

Surface Mount  **RF Transformer**

50Ω 10 to 4000 MHz

**TCM1-43X+**



Generic photo used for illustration purposes only

CASE STYLE: DB1627

**+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**

- wide bandwidth 10 to 4000 MHz
- balanced transmission line
- low insertion loss, 1.1 dB typ.
- excellent return loss
- aqueous washable

**Applications**

- PCS
- wideband push-pull amplifiers
- cellular

**Electrical Specifications at 25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		10		4000	MHz
Insertion Loss	10-4000	—	1.1	3.0	dB
Amplitude Unbalance	10-4000	—	0.5	—	dB
Phase Unbalance	10-4000	—	7	—	Degree

**Maximum Ratings**

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.4W
DC Current	30mA

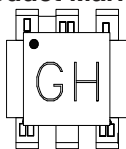
Permanent damage may occur if any of these limits are exceeded.

**Pin Connections\***

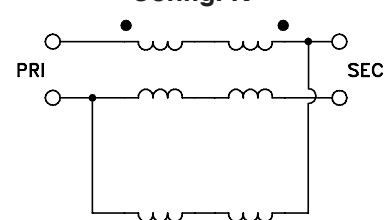
Function	Pin Number
PRIMARY DOT	3
PRIMARY	1, 2
SECONDARY DOT	6
SECONDARY	4
GND	1, 2
NOT USED	5

\*Pin 1 and 2 must be connected together to form Config. K; We recommend grounding this side of the primary as shown in PL-364.

**Product Marking**

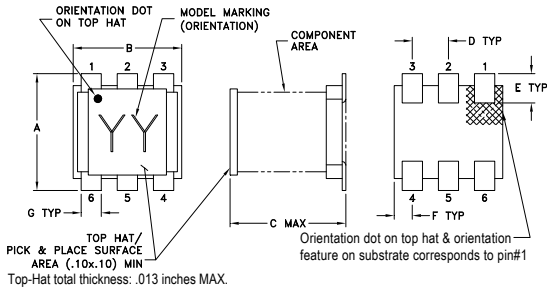


**Config. K**



# TCM1-43X+

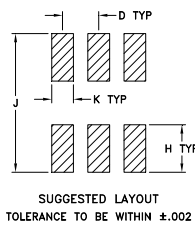
## Outline Drawing



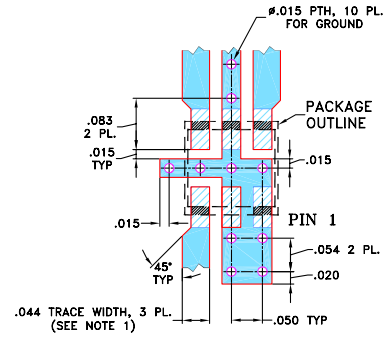
## Outline Dimensions (inch/mm)

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	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	

## PCB Land Pattern



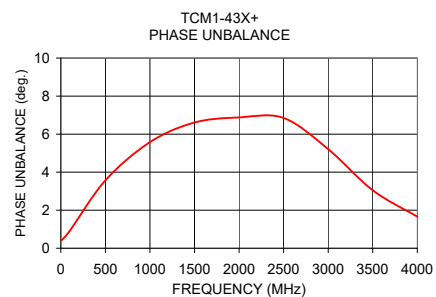
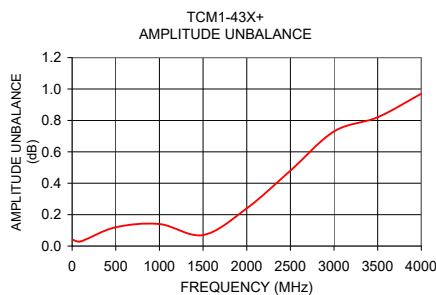
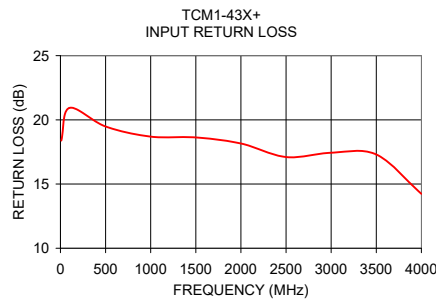
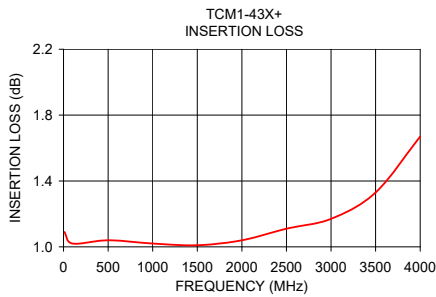
## Demo Board MCL P/N: TB-654+ Suggested PCB Layout (PL-364)



- NOTES: 1. 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.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.  
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Input R. Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
10	1.09	18.38	0.04	0.42
100	1.02	20.93	0.03	0.91
500	1.04	19.48	0.12	3.57
1000	1.02	18.69	0.14	5.58
1500	1.01	18.63	0.07	6.61
2000	1.04	18.16	0.24	6.88
2500	1.11	17.10	0.48	6.85
3000	1.17	17.44	0.73	5.21
3500	1.33	17.30	0.82	3.05
4000	1.67	14.24	0.97	1.66



## 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-Circuits' applicable established test performance criteria and measurement instructions.  
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