

# Ceramic Balun RF Transformer

50Ω 4900 to 5875 MHz 1:2 Ratio

NCS2-592+

## Features

- wideband, 4900 to 5875 MHz
- low phase unbalance, 5 deg. and amplitude unbalance, 0.6 dB typ.
- miniature size, 0.079"x0.049"x0.033"
- LTCC construction
- low cost
- aqueous washable

## Applications

- WLAN
- 802.11
- WIMAX
- radar



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-1

### +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		
Frequency Range		4900	—	5875	MHz
Insertion Loss <sup>1</sup>	4900-5875	—	1.0	—	dB
Amplitude Unbalance	4900-5875	—	0.6	—	dB
Phase Unbalance <sup>2</sup>	4900-5875	—	5	—	Degree

1. Insertion Loss is referenced to mid-band loss, 1.0 dB.

2. Relative to 180°

## Maximum Ratings

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

\*\*\* Derate linearly to 2W at 85°C

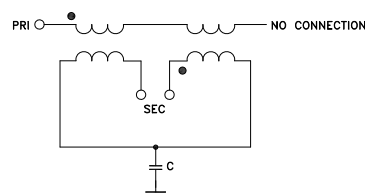
Permanent damage may occur if any of these limits are exceeded.

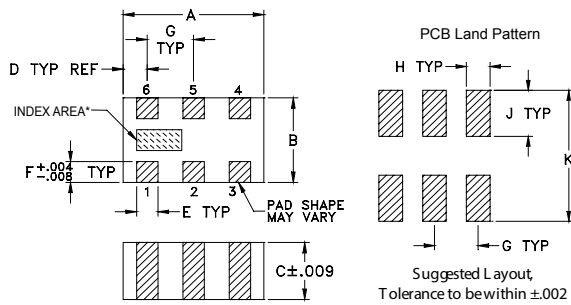
## Pad Connections

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

Pads 2,3,4 are DC-connected internally

## Configuration R



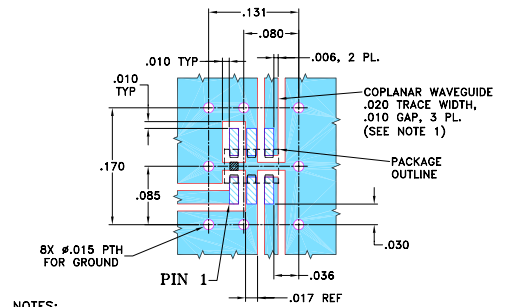


\*Shape of index marking may vary



### Outline Dimensions (inch/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

**Demo Board MCL P/N: TB-419+**  
**Suggested PCB Layout (PL-264)**



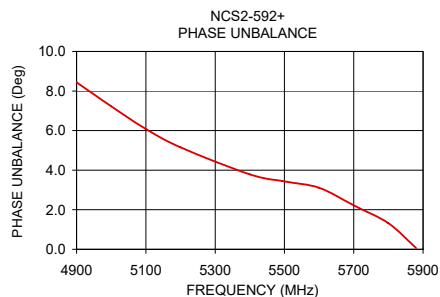
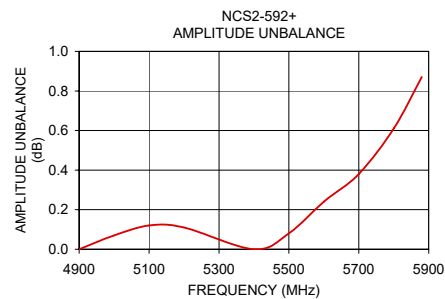
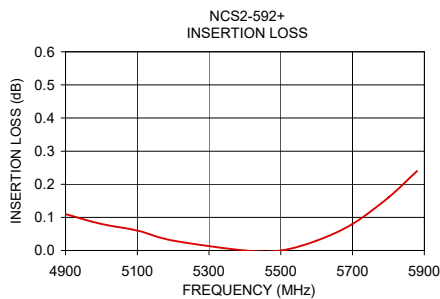
NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B 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

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

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
4900.00	0.11	10.62	0.00	8.44
5000.00	0.08	11.24	0.07	7.23
5100.00	0.06	11.82	0.12	6.08
5200.00	0.03	12.42	0.11	5.15
5400.00	0.00	13.54	0.00	3.79
5500.00	0.00	14.08	0.08	3.43
5600.00	0.03	14.04	0.24	3.11
5700.00	0.08	13.82	0.38	2.22
5800.00	0.16	13.13	0.61	1.32
5880.00	0.24	12.42	0.87	0.06

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



### Additional 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-Circuits' applicable established test performance criteria and measurement instructions.  
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