



Mini-Circuits

SURFACE MOUNT

## RF Transformer

50Ω

5 to 300 MHz

TC3-1T+

Upgraded Version\*  
TC3-1TX+

## \*Addition of Top Hat® Feature Benefits

- Allows Faster Pick-and-Place
- Enables Visual Identification Marking



Generic photo used for illustration purposes only

CASE STYLE: AT224-1A

## +RoHS Compliant

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

## FEATURES

- Excellent Amplitude Unbalance (0.3 dB Typ) and Phase Unbalance (5 Deg. Typ) in 1 dB Bandwidth
- Plastic Base with Leads
- Good Return Loss
- Aqueous Washable

## APPLICATIONS

- Impedance Matching
- Balanced Antennas

## ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (Secondary/Primary)			3		Ohms
Frequency Range		5		300	MHz
Insertion Loss <sup>1</sup>	-		3		dB
	-		2		
	5-300		1		

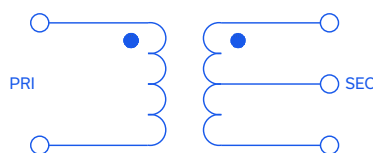
1. Insertion Loss is referenced to mid-band loss, 0.4 dB typ.

## ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-20°C to +85°C
Storage Temperature	-55°C to +100°C
RF Power	0.25 W
DC Current	30 mA

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

## CONFIG. A



REV. G  
ECO-025349  
TC3-1T+  
MCL NY  
251110





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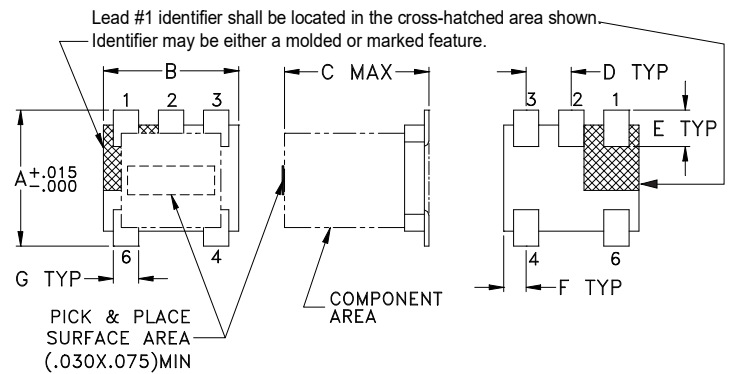
## PIN CONNECTIONS

PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
SECONDARY CT	2

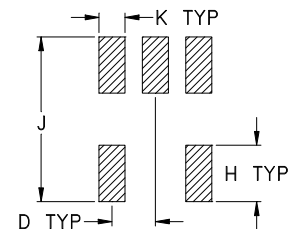
**PRODUCT MARKING:** N/A

**DEMO BOARD MCL P/N:** TB-TC3-1T+

## OUTLINE DRAWING



## PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm .002$  in

## 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	

**TAPE & REEL INFORMATION: F17**



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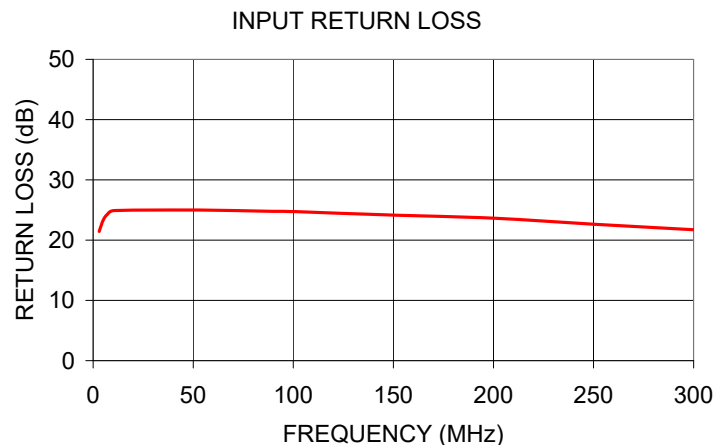
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## TYPICAL PERFORMANCE DATA

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
3	0.53	21.45
7	0.45	24.23
10	0.44	24.89
50	0.49	24.99
90	0.52	24.79
100	0.53	24.74
150	0.57	24.15
200	0.60	23.65
250	0.60	22.64
300	0.66	21.73



## 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)

