

Ceramic Balun RF Transformer

TCN4-162+

50Ω 720 to 1600 MHz



Maximum Ratings

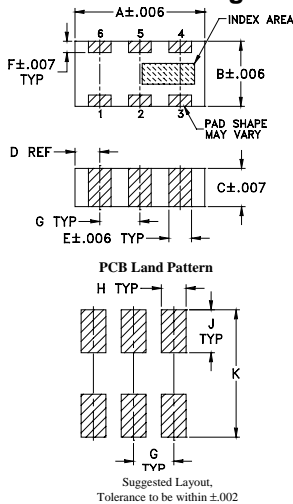
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Input RF Power***	3W
***derate linearly to 2W at 85°C	

Pad Connections

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

Pads 1,3,4,6 are DC-connected internally

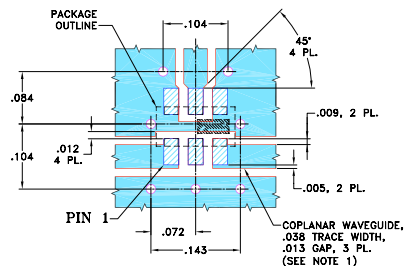
Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28
G	H	J	K	wt	
.039	.024	.042	.123	grams	
0.99	0.61	1.07	3.12	.020	

Demo Board MCL P/N: TB-417+ Suggested PCB Layout (PL-265)



NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". 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

Features

- wideband, 720 to 1600 MHz
- low phase unbalance, 2 deg. typ. and amplitude unbalance, 0.3 dB typ.
- miniature size, 0.12"x.06"x.037"
- LTCC construction
- low cost
- aqueous washable

Applications

- GSM
- WCDMA
- GPS
- ISM

Electrical Specifications (T_{AMB}=25°C)

Ω RATIO (Secondary/Primary)	FREQUENCY (MHz)	INSERTION* LOSS (dB)	PHASE UNBALANCE† (Deg.) Typ.	AMPLITUDE UNBALANCE (dB) Typ.
4	720-1600	1.0	2.0	0.4

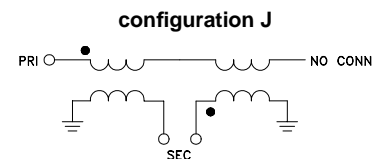
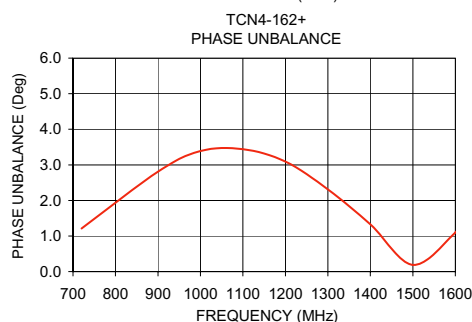
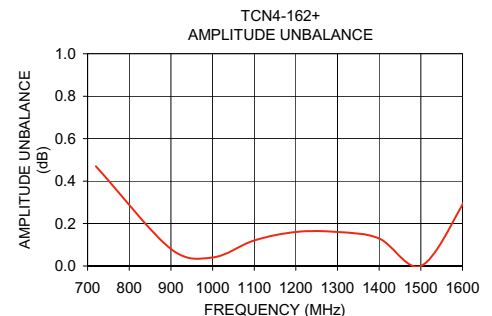
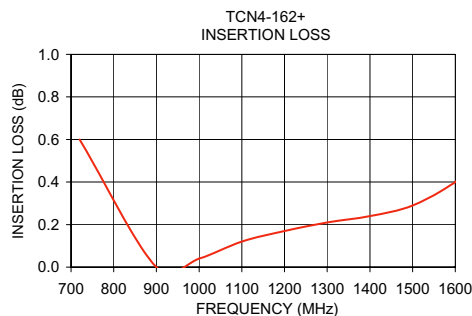
* Insertion Loss is referenced to mid-band loss, 0.7 dB. Reference Demo Board TB-417+

† Relative to 180°

Typical Performance Data at 25°C**

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
720.00	0.60	10.28	0.47	1.21
900.00	0.00	25.18	0.08	2.81
1000.00	0.04	19.64	0.04	3.39
1100.00	0.12	16.88	0.12	3.44
1200.00	0.17	16.38	0.16	3.09
1300.00	0.21	17.28	0.16	2.31
1400.00	0.24	19.25	0.13	1.33
1500.00	0.29	21.00	0.00	0.19
1600.00	0.40	19.65	0.29	1.10

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



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RF/IF MICROWAVE COMPONENTS

REV. A
M111644
TCN4-162+
ED-12817/34B2
RS/CP
070625