



**THE DATASHEET OF
TCN1-23+**



Ceramic Balun RF Transformer

50Ω 1300 to 2300 MHz

TCN1-23+



Generic photo used for illustration purposes only
CASE STYLE: FV1206-1

+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, 3000

Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

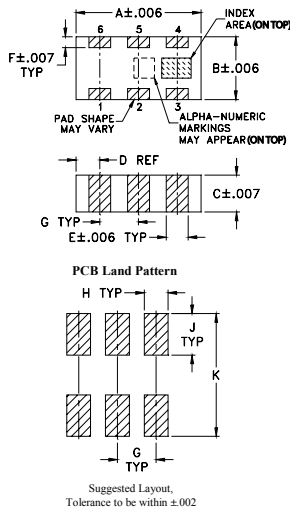
Input RF Power** 5W

**From 85°C derate linearly to 2.5W at 100°C
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

PRIMARY DOT	4
PRIMARY (GND)	2,5
SECONDARY DOT	1
SECONDARY	6
NOT USED	3

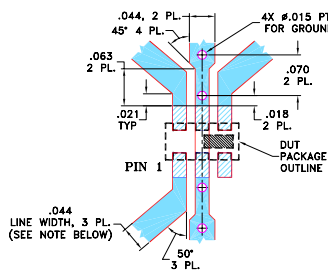
Outline Drawing



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-287 Suggested PCB Layout (PL-163)



- NOTE:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH 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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 1300 to 2300 MHz
- miniature size, 0.12"x.06"x.037"
- LTCC construction
- low cost
- aqueous washable

Applications

- DECT
- PCS
- PHS
- PDS
- PDC

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

Ω RATIO	FREQUENCY (MHz)	INSERTION* LOSS (dB)	PHASE UNBALANCE † (Deg.) Typ.	AMPLITUDE UNBALANCE (dB) Typ.
1	1300-2300	0.7	5.0	0.7
	1800-2000	0.6	4.0	0.5

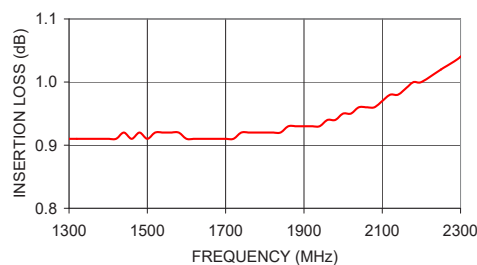
* Insertion Loss is referenced to mid-band loss, 0.8 dB

† Relative to 180°

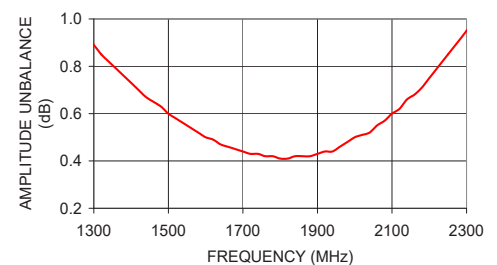
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
1300.00	0.91	15.33	0.89	1.52
1500.00	0.91	16.32	0.60	1.46
1600.00	0.91	17.14	0.50	1.81
1700.00	0.91	18.31	0.44	2.34
1800.00	0.92	19.68	0.41	3.09
1900.00	0.93	21.20	0.43	3.82
2000.00	0.95	22.85	0.50	4.57
2100.00	0.97	24.40	0.60	5.34
2200.00	1.00	25.70	0.75	6.05
2300.00	1.04	26.43	0.95	6.61

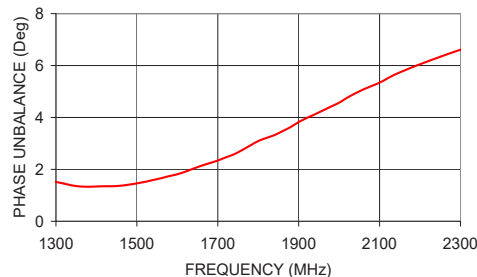
INSERTION LOSS



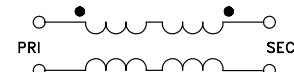
AMPLITUDE UNBALANCE



PHASE UNBALANCE



configuration G



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