

# LTCC Balun RF Transformer

50Ω 4900 to 5875 MHz 1:1 Ratio

## BLGE1-542R+



Generic photo used for illustration purposes only  
CASE STYLE: GE0805C-9

### Maximum Ratings

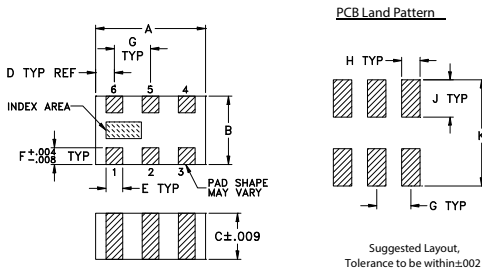
Operating Temperature	-40°C to 85°C
Storage Temperature*	-55°C to 100°C
Input RF Power	2W

\*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.

### Pad Connections

PRIMARY DOT (Unbalanced Port)	1
PRIMARY (GND) DC Feed	2
SECONDARY DOT (Balanced)	4
SECONDARY (Balanced)	3
NO CONNECTION	6
NOT USED (GND Externally)	5

### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.0	1.24	0.84	0.36	0.30	0.30
G	H	J	K	wt	
.026	.014	.039	.110	grams	
0.66	0.36	1.00	2.80	.008	

### Features

- Miniature size 0805 (0.079"[2.0mm]) x 0.049"[1.25mm] x 0.037"[0.95mm])
- low cost
- aqueous washable

### Applications

- ISM Band
- WLAN/Wi-Fi
- Bluetooth
- Zigbee

**+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

### Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		4900	—	5875	MHz
Insertion Loss*	4900 - 5875	—	0.8	2.3	dB
Amplitude Unbalance	4900 - 5875	—	0.7	2.0	dB
Phase Unbalance†	4900 - 5875	—	11	—	Degree
Primary Port Return Loss	4900 - 5875	8	16	—	dB

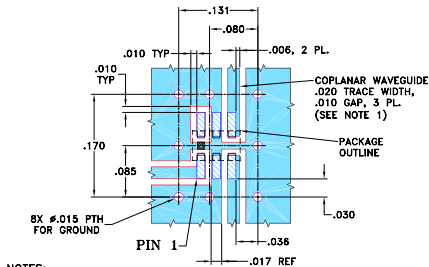
\* Tested on Evaluation Board TB-BLGE1-542R+  
† Relative to 180°

### Typical Performance Data at 25°C\*\*

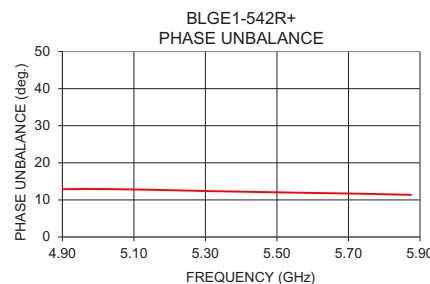
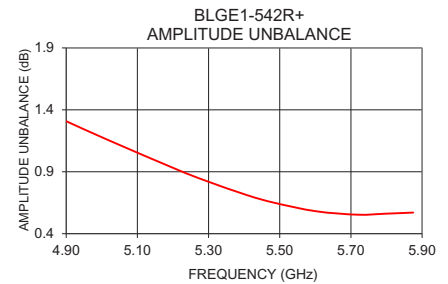
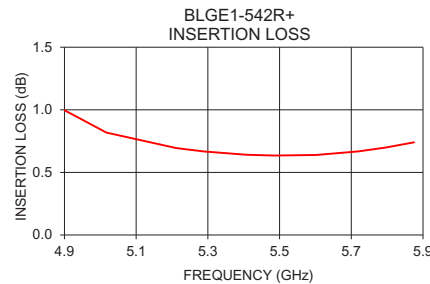
FREQUENCY (GHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
4.900	1.00	15.57	1.31	12.88
5.017	0.82	15.70	1.16	12.93
5.212	0.69	17.32	0.92	12.59
5.290	0.67	17.88	0.83	12.42
5.407	0.64	18.31	0.71	12.21
5.485	0.63	18.09	0.65	12.07
5.602	0.64	17.16	0.58	11.87
5.719	0.67	15.78	0.55	11.69
5.797	0.70	14.71	0.56	11.53
5.875	0.74	13.73	0.57	11.37

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

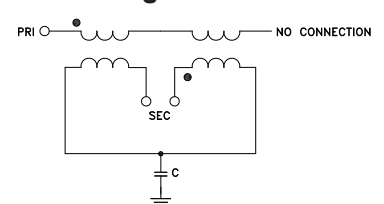
### Evaluation Board MCL P/N: TB-BLGE1-542R+ Suggested PCB Layout (PL-264)



1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". 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



### Configuration R



### 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](http://www.minicircuits.com/MCLStore/terms.jsp)

