

# Surface Mount RF Transformer

## TC1-1-13M

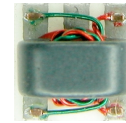
50Ω 4.5 to 3000 MHz

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

### Pin Connections

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



CASE STYLE: AT224  
PRICE: \$.99 ea. QTY (100)

### Features

- wideband, 4.5 to 3000 MHz
- balanced transmission line
- leadless surface mount
- good return loss
- excellent amplitude unbalance, 0.5 dB typ. and phase unbalance, 2 deg typ. in 1 dB bandwidth
- aqueous washable

### Applications

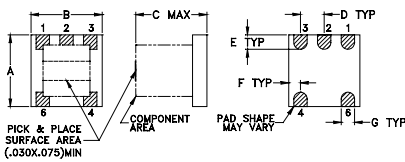
- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- MMDS

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

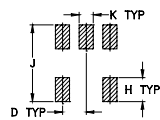
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE UNBALANCE (Deg.) Typ.		AMPLITUDE UNBALANCE (dB) Typ.	
		3 dB MHz	2 dB MHz	1 dB MHz	1 dB bandwidth	2 dB bandwidth	1 dB bandwidth	2 dB bandwidth
1	4.5-3000	2000-3000	1000-2000	4.5-1000	2	3	0.5	0.5

\*Insertion Loss is referenced to mid-band loss, 0.5 dB typ.

### Outline Drawing AT224



### PCB Land Pattern



Suggested Layout.  
Tolerance to be within ±.002

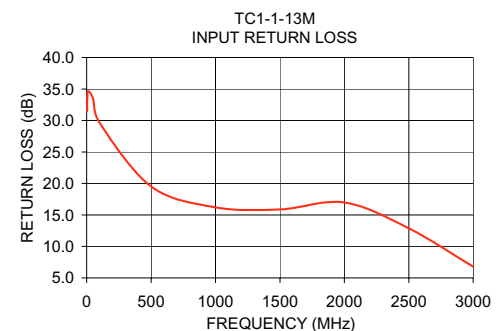
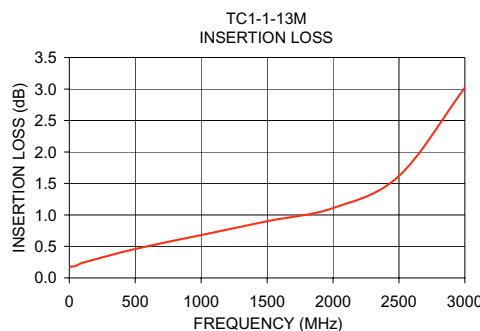
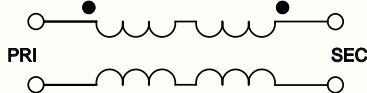
### Outline Dimensions (inch/mm)

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	

### Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
4.50	0.18	31.52	0.69	3.81
10.00	0.18	34.60	0.56	1.78
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
1500.00	0.90	15.89	0.29	0.89
2000.00	1.11	16.97	0.71	1.28
2500.00	1.62	12.88	0.78	5.79
3000.00	3.02	6.79	0.49	12.32

### Config. G



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RF/IF MICROWAVE COMPONENTS

REV. C  
M111888  
TC1-1-13M  
ED-11376/1  
WP/TD/CP/AM  
080505