



**THE DATASHEET OF  
TCM2-43X+**





top hat  
SURFACE MOUNT  
**RF Transformer**

**TCM2-43X+**

50Ω 10 to 4000 MHz

**FEATURES**

- Wide bandwidth 10 to 4000 MHz
- Balanced transmission line
- Excellent return loss
- Aqueous washable

**APPLICATIONS**

- PCS
- Wideband push-pull amplifiers
- Cellular



Generic photo used for illustration purposes only

CASE STYLE: DB1627

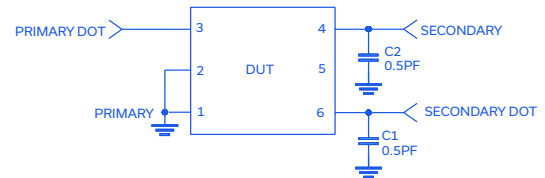
**+RoHS Compliant**

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

**ELECTRICAL SPECIFICATIONS AT 25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio (secondary/primary)			2		Ohm
Frequency Range		10		4000	MHz
Insertion Loss	10-4000	—	1.3	3.0	dB
Amplitude Unbalance	10-4000	—	0.5	—	dB
Phase Unbalance	10-4000	—	7	—	Degree

**ELECTRICAL SCHEMATIC**

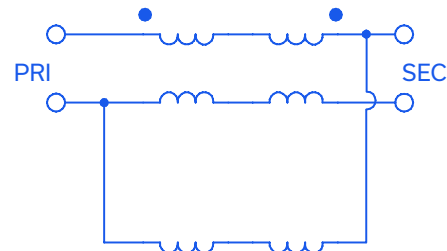


**MAXIMUM RATINGS**

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

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

**CONFIGURATION K**



REV. B  
ECO-013812  
TCM2-43X+  
DJ/CP/AM  
220620



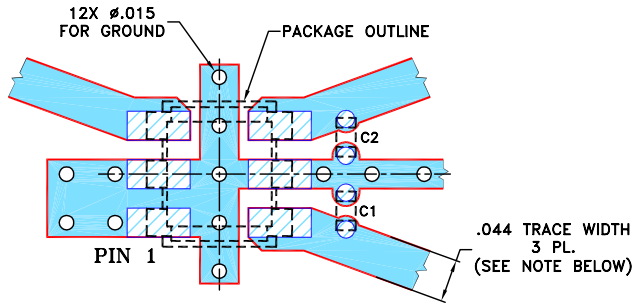


### PIN CONNECTIONS

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

PRODUCT MARKING: GJ

### DEMOBOARD MCL P/N: TB-TCM2-43X+ SUGGESTED PCB LAYOUT (PL-380)

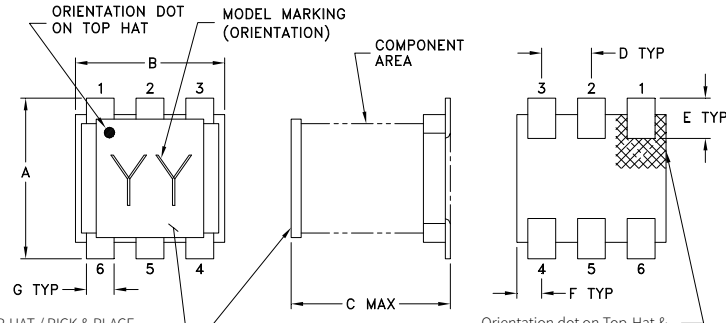


COMPONENT	SIZE
C1, C2	0402

- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS  $.020 \pm .0015$ "; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-676+.

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

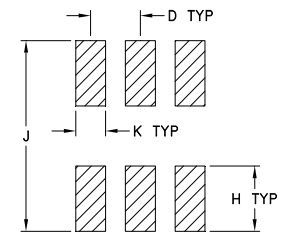
### OUTLINE DRAWING



TOP-HAT / PICK & PLACE SURFACE AREA (.10X.10) MIN  
TOP-HAT TOTAL THICKNESS: .013 inches MAX.

Orientation dot on Top-Hat & orientation feature on substrate corresponds to pin #1.

### PCB Land Pattern



SUGGESTED LAYOUT TOLERANCE TO BE WITHIN  $\pm .002$

### OUTLINE DIMENSIONS (Inches/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

### TAPE & REEL INFORMATION: F47



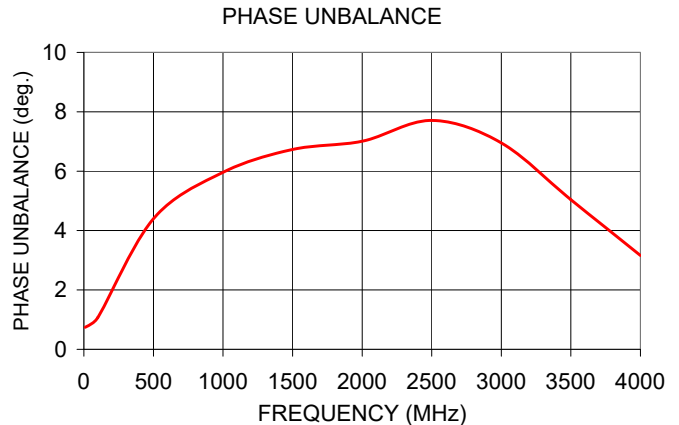
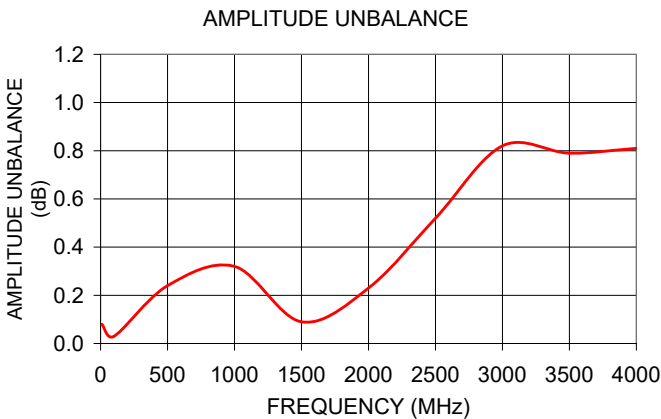
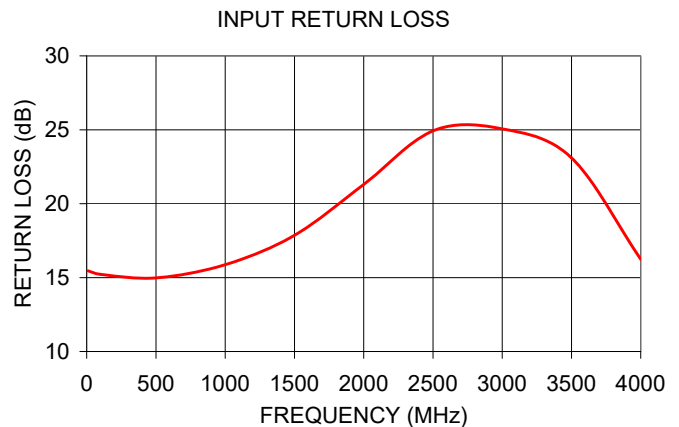
top hat<sup>®</sup>  
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**TYPICAL PERFORMANCE DATA**

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
10	1.88	15.46	0.08	0.74
100	1.76	15.22	0.03	1.07
500	1.61	14.98	0.24	4.40
1000	1.35	15.87	0.32	5.96
1500	1.17	17.86	0.09	6.73
2000	1.09	21.30	0.23	7.01
2500	1.11	24.93	0.52	7.71
3000	1.17	25.06	0.82	6.95
3500	1.26	23.10	0.79	5.04
4000	1.55	16.24	0.81	3.16




- 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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