



**THE DATASHEET OF  
TC1.5-52TX+**





**SURFACE MOUNT** top hat  
**RF Transformer**

**TC1.5-52TX+**

50Ω 0.5 to 550 MHz

**FEATURES**

- Low insertion loss, 0.4 dB typ.in 1 dB Bandwidth
- Excellent return loss, 25 dB typ. in 1 dB Bandwith
- Plastic base with leads
- Aqueous washable



*Generic photo used for illustration purposes only*  
CASE STYLE: AT1521

**+RoHS Compliant**

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

**APPLICATIONS**

- Impedance matching, 50 to 75 ohms
- Balanced amplifier

**ELECTRICAL SPECIFICATIONS AT +25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			1.5		Ohm
Frequency Range		5		550	MHz
Insertion Loss*	0.5 - 550		3.0		dB
	1 - 350		2.0		
	2 - 200		1.0		

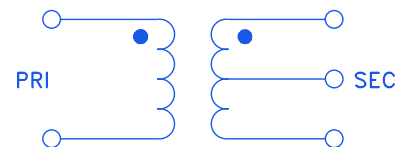
\* Insertion Loss is referenced to mid-band loss, 0.4 dB typ.

**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.

**CONFIG. A**





top hat  
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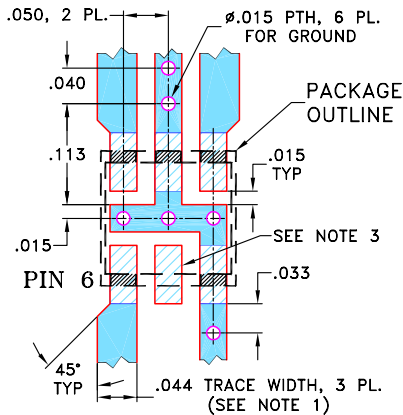
50Ω 0.5 to 550 MHz

PIN CONNECTIONS

Function	Pin Number
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY CT	2
SECONDARY	3
NOT USED	5

PRODUCT MARKING: CR

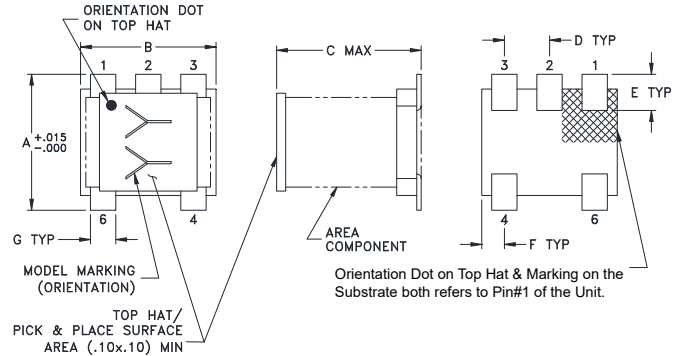
DEMO BOARD MCL P/N: TB-144  
SUGGESTED PCB LAYOUT: PL-244



- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC 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.

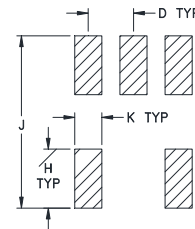
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



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	G	H	J	K
.150	.150	.160	.050	.040	.025	.028	.065	.190	.030
3.81	3.81	4.06	1.27	1.02	0.64	0.71	1.65	4.83	0.76

Weight: 0.15 grams

TAPE & REEL INFORMATION: F17



### TYPICAL PERFORMANCE DATA

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
0.50	0.82	15.72
1.00	0.61	19.84
5.00	0.33	28.81
10.00	0.29	32.35
50.00	0.35	28.60
100.00	0.41	23.52
200.00	0.53	18.07
250.00	0.61	16.13
300.00	0.70	14.71
400.00	0.90	12.52
550.00	1.28	10.19



#### 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)

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