Surface Mount RF Transformer

TC1-1-13M-34+

50Ω 47 to 1400 MHz

Features

- wideband, 47 to 1400 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



Generic photo used for illustration purposes only

CASE STYLE: AT224-1A

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



Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Тур.	Max.	Unit
Impedance Ratio (Secondary/Primary)			1		Ohm
Frequency Range		47		1400	MHz
Insertion Loss*	47-1000		1		dB
	1000-1400		1.5		
Phase Unbalance	47-1000		2		Deg.
	1000-1400		3		
Amplitude Unbalance	47-1000		0.5		dB
	1000-1400		0.5		

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

Maximum Ratings

Parameter	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.

Pin Connections

Function	Pin Number
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
NOT USED	2

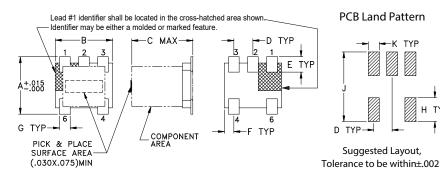
Config. G



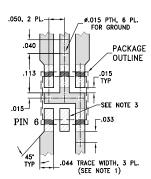


^{**} At 30mA max.

Outline Drawing



Demo Board MCL P/N: TB-145+ Suggested PCB Layout (PL-244)



NOTES:

- THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. ON EACH SIDE.
 FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 THIS PAD IS NOT REQUIRED FOR AT224 CASE STYLE.

 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

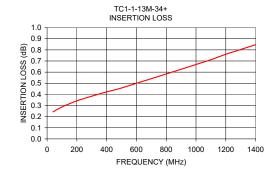
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

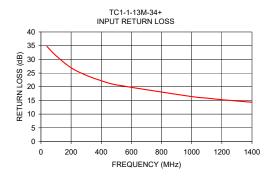
Outline Dimensions (inch)

F	Ε	D	С	В	Α
.025	.040	.050	.160	.150	.150
0.64	1.02	1.27	4.06	3.81	3.81
wt		K	J	н	G
grams		.030	.190	.065	.028
0.15		0.76	4.83	1.65	0.71

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
40.0	0.24	34.70	0.66	0.03
100.0	0.29	31.33	0.66	0.35
200.0	0.34	26.92	0.66	0.79
300.0	0.38	24.19	0.64	1.19
400.0	0.42	22.21	0.61	1.62
500.0	0.46	20.68	0.57	2.00
1000.0	0.67	16.40	0.30	3.30
1100.0	0.71	15.83	0.24	3.40
1200.0	0.76	15.27	0.17	3.43
1400.0	0.85	14.32	0.03	3.48





Additional Notes

- A. 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.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. 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

