Ceramic Balun

RF Transformer

TCN4-162+

50Ω 720 to 1600 MHz

CASE STYLE: FV1206-1

Maximum Ratings

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

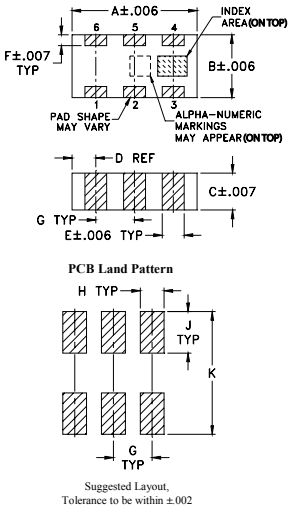
**Derate linearly to 2.5W at 100°C
Permanent damage may occur if any of these limits are exceeded.

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



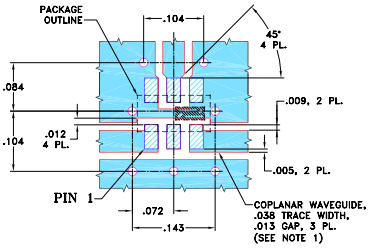
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

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

+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, 3000

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

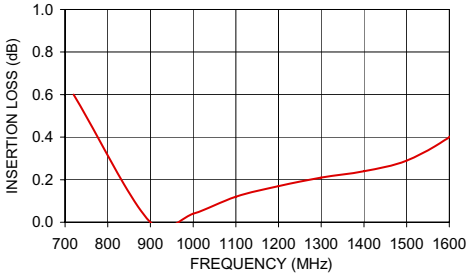
* Insertion Loss is referenced to mid-band loss, 0.7 dB. Reference Demo Board TB-417+
† Relative to 180°

Typical Performance Data at 25°C**

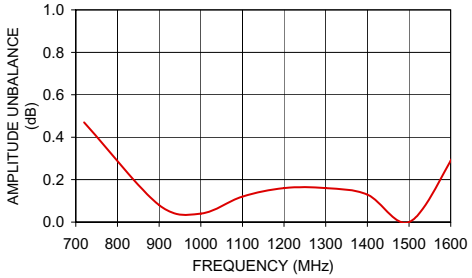
FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
720.00	0.60	10.28	0.47	1.21
900.00	0.00	25.18	0.08	2.81
1000.00	0.04	19.64	0.04	3.39
1100.00	0.12	16.88	0.12	3.44
1200.00	0.17	16.38	0.16	3.09
1300.00	0.21	17.28	0.16	2.31
1400.00	0.24	19.25	0.13	1.33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

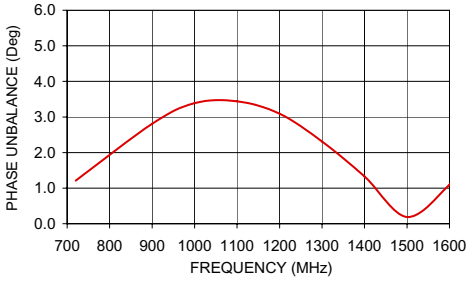
TCN4-162+
INSERTION LOSS



TCN4-162+
AMPLITUDE UNBALANCE



TCN4-162+
PHASE UNBALANCE



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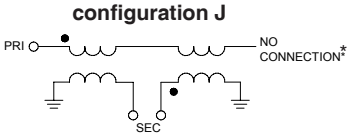

*Internal open circuit

Notes
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