- suitable for tin/lead and RoHS solder systems
- wideband, 5 to 3000 MHz
- balanced transmission line
- good return loss, 20 dB typ. at 1 dB band
- excellent amplitude unbalance, 0.3 dB typ. and phase unbalance, 3 deg typ. in 1 dB bandwidth
- aqueous washable

### Applications

- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- cable TV
- cellular



Generic photo used for illustration purposes only

CASE STYLE: AT224-3

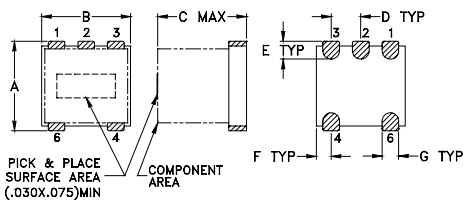
**+RoHS Compliant**

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

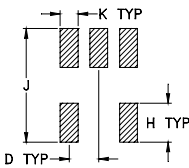
Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500
13"	1000, 2000

### Outline Drawing AT224-3



### PCB Land Pattern



### Outline Dimensions (inch/mm)

A	B	C	D	E	F
.150	.150	.150	.050	.030	.025
3.81	3.81	3.81	1.27	0.76	0.64
G	H	J	K	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	0.10	

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

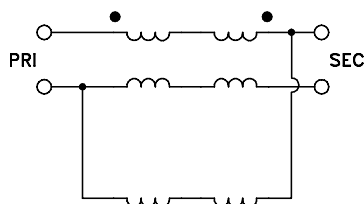
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE UNBALANCE (Deg.) Typ.		AMPLITUDE UNBALANCE (dB) Typ.	
		3 dB MHz	2 dB MHz	1 dB MHz	1 dB bandwidth	2 dB bandwidth	1 dB bandwidth	2 dB bandwidth
1	5-3000	2000-3000	1200-2000	5-1200	3	4	0.3	1.0

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

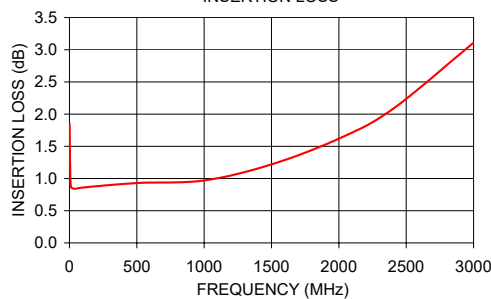
### Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
1.00	1.85	10.86	0.38	2.91
10.00	0.88	20.01	0.04	0.84
40.00	0.84	21.37	0.00	0.58
100.00	0.86	21.90	0.01	0.92
500.00	0.93	26.20	0.10	3.63
1000.00	0.97	19.72	0.18	4.76
1500.00	1.22	15.43	0.77	3.62
2000.00	1.62	13.94	1.40	0.56
2400.00	2.08	12.54	1.84	4.10
3000.00	3.11	9.59	2.06	12.70

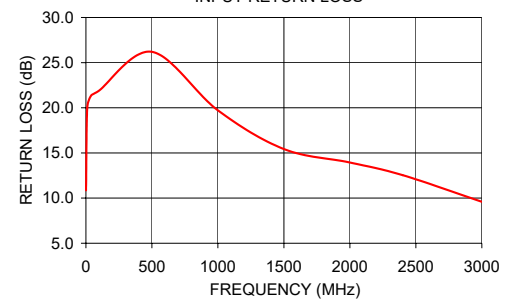
### Config. K



TC1-33-75G2+  
INSERTION LOSS



TC1-33-75G2+  
INPUT 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.
- 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)

