



CERAMIC BALUN

RF Transformer

NCS2-62+

Mini-Circuits

50Ω 390 to 590 MHz 1:2 Ratio

FEATURES

- Low phase unbalance 5 deg. and amplitude unbalance, 0.5 dB typ.
- Miniature size 0805, 0.079"x0.049"x0.033"
- LTCC construction
- Low cost
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-9

APPLICATIONS

- VHF/UHF
- Signal process
- Instrumentation

+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 | | 390 | | 2815 | MHz |
| Insertion Loss ¹ | 460 - 470 | — | 0.6 | 1.0 | dB |
| | 390 - 590 | — | 0.8 | — | |
| Amplitude Unbalance | 460 - 470 | — | 0.5 | 1.0 | dB |
| | 390 - 590 | — | 0.8 | — | |
| Phase Unbalance ² | 460 - 470 | — | 3 | 8 | Degree |
| | 390 - 590 | — | 5 | — | |

1. Reference Demo Board TB-755+

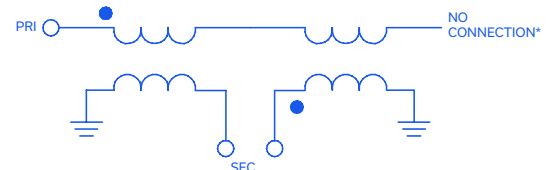
2. Relative to 180°

MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------|----------------|
| Operating Temperature | -55°C to 125°C |
| Storage Temperature | -55°C to 125°C |
| RF Power ³ | 2W at 25°C |

3. Passband rating, derate linearly to 1W at 125°C ambient. Permanent damage may occur if any of these limits are exceeded.

CONFIGURATION J



*Internal open circuit

Mini-Circuits

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REV. C
ECO-010420
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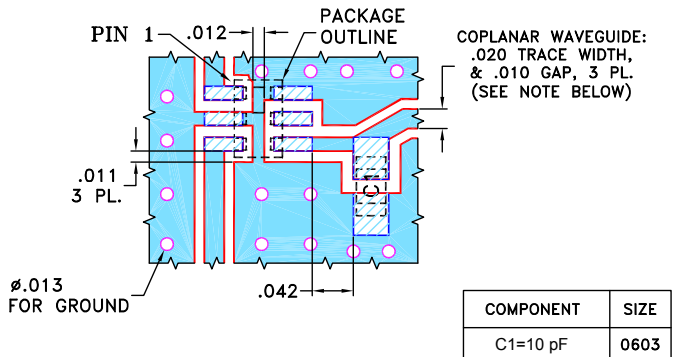
NCS2-62+

PAD CONNECTIONS

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

PRODUCT MARKING: N/A

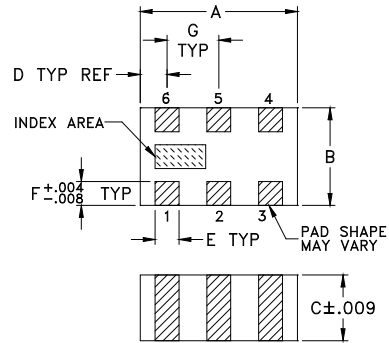
DEMO BOARD MCL P/N: TB-755+ SUGGESTED PCB LAYOUT (PL-438)



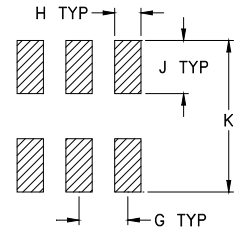
- NOTES:**
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS R04350B WITH THICKNESS .010" ± .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-755+.
 3. BOTTOM SIDE OF THE PCB IS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

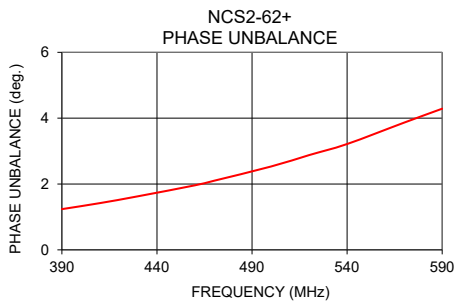
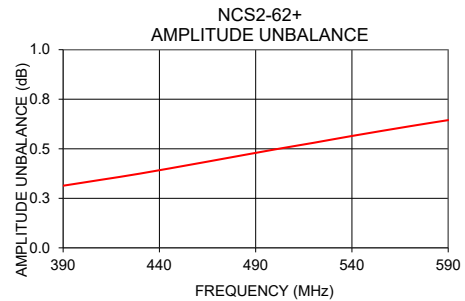
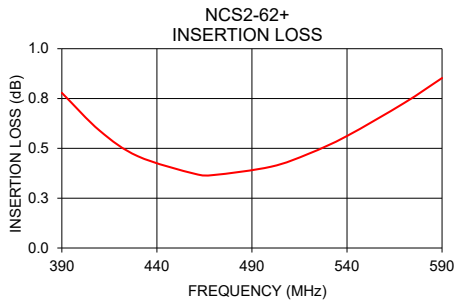
TAPE & REEL INFORMATION: F74



TYPICAL PERFORMANCE DATA³

| Frequency (MHz) | Insertion Loss (dB) | Input Return 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 |

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.
- 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