

# RF Transformer

NCS2-62+



50Ω 390 to 590 MHz 1:2 Ratio

## Maximum Ratings

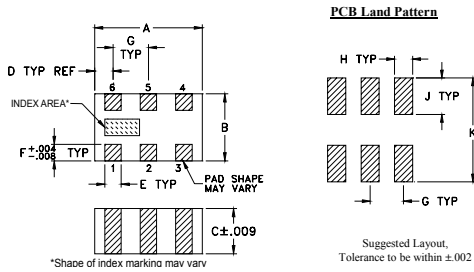
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Input RF Power*	2W at 25°C

\*Passband rating, derate linearly to 1W at 100°C ambient.  
Permanent damage may occur if any of these limits are exceeded.

## Pad Connections

PRIMARY DOT (Unbalanced Port)	4
PRIMARY (GND)	2,6
SECONDARY DOT (Balanced)	1
SECONDARY (Balanced)	3
NO CONNECTION	5

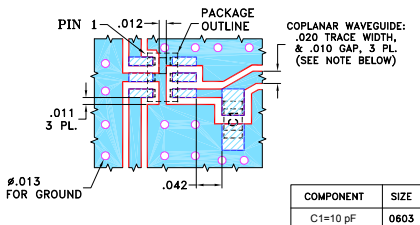
## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F
.079	.049	.037	.014	.012	.012
2.0	1.24	0.94	0.36	0.30	0.30
G	H	J	K	wt	
.026	.014	.039	.110	grams	
0.66	0.36	1.00	2.80	.008	

## Demo Board MCL P/N: TB-755+ Suggested PCB Layout (PL-438)



- NOTES:
- COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS R04350B WITH THICKNESS .010" ± .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
  - CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-755+.
  - 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

## 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

## Features

- low phase unbalance, 5 deg. and amplitude unbalance, 0.5 dB typ.
- miniature size 0805 (2.0 x 1.25mm)
- LTCC construction
- low cost
- aqueous washable

## Applications

- VHF/UHF
- signal process
- instrumentation

## Electrical Specifications at 25°C

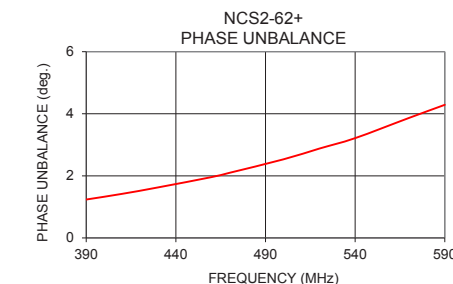
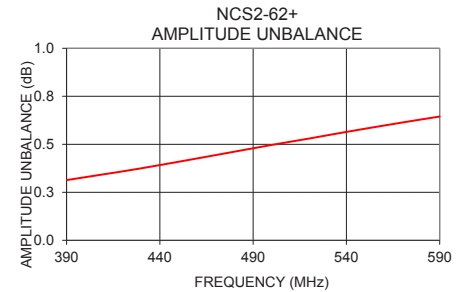
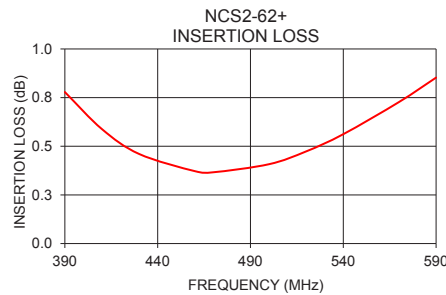
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			2		
Frequency Range		390	—	590	MHz
Insertion Loss*	460 - 470 390 - 590	— —	0.6 0.8	1.0 —	dB
Amplitude Unbalance	460 - 470 390 - 590	— —	0.5 0.8	1.0 —	dB
Phase Unbalance†	460 - 470 390 - 590	— —	3 5	8 —	Degree

- \* Reference Demo Board TB-755+  
† Relative to 180°

## Typical Performance Data at 25°C\*\*

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
390	0.78	10.62	0.31	1.24
410	0.59	12.87	0.34	1.42
430	0.46	15.47	0.37	1.63
460	0.37	18.26	0.43	1.96
470	0.37	17.45	0.46	2.10
500	0.41	15.45	0.50	2.53
520	0.47	13.50	0.53	2.88
540	0.56	11.90	0.56	3.22
570	0.73	10.04	0.61	3.87
590	0.85	9.09	0.64	4.29

\*\* Measured with Agilent E5071B network analyzer using port extension.



## configuration J

