

RF Transformer

75Ω 950 to 1450 MHz

TCN1-152-75+



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

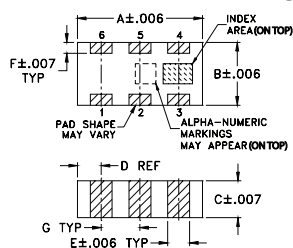
SECONDARY DOT (Balanced) 3

SECONDARY (Balanced) 1

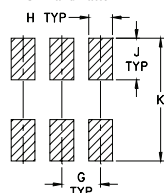
NO CONNECTION 2

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

Outline Drawing



PCB Land Pattern



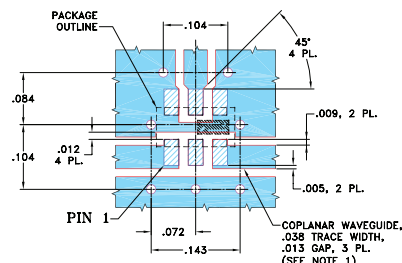
Suggested Layout,
Tolerance to be within ±.002

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:

- 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.
- 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

Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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/MCLStore/terms.jsp

Features

- wideband, 950 to 1450 MHz
- low phase unbalance, 3 deg. typ.
- miniature size, 0.12"x.06"x.037"
- LTCC construction
- low cost
- aqueous washable

Applications

- Cable TV

CASE STYLE: FV1206-1

PRICE: \$ 0.99 ea. QTY (20)

\$ 0.94 ea. QTY (100)

+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	FREQUENCY (MHz)	INSERTION* LOSS (dB)	PHASE UNBALANCE† (Deg.) Typ.	AMPLITUDE UNBALANCE (dB) Typ.
1	950-1450	1.0	3	1.0

* Insertion Loss is referenced to mid-band loss, 0.8 dB. Reference Demo Board TB-417+

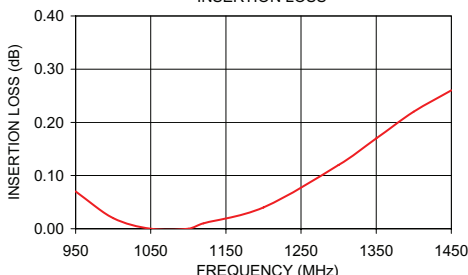
† Relative to 180°

Typical Performance Data at 25°C**

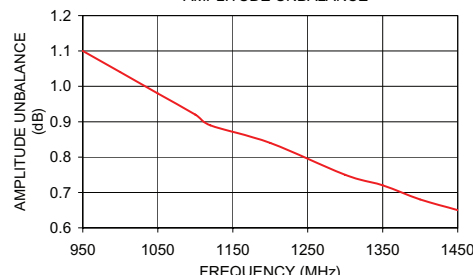
FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
950.00	0.07	16.40	1.10	6.63
1000.00	0.02	19.14	1.04	6.10
1050.00	0.00	21.78	0.98	5.32
1100.00	0.00	22.90	0.92	4.67
1120.00	0.01	22.65	0.89	4.33
1200.00	0.04	19.87	0.84	2.91
1300.00	0.12	16.67	0.75	1.10
1350.00	0.17	15.40	0.72	0.24
1400.00	0.22	14.44	0.68	0.79
1450.00	0.26	13.59	0.65	1.66

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

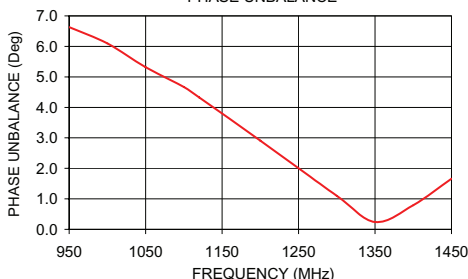
TCN1-152-75+
INSERTION LOSS



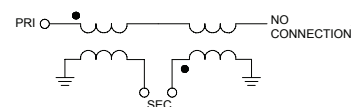
TCN1-152-75+
AMPLITUDE UNBALANCE



TCN1-152-75+
PHASE UNBALANCE



configuration J



*Internal Open Circuit