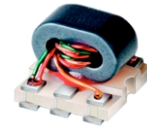


Surface Mount RF Transformer

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
NOTUSED	2

Features

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

CASE STYLE: AT224-1
PRICE: \$.99 ea. QTY (100)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The + suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Applications

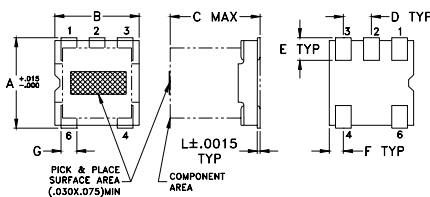
- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- MMDS

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

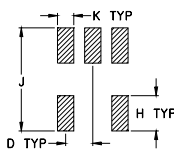
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE UNBALANCE (Deg.) Typ.		AMPLITUDE UNBALANCE (dB) Typ.	
		3 dB MHz	2 dB MHz	1 dB MHz	1 dB bandwidth	2 dB bandwidth	1 dB bandwidth	2 dB bandwidth
1	4.5-3000	2000-3000	1000-2000	4.5-1000	2	3	0.5	0.5

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

Outline Drawing AT224-1



PCB Land Pattern



Suggested Layout.
Tolerance to be within ±.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	L	wt
.028	.065	.190	.030	.007	grams
0.71	1.65	4.83	0.76	0.18	0.15

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	176.19
10.00	0.18	34.60	0.56	178.22
50.00	0.19	33.50	0.56	180.11
100.00	0.24	29.68	0.55	179.81
500.00	0.46	19.52	0.45	179.19
1000.00	0.68	16.22	0.14	178.41
1500.00	0.90	15.89	0.29	179.11
2000.00	1.11	16.97	0.71	181.28
2500.00	1.62	12.88	0.78	185.79
3000.00	3.02	6.79	0.49	167.68

Config. G

