



CERAMIC BALUN

# RF Transformer

## NCS2-771-75+

Mini-Circuits

75Ω 240 to 770 MHz 1:2 Ratio

### FEATURES

- Wideband, 240 to 770 MHz
- Low phase unbalance, 7 deg. and amplitude unbalance, 0.3 dB typ
- Miniature size 0805, 0.079"x0.049"x0.033"
- LTCC construction
- Low cost
- Aqueous washable

### APPLICATIONS

- VHF/UHF
- Signal process
- 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

### ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter                           | Frequency (MHz) | Min. | Typ. | Max. | Units  |
|-------------------------------------|-----------------|------|------|------|--------|
| Impedance Ratio (Secondary/Primary) |                 |      | 2    |      |        |
| Frequency Range                     |                 | 240  |      | 770  | MHz    |
| Insertion Loss <sup>1</sup>         | 240 - 770       | —    | 0.8  | 1.2  | dB     |
| Amplitude Unbalance                 | 240 - 770       | —    | 0.3  | 1.0  | dB     |
| Phase Unbalance <sup>2</sup>        | 240 - 770       | —    | 7    | 10   | Degree |

1. Reference Demo Board TB-626+

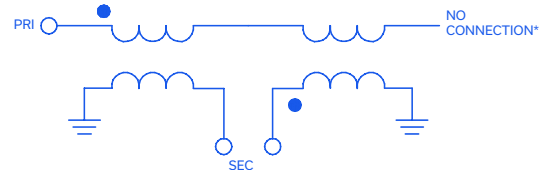
2. Relative to 180°

### MAXIMUM RATINGS

| Parameter             | Ratings        |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| RF Power <sup>3</sup> | 2W             |

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

### CONFIGURATION J



\*Internal open circuit

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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. C  
ECO-010420  
NCS2-771-75+  
MCL NY  
211112

PAGE 1 OF 3

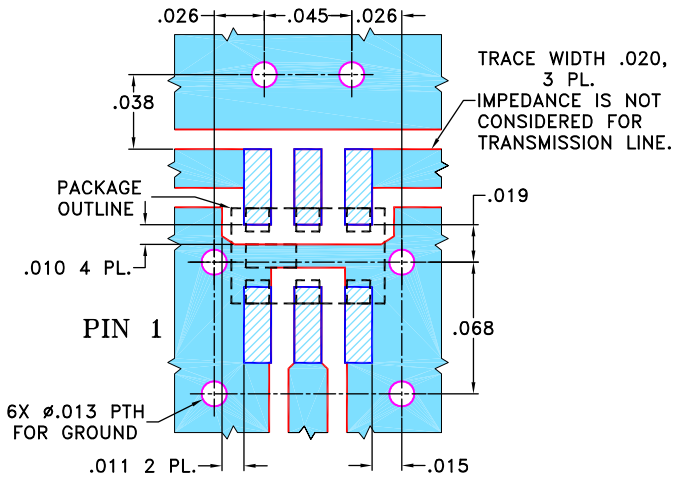


### PAD CONNECTIONS

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

PRODUCT MARKING: N/A

### DEMO BOARD MCL P/N: TB-626+ SUGGESTED PCB LAYOUT (PL-348)

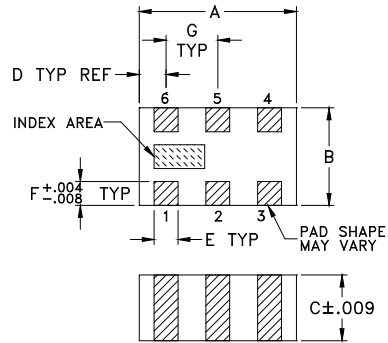


**NOTES:**

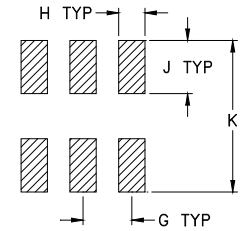
1. TRACE WIDTH IS SHOWN FOR REFERENCE ONLY.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

### OUTLINE DRAWING



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within  $\pm .002$

### OUTLINE DIMENSIONS (Inches/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  |

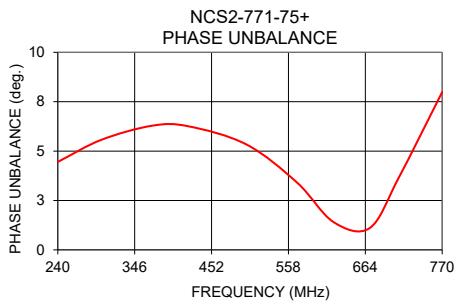
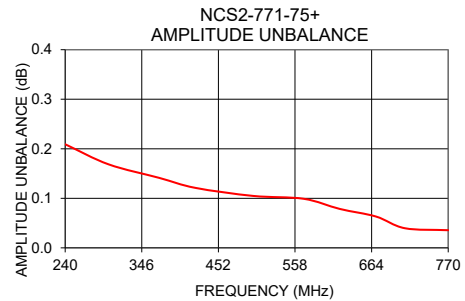
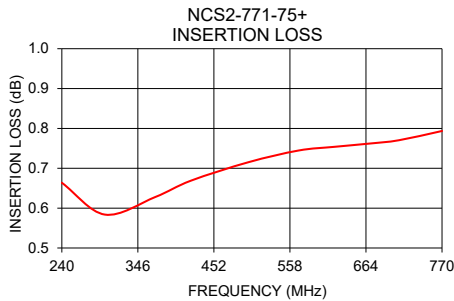
### TAPE & REEL INFORMATION: F74



### TYPICAL PERFORMANCE DATA<sup>3</sup>

| Frequency (MHz) | Insertion Loss (dB) | Input Return Loss (dB) | Amplitude Unbalance (dB) | Phase Unbalance (deg) |
|-----------------|---------------------|------------------------|--------------------------|-----------------------|
| 240             | 0.66                | 18.76                  | 0.21                     | 4.45                  |
| 300             | 0.58                | 20.33                  | 0.17                     | 5.57                  |
| 370             | 0.63                | 16.43                  | 0.14                     | 6.29                  |
| 420             | 0.67                | 15.22                  | 0.12                     | 6.26                  |
| 500             | 0.72                | 14.73                  | 0.10                     | 5.34                  |
| 570             | 0.74                | 15.18                  | 0.10                     | 3.40                  |
| 620             | 0.75                | 16.01                  | 0.08                     | 1.41                  |
| 670             | 0.76                | 17.24                  | 0.06                     | 1.10                  |
| 710             | 0.77                | 18.58                  | 0.04                     | 3.65                  |
| 770             | 0.79                | 21.67                  | 0.04                     | 7.99                  |

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



#### 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.
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