LTCC Balun

RF Transformer

BLJC4-542R+

50Ω 4900 to 5950 MHz 1:4 Ratio

Generic photo used for illustration purposes only

CASE STYLE: JC0603C

+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

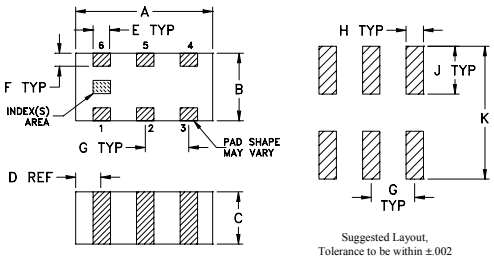
Operating Temperature	-40°C to 85°C
Storage Temperature*	-40°C to 85°C
Input RF Power**	0.5W at 25°C

*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 0.25W at 85°C.

Pad Connections

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

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F
.063	.031	.024	.012	.008	.006
1.60	0.79	0.61	0.30	0.20	0.15

G	H	J	K	wt
.020	.010	.022	.053	grams
0.51	0.25	0.56	1.35	0.005

Features

- miniature size 0603 (0.063" [1.6mm] x 0.031" [0.8mm] x 0.024" [0.6mm])
- low cost
- aqueous washable

Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			4		
Frequency Range		4900	—	5950	MHz
Insertion Loss*	4900 - 5950	—	0.9	1.2	dB
Amplitude Unbalance	4900 - 5950	—	0.2	2	dB
Phase Unbalance†	4900 - 5950	—	0.8	14	Degree
Unbalance Return Loss	4900 - 5950	9.5	24	—	dB

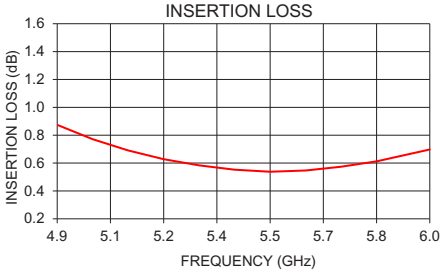
* Tested on Evaluation Board TB-1015+
† Relative to 180°

Typical Performance Data at 25°C**

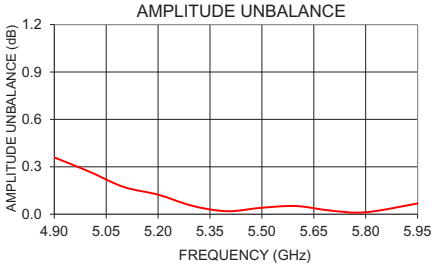
FREQUENCY (GHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
4.90	0.87	12.00	0.36	11.13
5.00	0.77	13.37	0.27	11.03
5.10	0.69	15.03	0.17	10.94
5.20	0.63	17.09	0.12	10.65
5.30	0.58	19.53	0.05	10.26
5.40	0.55	22.22	0.02	9.87
5.50	0.54	23.05	0.04	9.48
5.60	0.55	20.89	0.05	8.74
5.70	0.57	18.17	0.02	7.47
5.80	0.61	15.99	0.01	6.51
5.95	0.70	13.54	0.07	3.98

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

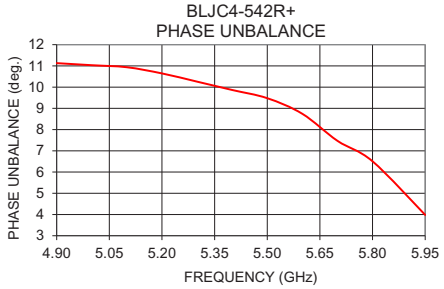
BLJC4-542R+
INSERTION LOSS



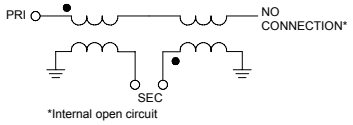
BLJC4-542R+
AMPLITUDE UNBALANCE



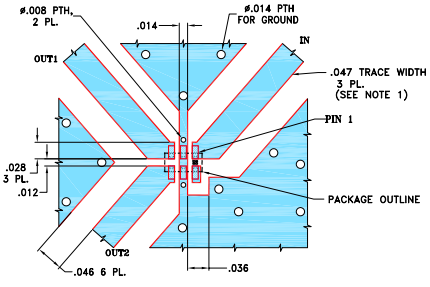
BLJC4-542R+
PHASE UNBALANCE



Configuration J



Evaluation Board MCL P/N: TB-1015+
Suggested PCB Layout (PL-561)



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4233 WITH DIELECTRIC THICKNESS .020±.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.

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.
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