

# Ceramic Balun RF Transformer

## NCS2-771+

50Ω 240 to 770 MHz 1:2 Ratio

### Features

- miniature size, 0.079"x0.049"x0.037"
- LTCC construction
- low cost
- aqueous washable

### Applications

- satellite
- VHF/UHF
- instrumentation



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-9

### +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, 1000, 4000

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			2		:1
Frequency Range		240	—	770	MHz
Insertion Loss <sup>1</sup>	240 - 770	—	0.2	0.8	dB
Amplitude Unbalance	240 - 770	—	0.5	1.0	dB
Phase Unbalance <sup>2</sup>	240 - 770	—	5	11	Degree

1. Insertion Loss is referenced to mid-band loss, 0.7 dB. Reference Demo Board TB-626+

2. Relative to 180°

### Maximum Ratings

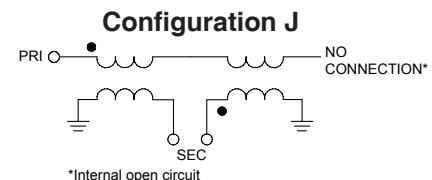
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C
RF Power*	2W

\*Passband rating, derate linearly to 1W at 100°C ambient.

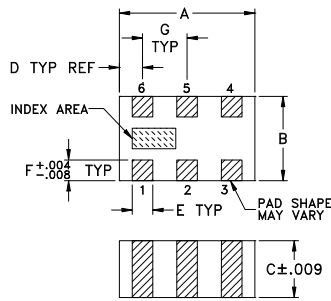
Permanent damage may occur if any of these limits are exceeded.

### Pad Connections

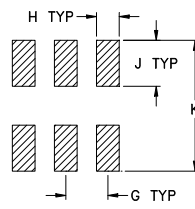
Function	Pad Number
PRIMARY DOT (Unbalanced Port)	2
PRIMARY (GND)	1,3
SECONDARY DOT (Balanced)	4
SECONDARY (Balanced)	6
NO CONNECTION	5



## Outline Drawing



## PCB Land Pattern

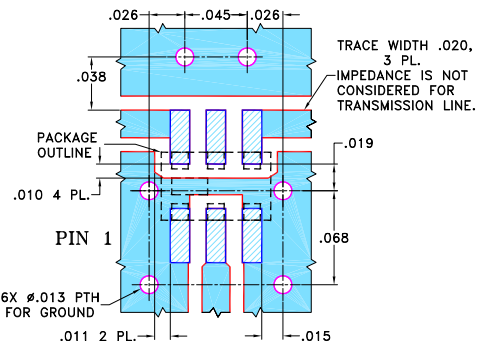


Suggested Layout,  
Tolerance to be within ±.002

## Outline Dimensions (inch/mm)

A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.0	1.24	0.84	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-626+ Suggested PCB Layout (PL-348)



### NOTES:

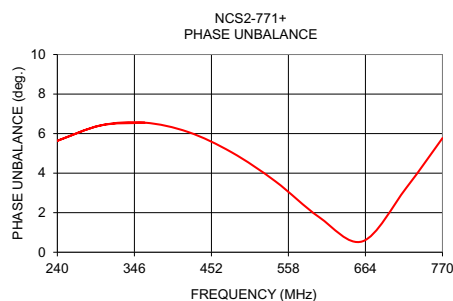
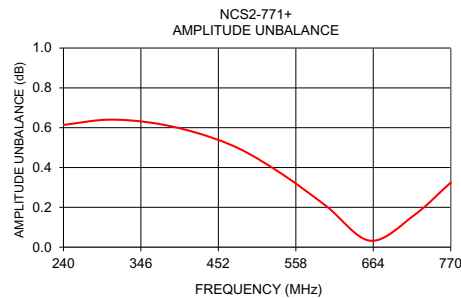
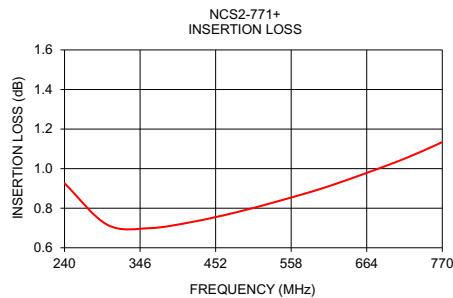
- TRACE WIDTH IS SHOWN FOR REFERENCE ONLY.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Typical Performance Data at 25°C<sup>3</sup>

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
240	0.93	13.53	0.61	5.64
300	0.72	20.55	0.64	6.42
360	0.70	19.91	0.62	6.55
420	0.73	17.10	0.58	6.08
480	0.78	15.26	0.50	5.05
540	0.84	14.00	0.37	3.59
600	0.90	12.94	0.21	1.78
660	0.97	12.01	0.03	0.55
720	1.05	11.16	0.16	3.25
770	1.13	10.50	0.32	5.77

3. Measured with Agilent E5071B network analyzer using impedance conversion and port extension.



### 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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