

Surface Mount  **RF Transformer**

**TC1-6X+**

50Ω      0.15 to 350 MHz



*Generic photo used for illustration purposes only*

CASE STYLE: AT1521

**+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

**Features**

- good return loss
- usable over 0.05-400 MHz
- excellent amplitude unbalance, 0.1 dB typ. and phase unbalance, 2 deg typ. in 1 dB bandwidth
- plastic base with leads

**Applications**

- balanced to unbalanced transformation
- push-pull amplifiers

**Electrical Specifications at 25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		Ohm
Frequency Range		0.15		350	MHz
Insertion Loss*	0.15 - 350		3.0		dB
	0.25 - 250		2.0		
	0.3 - 125		1.0		

\* Insertion Loss is referenced to mid-band loss, 0.2 dB typ.

**Maximum Ratings**

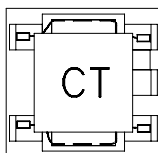
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

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

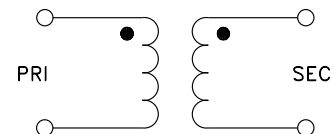
**Pin Connections**

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

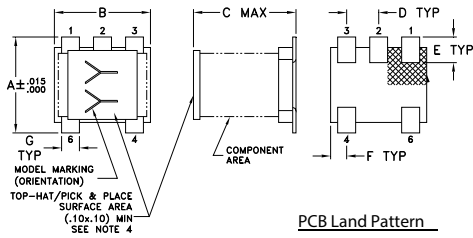
**Product Marking**



**Config. C**



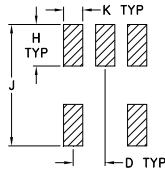
## Outline Drawing



**Note:**

1. Case Material Plastic
2. Termination Finish: Tin plate over Nickel plate.
3. Lead #1 identifier shall be located in the cross-hatched area shown, on bottom view. Identifier may be either a molded or marked feature.
4. Top-Hat total thickness: .013 inches max.

## PCB Land Pattern

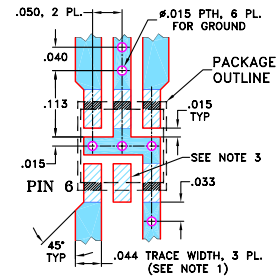


Suggested Layout,  
Tolerance to be within ±.002

## 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	wt	
.028	.065	.190	.030	grams	
0.71	1.65	4.83	0.76	0.15	

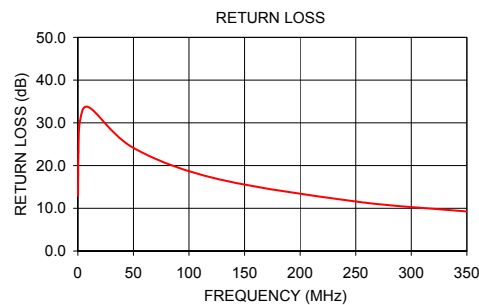
## Demo Board MCL P/N: TB-145 Suggested PCB Layout (PL-244)



- NOTES:**
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELEC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. ON EACH SII FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODI
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
  3. THIS PAD IS NOT REQUIRED FOR AT224 CASE STYLE.
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## Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
0.15	0.73	12.89
0.25	0.61	16.56
0.30	0.57	17.77
0.50	0.44	23.21
2.00	0.31	30.49
10.00	0.26	33.62
50.00	0.35	24.13
125.00	0.61	16.90
250.00	1.31	11.59
350.00	2.16	9.26



## 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](http://www.minicircuits.com/MCLStore/terms.jsp)