Ceramic Balun **RF Transformer**

50Ω 1650 to 2850 MHz

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Input RF Power***	ЗW
*** Derate linearly to 2W at 85°C Permanent damage may occur if any	of these limits are exceeded.

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
Pads 2,3,4 are DC-connected internally	

Outline Drawing



Outline Dimensions (inch)

D

.014

0.36

.110

2.80

Demo Board MCL P/N: TB-419+

Suggested PCB Layout (PL-264)

006, 2 PL.

131--.080

INDIEST: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.10⁺⁺ ±.001⁺⁺. COPPER: 1/2 0.2. EACH SIDE. FOR OTHER MATERIALS TRACE WITH AND GAP MAY NEED TO BE MODIFIED. S. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER

Е

.012

0.30

F

.012

0.30

grams

-COPLANAR WAVEGUIDE .020 TRACE WIDTH, .010 GAP, 3 PL. (SEE NOTE 1)

PACKAGE

1

-.036 -.017 REF L.030

.008

wt

С

.033

0.84

.039

1.00

1 к

А

G

.010 .010 TYP

PIN 1^{j}

8X #.015 PTH

BARE COPPER).

NOTES:

.026 .014

0.66

.079

2.01

в

.049

1.24

0.36

н

Features

- wideband, 1650 to 2850 MHz
- low phase unbalance, 4 deg. and amplitude unbalance, 0.4 dB typ.
- miniature size, 0.079"x0.049"x0.033"
- LTCC construction
- · low cost
- · aqueous washable

Applications

- ŴĹAN • WIMAX/WIBRO
- MMDS
- radar
- Electrical Specifications (T_{AMB}=25°C) WCDMA FREQUENCY INSERTION* 0 PHASE AMPLITUDE UNBALANCE AT SECONDARY[†] RATIO (MHz) LOSS UNBALANCE (dB) (dB) (Deg.) Тур. Тур. 1650-2850 4 0.4 1.0 1

* Insertion Loss is referenced to mid-band loss, 0.7 dB. Reference Demo Board TB-419+ [†] Relative

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
1650.00	0.19	12.97	0.37	0.60
1750.00	0.10	14.96	0.44	0.06
1950.00	0.01	20.60	0.56	0.89
2150.00	0.00	25.71	0.66	1.65
2350.00	0.07	19.38	0.76	2.42
2450.00	0.13	16.90	0.81	2.85
2550.00	0.21	15.01	0.86	3.36
2650.00	0.29	13.59	0.88	3.98
2750.00	0.39	12.46	0.88	4.67
2850.00	0.49	11.59	0.83	5.55



NCS1-292+ INSERTION LOSS 1.0 (qB) 0.8 LOSS 0.6 INSERTION 0.4 0.2 0.0 1650 1850 2050 2250 2450 2650 2850







For detailed performance specs & shopping online see web site

```
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Training Provides ACTUAL Data Instantly at minicipality.
                                                     IF/RF MICROWAVE COMPONENTS
```

Mini-Circuits



RS/AM 111214

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's and terms and conditions (collective), "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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp.

NCS1-292+

CASE STYLE: GE0805C-1 PRICE: \$ 0.99 ea. QTY (20) PRICE: \$ 0.94 ea. QTY (100)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Available Tape and Reel at no extra cost Reel Size Devices/Reel 20, 50, 100, 200, 500,1000, 2000 7"

10 100							
Typical Performance Data at 25 ^o C**							
EQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALAI (Deg.)			
1650.00	0.19	12.97	0.37	0.60			
1750.00	0.10	14.96	0.44	0.06			
1950.00	0.01	20.60	0.56	0.89			
2150.00	0.00	25.71	0.66	1.65			
2350.00	0.07	19.38	0.76	2.42			
2450.00	0.13	16.90	0.81	2.85			
2550.00	0.21	15.01	0.86	3.36			
2650.00	0.29	13.59	0.88	3.98			
2750.00	0.39	12.46	0.88	4.67			





