



CERAMIC BALUN

RF Transformer

NCS4-521+

Mini-Circuits

50Ω 223 to 520 MHz 1:4 Ratio

FEATURES

- Wideband, 223 to 520 MHz
- Low phase unbalance 5 deg. and amplitude unbalance, 0.7 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

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

APPLICATIONS

- WLAN
- GSM
- Two way trunked radio

ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Units |
|-------------------------------------|-----------------|------|------|------|--------|
| Impedance Ratio (Secondary/Primary) | | | 4 | | |
| Frequency Range | | 223 | | 520 | MHz |
| Insertion Loss ¹ | 223 - 520 | — | — | 1.5 | dB |
| Amplitude Unbalance | 223 - 520 | — | — | 1.5 | dB |
| Phase Unbalance ² | 223 - 520 | — | — | 10 | Degree |

1. Reference Demo Board TB-626+

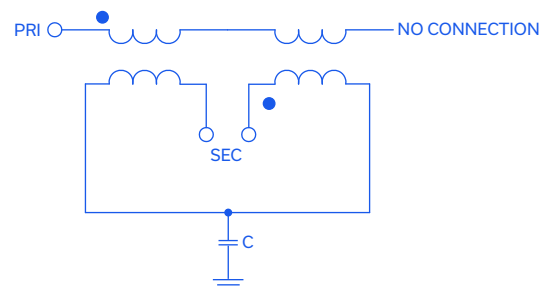
2. Relative to 180°

MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power ³ | 2W |

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

CONFIGURATION R



Mini-Circuits

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

REV. B
ECO-010420
NCS4-521+
MCL NY
211112

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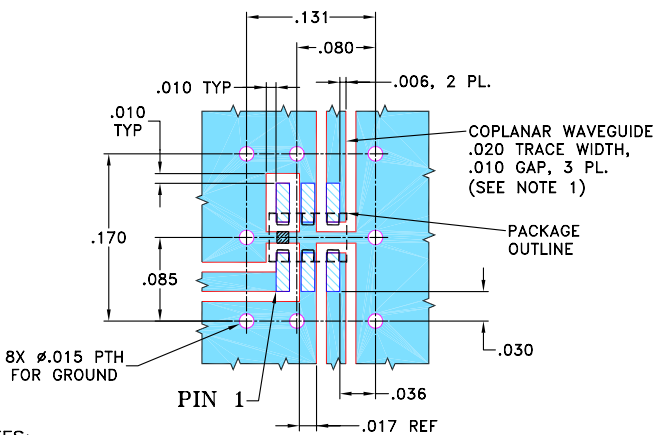


PAD CONNECTIONS

| | |
|-------------------------------|---|
| PRIMARY DOT (Unbalanced Port) | 1 |
| PRIMARY (GND) | 2 |
| SECONDARY DOT (Balanced) | 4 |
| SECONDARY (Balanced) | 3 |
| NO CONNECTION | 6 |
| NOT USED (GND Externally) | 5 |

PRODUCT MARKING: N/A

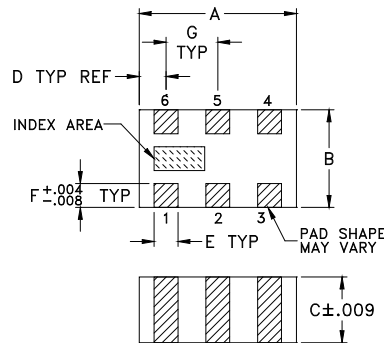
DEMO BOARD MCL P/N: TB-419+ SUGGESTED PCB LAYOUT (PL-264)



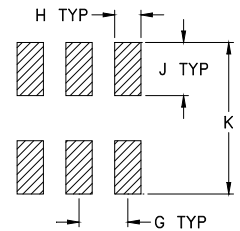
NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.010'' \pm .001''$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 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