CERAMIC BALUN

RF Transformer

NCS4-442+

50Ω 3300 to 4200 MHz 1:4 Ratio

FEATURES

- Wideband, 3300 to 4200 MHz
- Low Phase Unbalance, 5 Degrees and Amplitude Unbalance, 0.4 dB Typ.
- Miniature Size, 0.079x0.049x0.033"
- LTCC Construction
- Low Cost
- Aqueous Washable



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-1

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- WIMAX
- Satellite Transmitters
- Line of Sight Links

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio (Secondary/Primary)			4		
Frequency Range		3300		4200	MHz
Insertion Loss[1]	3300-4200		1.0		dB
Amplitude Unbalance	3300-4200		0.4		dB
Phase Unbalance[2]	3300-4200		5		Degree

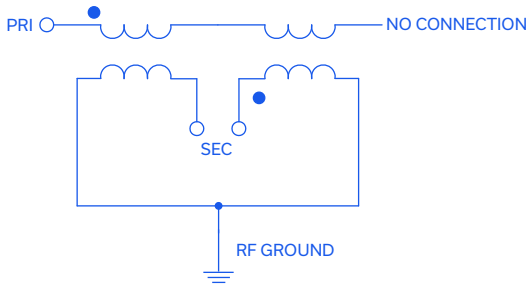
1. Insertion Loss is referenced to mid-band loss, 0.9 dB. Reference Demo Board TB-NCS4-442+.
2. Relative to 180°.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
RF Power[3]	3 W

3. Derate linearly to 2 W at +85°C.
Permanent damage may occur if any of these limits are exceeded.

CONFIGURATION R



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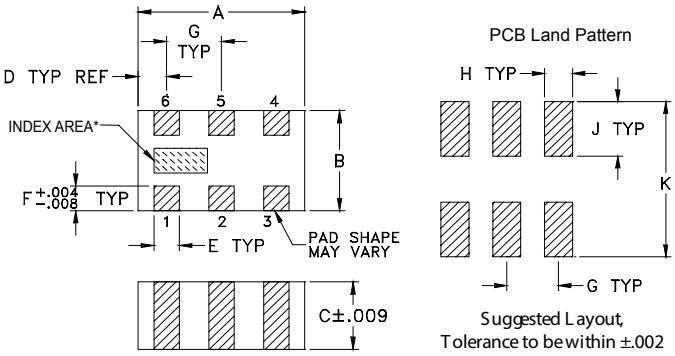
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PAD CONNECTIONS

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

Pads 2,3,4 are DC-connected internally.

OUTLINE DRAWING

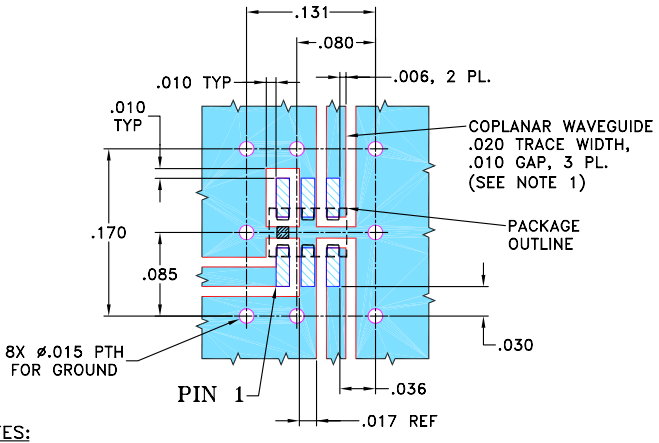


*Shape of index marking may vary

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-NCS4-442+

SUGGESTED PCB LAYOUT (PL-264)



NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .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 DIMENSIONS (Inches / mm)

A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.01	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

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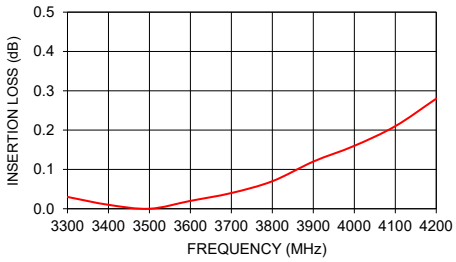
50Ω 3300 to 4200 MHz 1:4 Ratio

TYPICAL PERFORMANCE DATA[4]

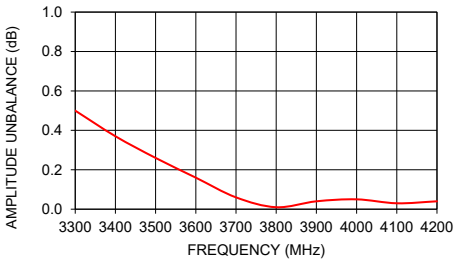
Frequency (MHz)	Insertion Loss (dB)	Input Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance[5] (Degree)
3300	0.03	22.45	0.50	8.83
3400	0.01	24.30	0.37	8.15
3500	0.00	25.05	0.26	7.29
3600	0.02	24.38	0.16	6.24
3700	0.04	22.74	0.06	5.06
3800	0.07	20.87	0.01	3.96
3900	0.12	18.96	0.04	2.68
4000	0.16	17.33	0.05	1.41
4100	0.21	15.88	0.03	0.16
4200	0.28	14.56	0.04	0.85

4. Measured with Agilent E5071B network analyzer using impedance conversion and port extension.
5. Relative to 180°.

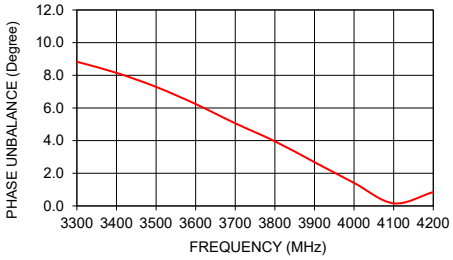
INSERTION LOSS[6]



AMPLITUDE UNBALANCE



PHASE UNBALANCE[5]



6. Insertion Loss is referenced to mid-band loss, 0.9 dB. Reference Demo Board TB-NCS4-442+.

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/terms/viewterm.html