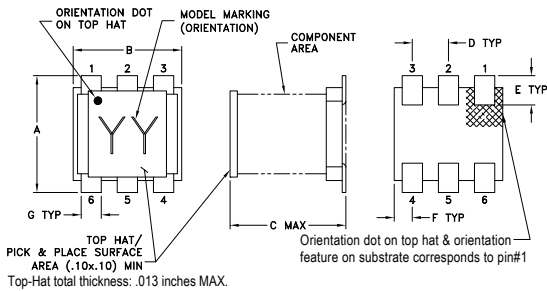
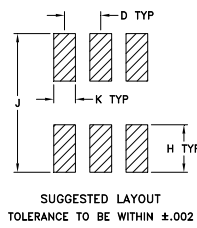


TCM4-452X+

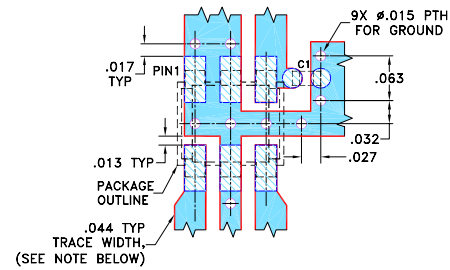
Outline Drawing





PCB Land Pattern



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



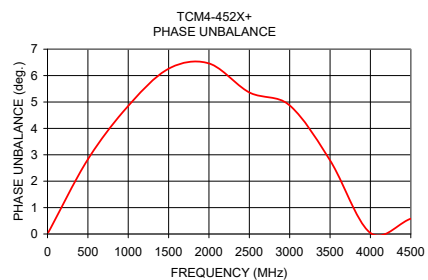
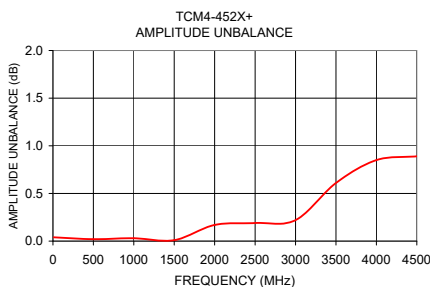
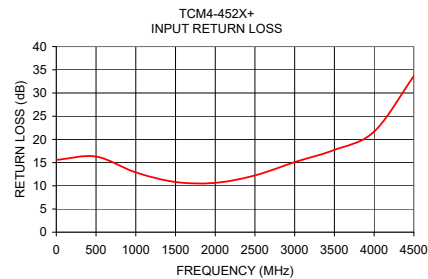
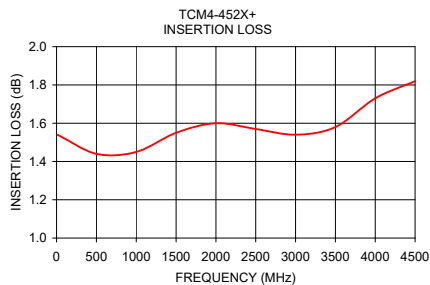
- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $0.020" \pm 0.0015"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE. 0402 SIZE CHIP COMPONENT FOOTPRINT IS SHOWN FOR REFERENCE. FOR COMPONENT VALUE REFER TO TB-697+.
 -  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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	

Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Input R. Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
10.0	1.54	15.59	0.04	0.06
500.0	1.44	16.30	0.02	2.83
1000.0	1.45	12.89	0.03	4.85
1500.0	1.55	10.82	0.01	6.26
2000.0	1.60	10.63	0.17	6.46
2500.0	1.57	12.23	0.19	5.36
3000.0	1.54	15.11	0.22	4.87
3500.0	1.58	17.73	0.61	2.79
4000.0	1.73	21.68	0.85	0.04
4500.0	1.82	33.66	0.89	0.58



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.
- 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/MCLStore/terms.jsp



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