

# Surface Mount RF Transformer

50Ω 20 to 1400 MHz

## TCM2-452X-2+



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 20 to 1400 MHz
- balanced transmission line
- excellent return loss
- aqueous washable

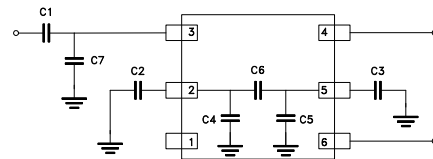
### Applications

- PCS
- wideband push-pull amplifiers
- cellular

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			2		
Frequency Range		20		1400	MHz
Insertion Loss	20-1400	—	1.5	2.5	dB
Amplitude Unbalance	20-1400	—	0.5	—	dB
Phase Unbalance	20-1400	—	10	—	Degree

### Electrical Schematic



### Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.4W
DC Current	60mA

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

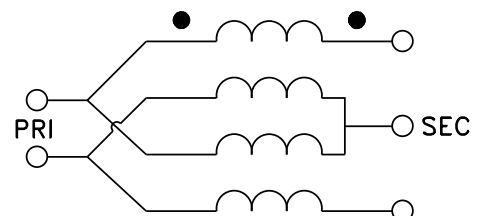
### Pin Connections

Function	Pin Number
PRIMARY DOT	3
PRIMARY	2
SECONDARY DOT	4
SECONDARY	6
GND (RF)	2.5
NOT USED	1

### Product Marking



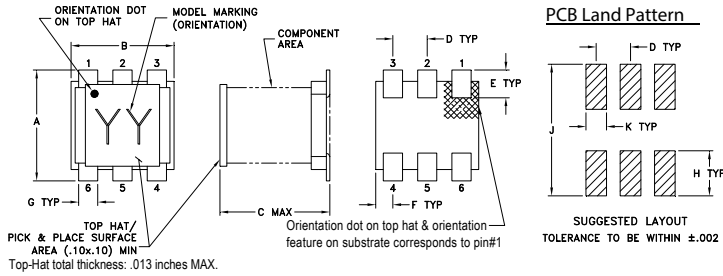
### Config. H



REV. B  
M162092  
TCM2-452X-2+  
ED-16110902  
210406

# TCM2-452X-2+

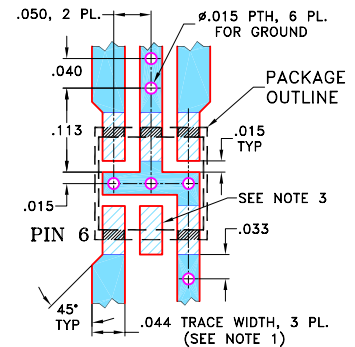
## Outline Drawing



## 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

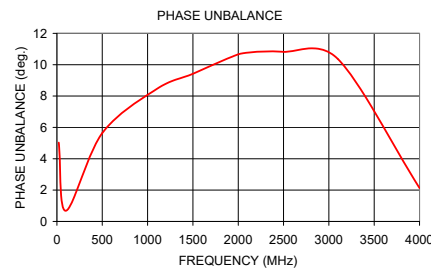
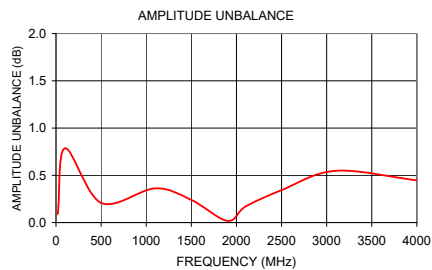
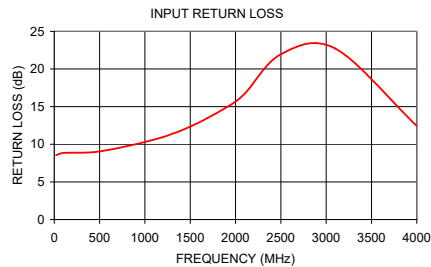
## Demo Board MCL P/N: TB-697+ Suggested PCB Layout (PL-381)



- NOTES:**
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS  $.020" \pm .0015"$ ; 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

## Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Input R. Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
10	2.29	17.26	0.11	1.78
40	2.17	18.92	0.01	0.91
100	2.16	18.89	0.03	1.03
200	2.13	18.57	0.03	1.55
400	2.00	18.02	0.04	2.80
600	1.84	17.63	0.05	3.83
800	1.70	17.26	0.04	4.70
1000	1.57	16.86	0.00	5.64
1200	1.48	16.54	0.07	6.31
1400	1.42	16.27	0.18	6.85



### Additional Notes

- 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.
- 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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