LTCC Balun

RF Transformer

BLNK1-252R+

50Ω 2400 to 2500 MHz 1:1 Ratio



Generic photo used for illustration purposes only

CASE STYLE: NK0402C-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, 4000

Maximum Ratings

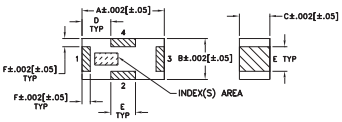
Operating Temperature	-40°C to 85°C
Storage Temperature*	-40°C to 85°C
Input RF Power**	0.5W at 25°C

*Refer to product storage temperature after installation.
Suggestion for T&R unused product storage condition: +5~+35°C, Humidity 45~75%RH, 12 Month max.
Permanent damage may occur if any of these limits are exceeded.
•• Derate linearly to 0.25 W at 85°C

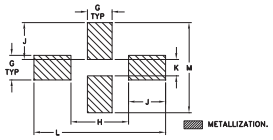
Pad Connections

PRIMARY DOT (Unbalanced Port)	4
GND	2
SECONDARY(Balanced)	1
SECONDARY (Balanced)	3

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within .002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.039	.020	.015	.014	.012	.004	.012
0.99	0.51	0.38	0.36	0.30	0.10	0.30

H	J	K	L	M	wt
.028	.018	.008	.063	.043	grams
0.71	0.46	0.20	1.60	1.09	.0007

Features

- miniature size 0402 (0.039" [1.0mm] x 0.020" [0.5mm] x 0.015" [0.37mm])
- low phase unbalance, 0.7 deg. and amplitude unbalance, 0.7 dB typ.
- low cost
- aqueous washable

Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		2400	—	2500	MHz
Insertion Loss*	2400 - 2500	—	0.3	1.3	dB
Amplitude Unbalance	2400 - 2500	—	0.7	2	dB
Phase Unbalance†	2400 - 2500	—	0.7	10	Degree
Unbalance Return Loss	2400 - 2500	9	29	—	dB

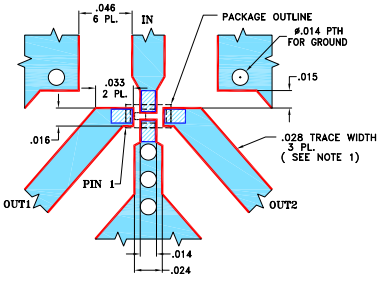
* Tested on Evaluation Board TB-1010+
† Relative to 180°

Typical Performance Data at 25°C**

FREQUENCY (GHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
2.40	0.31	29.19	0.98	0.03
2.41	0.31	29.35	0.90	0.12
2.42	0.31	29.32	0.82	0.24
2.43	0.30	29.26	0.73	0.34
2.44	0.31	29.07	0.65	0.45
2.45	0.30	28.93	0.58	0.49
2.46	0.30	28.59	0.51	0.55
2.47	0.29	28.25	0.43	0.61
2.48	0.29	27.84	0.35	0.69
2.49	0.29	27.49	0.27	0.80
2.50	0.29	27.18	0.20	0.88

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

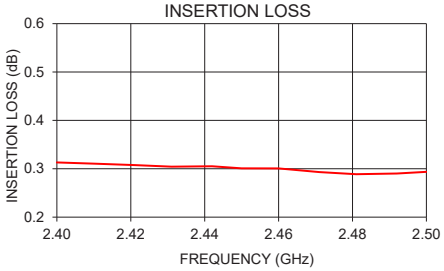
Evaluation Board MCL P/N: TB-1010+
Suggested PCB Layout (PL-557)



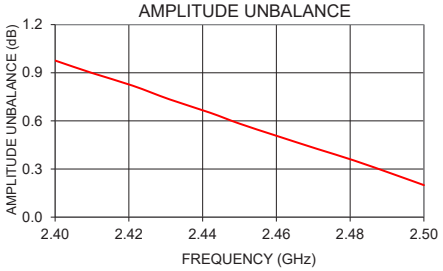
NOTES:
1. TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS .016±.0015. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

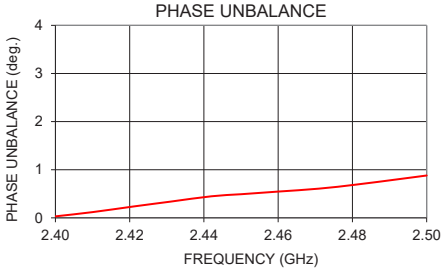
BLNK1-252R+
INSERTION LOSS



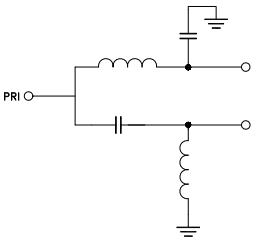
BLNK1-252R+
AMPLITUDE UNBALANCE



BLNK1-252R+
PHASE UNBALANCE



Configuration S



Notes
A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
C. 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

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